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HOME

Welcome to Millersville University's Academic Catalog

Millersville's Catalog provides detailed information for current and prospective students about all academic programs at Millersville as well as important policies and resources.

2023-2024 Academic Catalogs

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UNDERGRADUATE

An undergraduate catalog is published every year by the Millersville University Council of Trustees. This publication is an announcement for the 2023-2024 academic year. The catalog is for informational purposes only and does not constitute a contract. The provisions of this catalog are not intended to create any substantive rights beyond those created by the laws and constitutions of the United States and the Commonwealth of Pennsylvania, and are not intended to create, in and of themselves, any cause of action against Pennsylvania's State System of Higher Education, the Board of Governors, the Chancellor, an individual President or University, or any other officer, agency, agent or employee of Pennsylvania's State System of Higher Education.

Information contained herein was current at time of publication. Courses and programs may be revised; faculty lists and other information are subject to change without notice; course frequency is dependent on faculty availability. Not all courses are necessarily offered each session of each year. Individual departments should be consulted for the most current information.

A Member of Pennsylvania's State System of Higher Education

Millersville University does not discriminate on the basis of race, color, religion, national origin, ancestry, sex, age, or disability in admission or access to, or treatment or employment in, its programs and activities. This includes Title VI of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972, and the Americans with Disabilities Act of 1990.

Coordinators: Services for Students with Disabilities—Dr. Sherlynn Bessick, Director, Office of Learning Services, Lyle Hall, 717-871-5554; Title IX—Mr. Bradley Davis, Interim Title IX Coordinator, Dilworth Building, 717-871-4100— Ms. Diane Copenhaver, Executive Director for Human Resources, Dilworth Building, 717-871-4950.

Safety and Security Information

For current information about Millersville University campus security, in conformity with the requirements of Pennsylvania Act 1988-73, the College and University Information Act, and the federal Crime Awareness and Campus Security Act of 1990, contact:

University Police
Millersville University
P.O. Box 1002
Millersville, PA 17551-0302

Phone: (717) 871-4357
www.millersville.edu/police (<http://www.millersville.edu/police/>)

An Introduction to Millersville University

Millersville University of Pennsylvania, located in scenic Lancaster County, is one of the state-owned institutions of higher education that make up Pennsylvania's State System of Higher Education.

History

In the early 1850s, a group of private citizens in Lancaster County decided to sponsor a three-month summer school program that would provide more education for local pupils than what was then available in public

schools. The immediate success of that initial program prompted its sponsors to propose that a permanent academy be established. The decision eventually led to the founding of what is now Millersville University.

The academy began in 1854 with the construction of a three-story building containing a small auditorium, two classrooms and housing for 50 students, located on seven-and-one-half acres at the corner of West Frederick and George streets in Millersville. In 1855, just as the building was nearing completion, the trustees saw an opportunity to promote the new school by offering its free use to J.P. Wickersham, the superintendent of Lancaster County Schools, who was searching for a place to hold a three-month teachers' institute.

Wickersham opened his Lancaster County Normal Institute on April 17, 1855, with 147 students each paying \$34 for room, board and tuition for the three-month term. Before the term was over, both Wickersham and the academy trustees agreed that the school should become a permanent normal school.

The Lancaster County Normal School, the first school of its kind in the state, opened on November 5, 1855, in Millersville with approximately 100 students. The original academy building, soon known as "Old Main," was expanded and enlarged over the years and served the college in many capacities until it was razed in 1970. The University's 11-story Francine G. McNairy Library and Learning Forum at Ganser Hall now stands on that site.

Two years after the school's opening, the Normal School Law of Pennsylvania was enacted. It divided the state into 12 normal school districts, with Lancaster, York and Lebanon counties forming the second district. The law also established certain minimum requirements for facilities and curricula. The state legislature, however, enacted no funds for the development of the schools. The trustees at Millersville raised \$20,000 from gifts and subscriptions of stock, at \$25 a share, to finance the expansion necessary to meet the requirements of the law.

On December 2, 1859, Millersville was approved as the first State Normal School. When the school passed completely under the control of the state in 1917, all shares were redeemed at the par value of \$25, ending 62 years of private control.

In 1927, Millersville became a State Teacher's College and was empowered to grant the Bachelor of Science in Education degree. In 1959, the College's name was changed to Millersville State College and a master's program in education was added. In 1962, the College was authorized to grant the Bachelor of Arts degree. In 1982, the Pennsylvania Legislature passed Senate Bill 506, creating the State System of Higher Education, effective July 1, 1983. On that date, Millersville State College became Millersville University of Pennsylvania.

In 1988, Millersville began offering courses at several sites in the city of Lancaster. Both credit courses and continuing education opportunities were provided to serve the educational needs of Lancaster city residents, area businesses and nontraditional students. In 2011, a downtown Lancaster campus opened at the Ware Center. In 2012, the Winter Visual and Performing Arts Center was opened to provide a creative hub for students, faculty and the surrounding community in music, art and theatre. In fall 2014, graduate programs began at the PASSHE Center City Philadelphia location. Also in 2014, Millersville University initiated its first doctoral programs, a Doctor of Education in Educational Leadership and a Doctor of Social Work. Millersville University offered its first fully-online undergraduate completion program in fall 2015 in RN to BSN.

Today, Millersville is proud of its beautiful, well-maintained 250-acre campus abounding with reminders of a long history. The bell from Old Main has been carefully preserved and hung in a dramatic tower. The original library, a lovely brick building built around the turn of the century with turrets, stained glass windows and extensive oak woodwork, has been carefully restored and is now Biemesderfer Center, “the centerpiece of the campus,” which overlooks a scenic pond with two resident swans.

Mission

The mission and vision statements of Millersville University were adopted as part of our strategic plan, Tradition and Transformation. The university mission affirms that we are a community dedicated to high quality education at exceptional value. Our vision states that we will inspire learners to change the world. As a community we are dedicated to our EPPiC Values: Exploration, Public Mission, Professionalism, Integrity, Inclusion, and Compassion.

Curriculum and Programs

Millersville University offers a wide array of undergraduate degree programs in art, business, education, humanities, social sciences, mathematics and sciences, most of which offer many options and choices to students. All Millersville undergraduate degree programs include a general education component designed to develop student communication skills and critical-thinking abilities, as well as provide a broad foundation in the liberal arts, humanities, fine arts, and natural and social sciences.

Millersville also offers three doctoral programs and a range of master’s degree programs in art, education, humanities, social sciences, mathematics and sciences, as well as selected certification programs.

A number of special educational opportunities are provided, including honors programs, independent study, internships, study at other institutions and abroad, student-designed majors and academic remediation.

Millersville University’s faculty, staff and services reflect the University’s concern for student growth and development. There are approximately 300 full-time faculty members available to advise and counsel students on academic and career-related matters. There are also counseling, career planning and placement, and tutorial services, as well as services for nontraditional students. A wide range of cocurricular and extracurricular activities and cultural events are offered.

Accreditation

Millersville University is accredited by the:

- Middle States Commission on Higher Education
1007 North Orange Street
4th Floor, MB #166
Wilmington, DE 198014th Floor
- the Pennsylvania Department of Education;
- and is approved by the American Association of University Women.

The applied engineering and technology management program is accredited by the:

- Association of Technology, Management, and Applied Engineering (ATMAE)
8865 Norwin Ave STE 27
North Huntingdon, PA 15642

The art and design programs are accredited by the:

- National Association of Schools of Art and Design (NASAD)
11250 Roger Bacon Drive, Suite 21
Reston, VA 20190-5248.

The business administration program is accredited by the:

- Accreditation Council for Business Schools & Programs (ACBSP)
11520 West 119th Street
Overland Park, KS 66213.

The Center for Counseling and Human Development is accredited by the:

- International Association of Counseling Services (IACS)
101 S. Whiting Street, Suite 211
Alexandria, VA 22304.

The chemistry programs are recognized by the:

- American Chemical Society (ACS)
1155 16th Street NW
Washington, D.C. 20036.

The computer science program is accredited by the:

- Computing Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET)
415 N. Charles Street
Baltimore, MD 21201.

The music programs are accredited by the:

- National Association of Schools of Music (NASM)
11250 Roger Bacon Drive, Suite 21
Reston, VA 20190-5248.

The nursing programs are accredited by the:

- Commission on Collegiate Nursing Education (CCNE)
655 K Street, NW, Suite 750
Washington, D.C. 20001.

The occupational safety and environmental health program is accredited by the:

- Applied and Natural Sciences Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET)
415 N. Charles Street
Baltimore, MD 21201.

The respiratory therapy program is accredited by the:

- Commission on Accreditation for Respiratory Care (CoARC)
264 Precision Blvd.
Telford, TN 37690.

The school psychology certification program is in full compliance with the:

- National Association of School Psychologists (NASP)
4340 East West Highway, Suite 402
Bethesda, MD 20814.

The social work programs are accredited by the:

- Council on Social Work Education (CSWE)
333 John Carlyle Street, Suite 400
Alexandria, VA 22314.

Teacher education programs are accredited by the:

- Council for the Accreditation of Educator Preparation (CAEP)
1140 19th Street, NW, Suite 400
Washington, D.C. 20036
- Millersville University is a member of the:
 - American Association of Colleges for Teacher Education (AACTE)
1602 L Street, NW, Suite 601
Washington, DC 20036.

The technology education program is in full compliance with the:

- International Technology and Engineering Educators Association (ITEEA)
1908 Association Drive, Suite C
Reston, VA 20191

The Carnegie Foundation Community Engagement Classification

In 2010, Millersville University of Pennsylvania was one of 121 U.S. colleges and universities to earn the inaugural Community Engagement Classification from the Carnegie Foundation for the Advancement of Teaching. Millersville University was reaffirmed to retain the Carnegie Community Engagement Classification in 2020 and currently stands as one of only 243 institutions in the country that hold the elective classification. The Community Engagement Classification recognizes collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity.

The foundation, through the work of the Carnegie Commission on Higher Education, developed the first typology of American colleges and universities in 1970 as a research tool to describe and represent the diversity of U.S. higher education. The Carnegie Classification of Institutions of Higher Education continues to be used for a wide range of purposes by academic researchers, institutional personnel, policymakers and others.

The application process for the Community Engagement Classification is administered by the New England Resource Center for Higher Education (NERCHE). All information about the Community Engagement Classification and the list of classified institutions can be found on the NERCHE website at www.nerche.org (<http://www.nerche.org>). Millersville's classification as a Community Engagement institution is valid until 2026.

The Student Body

Millersville University enrolls approximately 7,200 students. Approximately 68 percent are full-time undergraduates; the rest are part-time undergraduates and graduate students. About 61 percent of undergraduates are women, and one in 10 is at least 25 years old. About 86 percent of Millersville's undergraduates come from southeastern Pennsylvania.

Millersville University admits about 85% of more than 78,000 students who apply each year. Millersville students are above national norms in SAT scores, high school grades and class rank, and in years spent

studying college preparatory subjects such as English, mathematics, foreign languages, science and social studies. Approximately 75 percent of the first-year class has combined Evidence-Based Reading and Writing and Math SAT scores over 1000, and approximately 67 percent graduated in the top half of their high school class.

Over 2,100 students live in University residence halls, with the remainder of the student body commuting from homes and nearby apartments.

Services for Students

STUDENT Life

STUDENT HOUSING

MILLERSVILLE UNIVERSITY RESIDENCY REQUIREMENT

Students who have not earned 60 credit hours are required to live on campus. On-campus housing is defined as residing in one of the following residence halls: East Village, Reighard Hall, Shenks Hall, South Village or West Village. Students entered into a housing contract are obligated to the full term of their housing agreement regardless of their credit hours completed and/or class standing, including graduate student status. Students are obligated to the full term of their housing agreement regardless of credit hours completed. There are additional terms and conditions which affect this policy.

The University Housing and Conferences Services (UHCS) staff is dedicated to providing a safe and engaging living-learning environment in the residence halls. There are many housing options for you to choose from at the 'Ville. Approximately 2,000 students live in the four residence halls on campus. Rooms are designed "suite style" and include top-rated amenities and safety features. The UHCS staff offers many academic and social engagement opportunities to support you in the key areas of academic performance, self-understanding and community connections.

The Housing Residency Requirement was instituted for the benefit of students. Students who live on campus benefit from the resources that support student success. Additionally, research and experience demonstrate that students who live on campus:

- Develop a greater sense of belonging;
- Find it easier to form friendships;
- Participate more in student organizations;
- Develop stronger connections to faculty;
- Increase their awareness of diversity; and,
- Are more likely to complete a degree within four years.

You'll meet and create relationships with many faculty, staff and students from different backgrounds and cultures, and have the opportunity to learn from them. We attempt to create an environment that is inclusive for all our students on campus. Millersville University believes that an inclusive community is a core value, an essential part of the foundation for the community. Gender-inclusive housing furthers the University's nondiscrimination policy and provides a housing option that may appeal to students who identify as transgender, may be more comfortable living with another sex or gender, or do not wish to prescribe to gender classifications.

UNIVERSITY DINING SERVICES

Millersville operates a comprehensive dining service program for students, faculty, staff, and guests of the University. All students are eligible to participate in the dining program. Students who reside in the

University managed residence halls, are required to purchase a Meal Plan. (See Meal Plan – Description and Rates, under Expenses and Financial Aid). All Residence Hall students will automatically be setup with the 19 Ville Plan as a default. Students with 30 credit hours or more will be able to change their meal plan prior to the first day of classes. Off-campus students, including those living in Student Lodging, Millersville, and all commuters may participate in any of our Traditional and Block Meal Plans, which offer exceptional flexibility at various locations throughout the campus. All Dining locations are open to our students and campus community with or without a Meal Plan. University residents and community may dine at the Upper Deck, our “all-you-care-to-eat” dining hall, located in Gordinier Hall. Our retail dining locations are in Gordinier Hall – The Anchor and the Evergreen Café, Student Memorial Center – Galley, Lyle Hall - Cove and Starbucks at the Francine G. McNairy Learning Forum and Library. The Anchor on the first floor of Gordinier Hall features a bakery, showcasing items from our own bake shop, breakfast sandwiches and build-your and grab ‘n go and made-to-order selections, fresh fruit and yogurt bar, a convenience store, a creamery, and full range of beverages. Looking for a pre-work or post workout smoothie or protein shake, stop by the Anchor. Our newest dining opportunity is the popular “Get-Food” app, with pickup available at Starbucks. Descriptions of meal plans and dining hours are available at www.millersville.edu/dining (<http://www.millersville.edu/dining/>).

For more information, see the section under Expenses and Financial Aid.

CENTER FOR COUNSELING AND HUMAN DEVELOPMENT

The Center for Counseling and Human Development, located on the third floor of Lyle Hall, is committed to providing quality mental health care to a diverse student body. The Center supports the academic mission of the University by enhancing students’ emotional, social, and personal development. Accredited by the International Association of Counseling Services, the Center seeks to engage students in counseling, consultation, and outreach to realize their potential and persist to graduation. Licensed psychologists and counselors help students reach greater self-understanding and enhance their abilities to manage immediate and future concerns. Individual counseling, crisis intervention, educational workshops, group experiences and consultation services are available to all registered Millersville University students. Alcohol and other drug counseling is provided by a Counselor with expertise in this area. A psychiatrist is also available for medication evaluation and management once a student has been seen by a Center clinician. All services are confidential, professional and at no cost to students.

HEALTH SERVICES

Health Services, located in the Witmer Building, provides medical care to all registered students. They have a professional staff of physicians, nurse practitioner, and registered nurses. There is no charge to be evaluated by a provider for acute illnesses or injuries. Most treatments and over-the-counter medications are free. They have a dispensary in house which has common antibiotics that can be prescribed to the students for a small fee. Services provided include treatment for minor illness and injuries, monitoring and management of chronic health conditions, sexual health, physical examinations, TB testing, and immunizations (including FREE influenza vaccines), in-house laboratory testing, and medical procedures such as EKGs, wound care, and laceration repair. Students who do not need to be seen can obtain over-the-counter medications and supplies from the Self Care Cart, located in the reception area. A health evaluation form which includes medical history, physical exam, and immunization records are required to be submitted by all students. Refer to the Health Services website, www.millersville.edu/healthservices (<https://www.millersville.edu/>

[healthservices/](https://www.millersville.edu/healthservices/)) for forms and further information. Appointments are available by calling 717-871-5250.

CENTER FOR HEALTH EDUCATION AND PROMOTION

The Elsie S. Shenk Center for Health Education and Promotion (CHEP), located in the Cumberland House, contributes to fulfilling the educational mission of Millersville University by empowering students to make informed decisions and develop lifelong skills that enhance their personal well-being. CHEP contributes to the health, academic success, and retention of students by providing current and relevant information about high-risk behaviors; raising awareness about personal decision making and the impact decisions have on an individual and their community; and engaging students in meaningful opportunities to create a healthy community where all students can achieve their personal and academic goals.

CHEP features a diverse group of trained peer educators who provide lifestyle education programs, awareness events, and outreach on topics including alcohol and other drugs, mental health, sexual responsibility/healthy relationships, stress, and sexual violence. In addition to educational programs, CHEP hosts a wellness fair each fall and spring semesters on campus to connect students with resources and information on health, well-being and wellness. College student health campaigns are designed and implemented based on data collected from Millersville students to promote healthy decision making.

Wellness Coaching is a free service provided through CHEP to students. Wellness Coaching is an individualized process for helping students achieve a higher level of well-being and performance in their academic pursuits as well as life in general when change is desired, yet difficult to achieve. It empowers students to explore health topics of stress, sleep, social support, and substance use. Students can schedule appointments by emailing wellness.coaching@millersville.edu.

CHEP has community partnerships with various Lancaster community organizations to provide students with free resources and services. Sexual assault advocacy services are provided by the YWCA Lancaster in the Cumberland House. Relationship violence advocacy services are provided by Domestic Violence Services of Lancaster. Additional information can be found on the website www.millersville.edu/chep (<https://www.millersville.edu/chep/>)

STUDENT CONDUCT AND COMMUNITY STANDARDS

The Office of Student Conduct and Community Standards (SCCS) fosters student learning and success by balancing individual and community rights, while promoting a safe, student-centered, and inclusive community. The SCCS administers and provides education on the Student Conduct & Community Standards Handbook, advocates for students’ rights, and upholds the community standards and values of Millersville University. The office educates students about the expectations of the Millersville University community and assists them in their development. Through the discipline process, the SCCS challenges students to think ethically and critically about their decision making and role within the campus community. The SCCS teaches accountability and responsible citizenship so every student will thrive within Millersville University’s diverse and dynamic academic community. SCCS works to ensure all Millersville University students have an exceptional, productive, and challenging educational experience in a safe and civil environment.

STUDENT ACCESS AND SUPPORT SERVICES

Millersville University provides diverse, dynamic, meaningful experiences to inspire learners to grow both intellectually and personally to enable them to contribute positively to local and global communities. The Office of Student Access and Support Services (SASS) is a home base for students and families that provides individual support through academic and personal coaching with a holistic approach.

SASS oversees academic support services for the Pre-Scholars Summer Institute, Millersville Scholars Program, Lancaster Partnership, Milton Hershey School Program, Trio Program, and the PASSHE Gear-Up Program. Our programs use the best practices and essential resources to provide excellent academic support to help students realize their full potential. Our students have the opportunity to benefit from:

- Tutoring Services
- Peer Mentoring
- Common Structured Study Hours
- Intensive Outreach and Interpersonal Support
- Individual and Group Meetings
- Four-year Academic Plan for Success
- Monthly Library Learning Workshops
- Living-Learning Community for Residential Students
- Wellness Wednesday and Diversity Workshops
- Midway Motivation Package
- First Gems Organization
- Community Service
- Graduate Assistant Opportunities
- Parent/Student Meeting at McCaskey HS
- Financial Literacy Workshops each semester
- Honor Roll and Dean's List recognition
- LPP Recognition ceremony
- Tri-Alpha Honor Society Ceremony

The Milton Hershey partnership exists as a bridge between the high school college counselor and the SASS office. This partnership helps students transition to Millersville University by combining support from both the high school and the college environment. Students are provided an outreach counselor from SASS while continuing to meet with their high school college counselor to ensure student success and scholarship.

The PASSHE Gear-Up Program supports students from the Allentown, Harrisburg, and Norristown School districts. Students attending Millersville University from these school districts are provided all the services of SASS.

The First-Generation program provides support for all first-generation staff, faculty, undergraduate, graduate and alumni at Millersville University. The program encompasses a first-generation yearly celebration, Tri Alpha (first generation honor society), and First Gems of the Ville (student organization).

Our programs encourage students to question, alter, inspect and challenge their experience for the purpose of constructive self-actualization. Incoming first year students will go through a process that allows them to introspect and retool with purpose, key skills and a

positive attitude towards scholarship. Students who use our services make the necessary changes to be successful at Millersville University.

CAMPUS LIFE

Millersville University believes that the lifelong benefits of a college education are not derived solely from the classroom. Therefore, one of the University's priorities is to develop the full potential of its students and in doing so enhance the quality of their lives. To achieve this goal, Millersville University offers a wide variety of co-curricular activities, as being involved and engaged in campus life provides students the opportunity to build connections with fellow students, faculty, staff and administrators, and plays a critical role in one's own personal and professional development. The Department of Campus Life champions an inclusive and engaging community on campus through programs and activities that foster social belonging, personal leadership development, and campus pride. Students can find ways to get involved in areas such as: Campus Activities, Fraternity and Sorority Life, Leadership Programs, Mascot Team, Commuter and Off-Campus support and Student Organizations.

With more than 180 student organizations, students at Millersville University can find many opportunities that align with their personal and professional interests. If a student's interests are not represented in an existing organization, a new club may be established by following the procedures set forth by the Student Government Association.

Student organizations are open to all enrolled Millersville University students and divided into several general-interest categories: academic, arts and culture, fraternity and sorority life, identity-based, service and civic engagement, sports and leisure, and spirituality.

The first step to getting involved on campus is to activate your Get Involved account by logging into getinvolved.millersville.edu using your Millersville username and password. Once activated, you can browse the listing of student organizations, see current events and programs happening on campus, and stay connected to the campus you now call home.

For questions about getting involved on campus, visit the Department of Campus Life, located in the Student Memorial Center, suite 118, or visit www.millersville.edu/campuslife/.

VETERANS RESOURCE CENTER

Designated a Military Friendly@Bronze Designation campus, Millersville University proudly serves and supports our student veterans and their dependents. The Veterans Resource Center (VRC), located on the north side of campus in the Mercer House, strives to provide the support and assistance necessary for students to achieve academic success while fostering camaraderie and engagement. The VRC is staffed by student veterans who through their shared experiences endeavor to maintain a dynamic, effective welcoming center that is responsive to the needs of our student veteran community.

SERVICES FOR COMMUTERS

Commuting students are an integral part of the University community and are encouraged to take advantage of the many opportunities to get involved on campus. Commuter student support provided by the Department of Campus Life, engages commuter students throughout the academic year through various programs and events. Millersville has over 180 student organizations that meet throughout weekdays and on weekends, which makes it easy for commuters to become

engaged during a time that works best for them. A complete listing of student organizations can be found at getinvolved.millersville.edu. The Club De'Ville, located on the lower level of the Student Memorial Center, is a space designed for students to relax. The lounge area is equipped with comfortable seating, a video gaming area, arcade games and grab-and-go food.

BUS SERVICE

Millersville University coordinates bus service for students, faculty and staff for traveling throughout the campus and surrounding apartment complexes, the Park City Mall and a bus route to downtown Lancaster. Schedules are available in the Student Memorial Center, at the Student Information Desk, located just inside the main entrance. The schedule plus additional information can be found at www.millersville.edu/shuttlebus (<http://www.millersville.edu/shuttlebus/>).

DR. RITA SMITH WADE-EL INTERCULTURAL CENTER

The Dr. Rita Smith Wade-El Intercultural Center, also known as Intercultural Center or ICSE, is a student-centered resource that is dedicated to creating and sustaining a campus culture that aligns with the University's commitment to diversity, equity and inclusion, and its EPPiC Values. The Intercultural Center aims to provide students with opportunities to explore their multiple identities and learn about the background and experiences of others. Together, the hope is to create a culture of inclusion, equity and a sense of belonging here on campus and beyond.

The Intercultural Center promotes the importance of a sense of belonging and centers marginalized populations/identities in its programming efforts. ICSE engages students in the development of knowledge, awareness and skills around cultural competence, social justice and advocacy for marginalized populations to live and thrive in a diverse and global world.

ICSE also works to support identity-based/multicultural student organizations such as the African and Caribbean Student Association (ACSA), the Asian Student Inclusivity Association (ASIA), the Black Student Union (BSU), Friends of Advocates for Native Nations (FANN), Gender and Sexuality Alliance (GSA), Hillel-Jewish Students Fellowship, National Association for the Advancement of Colored People (NAACP), National Minority Teachers Association (NMTA), National Society for Black Engineers (NSBE) and Society on Latino Affairs (SOLA). For more information about these organizations and how to get involved, visit getinvolved.millersville.edu.

The Intercultural Center is located in the Student Memorial Center (SMC), Room 110/111. The center is open Monday-Thursday, 10 a.m.-7p.m., and Friday 10 a.m -5 p.m. A resource room with a robust library and free printing is available while open. For more information about programs and services provided by the Intercultural Center, visit www.millersville.edu/icse# and follow @mu_interculturalcenter on Instagram.

CAMPUS RECREATION

All students are encouraged to participate in Intramural Sports, which are planned and administered with considerable student input. Activities include basketball, flag football, indoor and outdoor soccer, softball, ultimate, volleyball, floor hockey, dodgeball, badminton, tennis, table tennis, field hockey and eSports. The Campus Recreation Department also offers special event programs like Rec the Quad, Iron Chef, NFL and NCAA watch parties. The Intramural Department has a number of

student employment options available. Go to MLeagues.com for more information.

CLUB SPORTS

Club sports are student organizations that offer organized, non-varsity competition and recreational activities. Club sports currently active on campus include baseball, basketball, bowling, equestrian, fencing, Division 2 and Division 3 ice hockey, mixed martial arts, men's lacrosse, men's and women's rugby, men's and women's volleyball, MU Dance, running, ultimate frisbee, and women's soccer.

ROPES COURSE

Millersville University offers an outdoor ropes course experience with over 30 different elements. Activities are designed for team building or adventure-based activities.

REC CENTER

Facility within the Student Memorial Center that contains:

- Various fitness equipment
- Indoor track
- Three-court field house
- Multi-activities court - The multi-activities court (MAC) is an enclosed court featuring basketball hoops, nets for indoor soccer and roller hockey. The enclosed structure makes it the perfect location to host intramural dodgeball, indoor soccer and floor hockey leagues.
- Two racquetball courts – one of which has been converted into a mixed martial arts room
- Functional training room – unique space full of the latest and greatest functional training equipment, including a sled, plyo boxes, TRX, and more!
- Dance studio

STUDENT MEMORIAL CENTER

The Student Memorial Center (SMC) is often viewed as the living room of Millersville's Campus and fosters community, engagement, and Marauder pride. The SMC has six furnished conference rooms and a large multipurpose room to support engagement and student success on campus and are used for weekly meetings, concerts, lectures, and other special events. Reservations for conference rooms and the multipurpose room can be made online via Ad Astra. The SMC houses the following departments:

- Department of Campus Life
- Dr. Rita Smith Wade-El Intercultural Center
- Student Services Inc. Business Office
- The Galley Food Court
- Ticket Office
- IT Technical Operations
- PSECU Financial Education Center
- SMC Rec Center
- University Store
- Student Affairs Suite

EDUCATIONAL AND POPULAR PROGRAMMING

A wide range of programming is provided for students by the University Activities Board (UAB). Allocated by the Student Government Association, UAB is a student-run organization divided into committees, with each

committee responsible for programming in their specific area (traditions, entertainment, recreation and leisure, late night and travel).

STUDENT GOVERNMENT ASSOCIATION

To foster an atmosphere of open communication within the University, Millersville offers a number of avenues for student participation in University governance. Consultation with students is an integral step in any major decision. The aim of the Student Government Association is to encourage students to participate in sound governmental procedures and develop innovative and creative University programs.

Students participate in University governance through the Student Government Association and Faculty Senate committees such as the Undergraduate Course and Program Review Committee, and the Academic Policies Committee. As the governmental body of the students, the Student Government Association is an integral component in the governance of the University and works with the faculty and administration on major University policies. The Student Government Association approves the constitution of every campus organization, delegates responsibility to its constituent groups, recommends the allocation of activity fee funds and makes emergency allocations to recognized University organizations when necessary. These decisions are subject to approval by the University president.

STUDENT COMMUNICATIONS MEDIA

The Snapper, MUTV 99 and WIXQ-FM are the official student communications media of Millersville University.

The Snapper is the University's student-run newspaper, published weekly during the academic year. For many years the paper has won the highest awards given by major press associations.

MUTV 99, the student-operated campus cable TV station, provides the University with 24/7 programming throughout the school year.

WIXQ-FM, the campus radio station, provides the University and local community with educational programming, news, sports, talk shows and music. The station adheres to all Federal Communications Commission regulations and is student operated.

FAITH AND SPIRITUALITY

Millersville University has students from many different backgrounds and faith traditions. We offer a welcoming environment for students to practice or explore these faiths in an open-minded setting while promoting appreciation and respect for religious and spiritual diversity.

Student Organizations offer faith and spirituality programs and services, including Athletes Bible Fellowship, Bible Campus Ministries, College Bible Fellowship, Fellowship of Christian Athletes, Hillel, John Newman Association (Roman Catholic), Navigators, Orthodox Christian Fellowship, Reformed University Fellowship, United Campus Ministry, University Christian Fellowship, and Young Life.

The Inter-Faith Council of Ministers is made up of campus ministers who serve the University community by providing faith-based counsel, assisting during times of crisis, and participating in faith and spirituality events throughout campus.

Millersville-area churches welcome students to their services and often sponsor programming specifically for students. Students who do not find a place of worship in Millersville will find many options available in the nearby city of Lancaster. Three synagogues in Lancaster represent the Reform, Conservative and Orthodox branches of Judaism. Seven Muslim

mosques are located in the Harrisburg area; a Buddhist association is in Columbia; and a Hindu temple is in New Cumberland. For more information, please visit the Faith and Spirituality link on the Student Affairs and Enrollment Management page at www.millersville.edu/studentaffairs.

INFORMATION TECHNOLOGY

Information Technology provides a wide variety of services for faculty, staff and students that enhance the processes of research, instruction and learning. These services include training materials relating to software products, maintenance and support for classroom technology, documentation and how-to instructional materials, assistance in statistical analysis of data, and advice on purchasing decisions.

Over a dozen general-purpose and specialized computer laboratories located throughout the campus, and housing more than 475 computers, provide students with convenient access to the University network, email and the internet. These labs are multimedia-capable and may be used by faculty as technology classrooms to enhance students' learning experiences. The labs are available during daytime and evening hours.

Millersville University has a robust, high-speed, campus-wide network that connects all major buildings and residence halls to campus network services and the internet. Every Millersville student automatically gets a myVille account and an email account upon admission to the University. myVille is the student portal to the University's computing and networking systems—the student access point to Millersville University's online services. Residence hall students must have valid myVille accounts to access the internet from their residence hall rooms. This is also true for all students using computers in the various computer labs around campus. Network and internet usage are governed by the Millersville University Policy for Responsible Use of Electronic Resources.

Wireless access to the internet is available throughout the campus.

Assistance for any type of technology question is provided by the Technology Assistance Center (TAC). The TAC, located in the Boyer Building, provides telephone support for hardware and software questions, as well as walk-in support for faculty, staff and students. Visit the Information Technology web page, www.millersville.edu/infotech (<http://www.millersville.edu/infotech/>), for the TAC's available hours.

For complete details about the Information Technology staff, services provided, equipment in labs and much more, visit the Information Technology web page, www.millersville.edu/infotech (<http://www.millersville.edu/infotech/>), or phone (717) 871-7777.

Services for Nontraditional and Adult Students

While the majority of Millersville undergraduates are full-time residential students of traditional college age, an increasing number of students are working professionals, commuters, age 23 or older, attending part-time and/or parents of young children. Millersville is working to meet the needs of these students through a variety of services.

For information on admission to Millersville as a nontraditional or adult student, see the section on Admission to Millersville University. For more information on services for adult students, contact graduate.admissions@millersville.edu, or call (717) 871-4723.

Special Educational Facilities

Language and Culture Studies Media Center

The Language and Culture Studies media center in McComsey Hall includes the instructional digital language lab with 30 student stations. The department also has a collection of visual, audio, games and print materials for the study and teaching of French, German and Spanish.

Francine G. McNairy Library and Learning Forum

The Francine G. McNairy Library and Learning Forum is a learner-centered hub for the University community, dedicated to educating, inspiring and connecting people with ideas, information and each other. Librarians and information professionals are available to assist students with online and in-person research, information literacy and accessing information resources appropriate for their studies.

Students and members of the University community can access library resources by visiting the library or the library's website, www.library.millersville.edu (<http://www.library.millersville.edu>). Library collections include electronic journals, databases, streaming video and eBooks, as well as physical collections and collections of books, films, and curriculum kits. The Archives and Special Collections is a repository for unique historical documents and records focused on the University and local region. The library features spaces for research and learning, including the Digital Learning Studio, where students can seek assistance with digital content creation, 3D printing and other current technologies. Flexible spaces for group and individual study and meetings are available for any member of the Millersville University community to use.

In addition, the Francine G. McNairy Library and Learning Forum is home to the Writing Center, an advising center, the Integrated Studies office and the Starbucks Café.

Student Policies

Students are expected to familiarize themselves with and abide by all student conduct regulations found in this catalog and other University publications, including the Student Code of Conduct, the Living on Campus Handbook and the Student Handbook. Please refer to the Student Handbook for information on student discrimination grievance procedures, sexual-harassment policy, and policy on sales and vendors.

Identification Card

Enrolled students are required to have a Millersville University identification card. The card is needed for facility access and for the use of many campus services and activities.

Identification cards may be obtained at the campus I.D. office in the lobby of the Boyer Building. There is no charge for the first card, and the current fee for replacement is posted in the campus I.D. office.

Office hours are Monday through Friday, 8 a.m. to 4 p.m. Extended hours for the beginning of fall and spring semesters are posted at the I.D. office.

Motor Vehicles

All vehicles parked on the properties of Millersville University must display a valid University-issued parking permit. Permits may be secured at the University Police Parking Division, located at Lebanon House (237 N. George St., rear lower level).

Violations of University parking regulations may result in parking violation tickets and possible disciplinary action, including cancellation of parking privileges, the withholding of grades and the denial of registration

privileges. Parking sections of the Pennsylvania Vehicle Code (Title 75) are also enforced on the properties of Millersville University.

The Parking Division will utilize a waiting list in the event resident student parking reaches capacity for students who live in University residence halls. Office hours are Monday through Friday from 8 a.m.-4:30 p.m. Hours are extended at the beginning of the fall and spring semesters and are posted at the University Police Department.

Privacy of Student Records

The Family Educational Rights and Privacy Act of 1974 was amended in December 2008 by the U.S. Department of Education. It gives students the right to review their academic records, to challenge their contents and to protect their confidentiality. Basic directory information may be disclosed without prior consent of the student. In the event of an alcohol-related incident or a health/safety emergency, parents may be considered appropriate parties to whom a nonconsensual disclosure may be made.

Millersville's policy on the confidentiality of student records is available from the Vice President for Student Affairs and Enrollment Management. Directory information is used to report student achievements in academic, athletic and extracurricular activities through appropriate media. Students may request that such information not be released by filing a written request during the first two weeks of each semester with the Office of the Registrar, Lyle Hall.

Annual notification of the University's policy on confidentiality of student records is also posted on the registrar's website.

Students may file complaints about the contents of their records or alleged wrongful disclosures of information with the Vice President for Student Affairs and Enrollment Management.

Smoking

Smoking is prohibited inside all campus buildings.

Academic Honesty Policy

Students of the University are expected to be honest and forthright in their academic endeavors. To falsify the results of one's research, to steal the words or ideas of another, to cheat on an examination, or to allow another person to commit or assist another in committing an act of academic dishonesty corrupts the essential process by which knowledge is advanced.

Actions that Violate the Academic Honesty Policy

The below lists are for illustration only. They should not be construed as restrictive or exhaustive enumeration of the various forms of conduct that constitute violation of the academic honesty policy.

Plagiarism

Plagiarism is the inclusion of someone else's words, ideas or data as one's own work. When an individual submits work that includes the words, ideas or data of others, the source of that information must be acknowledged through complete, accurate and specific references, and if verbatim statements are included, through quotation marks or other accepted citation practices. By placing their name on a scholarly product, the student certifies the originality of all work not otherwise identified by appropriate acknowledgments. Plagiarism would thus include representing as one's own any academic exercise (e.g., written work, computer program, sculpture, etc.) prepared totally or in part by another. An individual will avoid being charged with plagiarism if there is an acknowledgment of indebtedness whenever one:

1. quotes another person's actual words;
2. uses another person's ideas, opinions or theories, even if they are completely paraphrased in one's own words;
3. borrows facts, statistics or other illustrative materials, unless the information is common knowledge.

These guidelines should be followed for all source types, including books, newspapers, pamphlets, journal articles, websites and other online resources. The above list is for illustration only. It should not be construed as restrictive or exhaustive enumeration of the various forms of conduct that constitute violations of the academic honesty policy.

Fabrication

Fabrication is the falsification of research or other findings. The below list is for illustration only. It should not be construed as restrictive or exhaustive enumeration of the various forms of conduct that constitute violation of the academic honesty policy.

1. Citation of information not taken from the source indicated.
2. Listing in a bibliography sources not actually consulted.
3. Inventing data or other information for research or other academic projects.

Cheating

Cheating is the act or attempted act of deception by which an individual tries to misrepresent that they have mastered subject matter in an academic project, or the attempt to gain an advantage by the use of illegal or illegitimate means. The below list is for illustration only. It should not be construed as restrictive or exhaustive enumeration of the various forms of conduct that constitute violation of the academic honesty policy.

1. Copying from another student's test paper.
2. Allowing another student to copy from one's test paper.
3. Using the course textbook, or other material such as a notebook, brought to class meetings but unauthorized for use during a test.
4. Collaborating during a test with another person by receiving or providing information without the permission of the instructor.
5. Using or possessing specifically prepared, unauthorized materials during a test (e.g., notes, formula lists, formulas programmed into calculators, notes written on the student's clothing or person).

Academic Misconduct

Academic misconduct is the violation of University policies by tampering with grades or participating in the distribution of any part of a test before its administration. The below list is for illustration only. It should not be construed as restrictive or exhaustive enumeration of the various forms of conduct that constitute violation of the academic honesty policy.

1. Stealing, buying or otherwise obtaining all or part of an unadministered test.
2. Selling or giving away all or part of an unadministered test, including answers to an unadministered test.
3. Bribing, or attempting to bribe, any other person to obtain an unadministered test or any information about the test.
4. Buying, or otherwise acquiring, another's course paper and submitting it as one's own work, whether altered or not.
5. Entering a building, office or computer for the purpose of changing a grade in a grade book, on a test or on other work for which a grade is given.

6. Changing, altering or being an accessory to changing and/or altering a grade in a grade book, on a test, on a "Change of Grade" form or other official academic University record which relates to grades.
7. Entering a building, office or computer for the purpose of obtaining an unadministered test.
8. Continuing to work on an examination or project after the specified allotted time has elapsed.
9. Taking a test or course for someone else or permitting someone else to take a test or course in one's place.
10. Giving or taking unauthorized aid in a take-home exam or paper.
11. Submitting work for a class that was already submitted for another class, when unauthorized, or allowing another student to submit or copy from your previously submitted classwork.

What Can Students Do To Protect Themselves from Being Charged with Violations of the Academic Honesty Policy?

1. Prepare thoroughly for examinations and assignments; this also implies attending class on a regular basis.
2. Take the initiative to prevent other students from copying your exams or assignments (e.g., shield your answer sheet during examinations; don't lend assignments to other students for them to copy and turn in).
3. Check your instructor's course syllabus for a section dealing with academic honesty for that course, information on what style sheets or standards manuals to use, etc. If you can't find such a section, ask the instructor about expectations in this area. Instructors should issue clear guidelines at the beginning of a course as to what constitutes dishonesty; ultimately, however, it is the student's responsibility to clear up any uncertainties ahead of time.
4. Don't look in the direction of other students' papers during examinations.
5. Use a recognized handbook for instruction on citing source materials in papers. Consult with individual instructors or academic departments when in doubt.
6. Make use of tutorial services, or other services that may be available, to assist in preparing papers and completing other course assignments properly.
7. Discourage dishonesty among other students.
8. Refuse to assist students who cheat.

Actions Which May Be Taken for Violation of the Academic Honesty Policy

When a faculty member suspects that an act of academic dishonesty has occurred, he/she will meet with the student to:

1. discuss the alleged act;
2. hear any defense the student may have;
3. discuss any proposed academic sanctions;
4. inform the student of their right to appeal faculty-imposed sanctions to the department chair and/or dean of the college.

Academic sanctions that may be imposed by the faculty member include:

1. a verbal reprimand;
2. a written reprimand;

3. requiring the student to redo/resubmit the assignment, test or project;
4. lowering the grade for the assignment, test or project.

Academic sanctions that require a formal charge to be filed with the Associate Provost for Academic Administration include:

1. any sanction in excess of lowering the grade for an assignment, test or project;
2. failing the student for the course;
3. recommending temporary or permanent suspension from the academic major or University.

Faculty members are encouraged to submit a report for each violation of the academic honesty policy to the Associate Provost for Academic Administration regardless of the academic sanction imposed or requested. If more than one such report is filed for a student, even in the case of sanctions imposed only by the faculty member, then the Associate Provost for Academic Administration will meet with the student to discuss these occurrences and possibly impose additional academic sanctions.

Confidentiality

In accordance with the provisions of the Family Educational Rights and Privacy Act of 1974, any information relating to an alleged violation of the University's Student Code of Conduct or to the outcome of a judicial hearing must be treated as strictly confidential by members of the faculty.

Admission to Millersville University

Students may be admitted to Millersville University to work toward an undergraduate degree or to take college-level courses for self-enrichment or career development. Students already holding a bachelor's degree may wish to pursue a second undergraduate degree. For more information on any of Millersville's undergraduate admission programs, contact the Office of Admissions in the Lombardo Welcome Center at 717-871-4625, or visit the Millersville website at www.millersville.edu (<http://www.millersville.edu>).

General Admission Policies for All Applicants to Undergraduate Degree Programs

Qualifying for Admission

To be considered for admission to Millersville University, one must be a graduate of an approved secondary school or hold a General Educational Development (GED) high school equivalency diploma. Traditional students applying directly from high school must have completed a college preparatory curriculum. Generally, the student's academic program should include four units of academic English; three units or more of academic mathematics, minimally including algebra I, algebra II and geometry; three units or more of academic science, including two or more units of laboratory science, biology and chemistry with lab and any other inquiry-based lab or technical science; and three or more units of academic social science coursework. Foreign language coursework at the secondary level is recommended but not required for admission consideration.

Millersville University is test-optional for applicants seeking admissions for 2023 and 2024. Any home-schooled applicant wishing to be

considered for admission to Millersville University should be a graduate of an approved home school association program. A GED issued by the Pennsylvania Department of Education is preferred if the student has not completed an approved program of study.

Admission to Millersville University is granted without regard to race, color, religion, sex, national origin, ancestry, age, handicap, marital status or lifestyle. Applications from qualified out-of-state students are welcomed; requirements for Pennsylvania resident status appear under the Expenses and Financial Aid section of this catalog.

All courses are taught in English, and students are expected to have demonstrated English language proficiency.

How to Apply

Prospective students are encouraged to apply electronically by following the undergraduate application instructions on the Millersville University website at www.millersville.edu/apply (<https://www.millersville.edu/admissions/undergrad/apply/>). If you wish to receive a paper application form, please contact the admissions office. For an application file to be considered complete, the following must also be submitted:

1. An official high school transcript.
2. SAT or ACT score reports (standardized test scores are not required).
3. Personal statement.

Reference letters are recommended, but not required. These may be very valuable for a candidate with borderline academic qualifications if they help establish other exceptional qualities.

Deadlines for Applications

Millersville has a rolling admissions policy and usually notifies applicants of a decision within a month after completed forms and supporting credentials are received. High school students are encouraged to submit applications as early in their senior year as possible. Applicants may apply for admission to begin coursework in the fall, spring or summer semester. Those applying too late for the admission date of their preference will have their application considered for the next available admission date.

Accepting an Offer of Admission

Applicants admitted to the fall semester at Millersville must pay a nonrefundable advance matriculation deposit no later than May 1, or 15 days after the date of the admission letter, whichever is later. Students admitted to University residence halls must also pay an advance housing deposit. These deposits are explained in the Expenses and Financial Aid section of this catalog.

Students must enroll in the semester for which they are admitted. Students who do not enroll must submit a written request for the deposit to be applied to the next semester. This request must be submitted prior to the first day of classes in the term for which admission was offered. Failure to enroll and/or submit the written request will result in withdrawal of the admission offer and forfeiture of the deposit.

Part-Time Students

Full- and part-time degree-seeking applicants must meet the same admission requirements.

Special Admissions Programs for Degree-Seeking Applicants

Student Access and Support Services

Millersville University provides diverse, dynamic, meaningful experiences to inspire learners to grow both intellectually and personally to enable them to contribute positively to local and global communities. The Office of Student Access and Support Services (SASS) is a home base for students and families that provides individual support through academic and personal coaching with a holistic approach.

For more information, see the section under Student Affairs (<https://catalog.millersville.edu/undergraduate/campus-life/>).

INTERNATIONAL ADMISSIONS

In addition to completing general admission requirements, international applicants must submit a copy of their passport, proof of financial support and proof of English language proficiency if the applicant is from a non-majority English-speaking country. For regular admission (not through the English Language Institute), students must score a minimum of “70” on the TOEFL IBT or “6.0” on the IELTS. If the applicant takes and submits SAT scores that meet the University’s general admission standards, then the student does **not** also need to submit TOEFL/IELTS scores.

International transfer applicants with academic credentials from within the U.S. need to fulfill the general transfer admission criteria in addition to the documents previously mentioned for international applicants. If a transfer student completes the equivalent of Millersville’s English Composition 110 course with a “C” or better, they do not need to submit TOEFL/IELTS scores. Students transferring from a foreign higher education institution need to submit official transcripts with certified English translations (if applicable).

CONDITIONAL ADMISSION

Applicants who do not meet the minimum English language requirement may be conditionally admitted to Millersville University through the English Language Institute (ELI). Upon arrival to campus, the ELI will administer a placement test to students to determine in which of the six levels they will begin their coursework.

Transfer Applicants

Students who have completed a minimum of 12 transferable credits of coursework at another regionally accredited institution with an overall academic average of 2.0 or higher may be considered for admission as a transfer student. Applicants must submit an official college transcript from each institution previously attended. Transfer applicants with fewer than 12 transferable credits or less than 2.0 GPA must also submit a high school transcript.

Harrisburg Area Community College (HACC)/Reading Area Community College (RACC) and Millersville University Dual-Admissions Programs

These are dual-advisement programs designed to assist students who begin their studies at the community college and earn an associate degree prior to transferring to Millersville University. Partnership community college students can enter into an intended agreement for eventual transfer by submitting an intention form to the dual-admissions program (on the MU Admissions website). The Millersville University Admissions Office receives the student’s community college transcript at the completion of each semester and can receive specialized guidance, advisement and credit evaluations. Early in their final semester at HACC or RACC (prior to earning an associate degree), students will formally

apply to Millersville for the semester. Additional program guidelines and benefits can be found on the MU Admissions website.

Transfer Credits

Evaluation of transfer credits from other institutions is done by the Registrar’s office after a student is officially admitted to the University. A preliminary credit evaluation is included with the admission letter sent to most students. In general, transfer credit is awarded for college-level courses in fields of study offered at Millersville that were completed with a grade of C- or higher through a regionally accredited institution. For institutions with other grading scales, courses in which the applicant has earned a grade above the lowest passing grade are accepted.

To earn a Millersville degree, transfer students are required to complete a minimum of 30 semester hours through Millersville, including 50 percent of their major department requirements (excluding student teaching).

Students who have been awarded transfer credit for a particular course, and subsequently complete the same course at Millersville, forfeit the transfer credit.

Transfer credits are not used in computing Millersville GPAs.

Military personnel and veteran applicants who do not meet standard transfer admissions criteria can be admitted on full-time probationary status.

program admission admission requirements

Music Majors

Applicants for the B.S. in Music Industry, the B.A. in Music and the B.S.Ed. in Music Education, including transfer applicants and certification students, are required to audition with a solo performance and to take a musical proficiency test. Information about the audition procedure and dates may be obtained from the music department website or by calling 717-871-4701.

Nursing Majors

The Bachelor of Science in Nursing (B.S.N.) degree program is designed for registered nurses who are graduates of accredited diploma or associate degree nursing programs. Admission requirements to Millersville’s nursing program are:

1. Evidence of scholarship as shown by an official transcript from an accredited diploma school of nursing or an accredited associate degree in nursing program.
2. Licensure as a registered nurse in the state of residence and/or clinical practice. RN candidates for licensure will be admitted pending successful completion of state licensure requirements.

The Dual Admission in Nursing Program, in conjunction with Harrisburg Area Community College, provides the opportunity for the student to apply for dual admission to the University as well as the community college. This dual admission enhances student learning by providing access to an array of academic services in support of attaining the bachelor’s degree in nursing. Formal admission to the major in nursing at Millersville University occurs upon graduation from Harrisburg Area Community College.

Readmission of Former Students

Former students in good academic standing at the time of their official withdrawal may apply for readmission at any time. Those who were dismissed for academic reasons must interrupt their enrollment for at least one semester. (Refer to the Academic Standards section.) Those who subsequently attended another institution must have an official

transcript forwarded by that institution to the Millersville University admissions office.

Reentering students are subject to the curriculum and graduation requirements in effect at the time of their readmission, with the exception of those students who reenter within one year of their official withdrawal or dismissal. These students have the option of continuing under the curriculum and graduation requirements in effect for them at the time of their withdrawal or dismissal.

Other Restricted Programs

Millersville occasionally places more stringent admissions requirements on certain degree programs. Students interested in certain programs may be admitted to the University but denied admission to a specific program. Once studies at Millersville are successfully under way, students may formally request to transfer into other majors if they meet minimum departmental standards and if space is available.

Academic Amnesty

Former Millersville University students applying for readmission following a minimum absence of five years since the end of their last semester are eligible to petition for academic amnesty if their cumulative grade point average (CGPA) was below 2.0 at departure. The petition must be in the form of a letter of appeal to the Academic Standards Committee, sent in care of the registrar's office.

In order to be eligible to petition for academic amnesty, the former student must complete an application for readmission to undergraduate degree status. If academic amnesty is granted, the calculation of the CGPA is restarted with the new matriculation semester.

Under academic amnesty, all previous coursework and grades remain on the permanent record but are not included in the calculation of the Millersville University CGPA after amnesty is granted. Students may use courses taken in the pre-amnesty period to fulfill general education requirements if a grade of C- or higher was earned in the course.

Second Baccalaureate Degree Students

Anyone with a bachelor's degree from a regionally accredited college or university may apply to earn a second bachelor's degree. All second-degree students must declare a major at the time they apply for admission.

Nondegree Students Applying for Degree-Seeking Status

Individuals who are high school graduates or hold a General Education Development (GED) certificate may choose this alternative entry into a degree program without taking the SAT or ACT test. These students should first apply to the University as nondegree students. Upon completing 12 credits in at least two subject areas with an average of 2.0 or higher, they may then apply for degree-seeking status.

Adult and Nontraditional Students

Millersville University serves adult and non-traditional students who wish to pursue academic interests while also fulfilling work and/or family responsibilities. Courses and programs enable students to reach educational goals by attending college on a full-time or part-time basis. Most adult students participate in evening, off-campus, online and weekend classes. However, some courses may have additional sections available during the day and can be taken if a student is interested.

Applicants who meet all criteria for admission will be admitted with the same full privileges as other degree-seeking students. Students who are missing prerequisites may be accepted into a program but will need to successfully complete prerequisite courses in order to remain enrolled in the program and retained at the University. A minimum cumulative GPA of 2.0 is required to remain at the University. Some programs may have more stringent requirements based on accreditation standards. New students may begin the admissions process in the spring, fall or summer semester.

If you have taken courses at another college or university, official college transcripts are required from all colleges previously attended. This enables us to create an effective and efficient plan to help you attain your degree.

Opportunities also exist for the adult who did not demonstrate strong academic interests in high school. The only required admission credential is a diploma and official transcript from an approved secondary school, a Commonwealth Secondary School Diploma or a General Education Development (GED) certificate.

Students who are granted admission will be assigned an academic advisor in their major field. Students who do not meet the academic requirements for a specific major may be admitted as an undeclared student and assigned an undeclared advisor. The undeclared advisor will assist students to create a plan so they may reapply for admission to a specific major. Adult students are urged to meet with advisors well before the beginning of the semester to determine course selections. For additional information on off-campus, evening, weekend and online offerings and programs, contact the CGSAL at adultlearning@millersville.edu, or at 717-871-7171.

Special Admission Students

Post-Baccalaureate Teaching Certification Students

Anyone with a bachelor's degree may apply for courses leading to initial or additional teaching certification as a full-time or part-time student. For teaching certification requirements, contact the certification office, Stayer Hall, Room 120. To apply for admission, contact the CGSAL, Lyle Hall.

PASSHE Visiting Students

The purpose of the PASSHE Visiting Student program is to facilitate undergraduate student enrollment at institutions of Pennsylvania's State System of Higher Education and to enable students to take advantage of courses available across the System, without loss of institutional residency, eligibility of honors or athletics, or credits toward graduation at the home institution.

See the Special Academic Opportunities section of this catalog.

Transient Students from Other Colleges

Students in good academic standing who are on leave from a degree program at another college may apply to Millersville as part-time transient students.

Students from Franklin & Marshall College and Lancaster Theological Seminary

Millersville University has reciprocal agreements with these two institutions. Franklin & Marshall College may, upon appropriate authorization, send students to Millersville for courses not offered at Franklin & Marshall, without a tuition charge from Millersville. Similarly authorized full-time graduate students from Lancaster Theological

Seminary may enroll in undergraduate and graduate-level courses at Millersville without a tuition charge by Millersville.

Millersville students may also take advantage of these agreements and enroll for courses at these institutions. See the Special Academic Opportunities section for more information.

High School Students (Dual Enrollment)

Qualified high school juniors and seniors may take credit-bearing courses at Millersville while pursuing their high school diplomas. Applicants must submit an official high school transcript. They must also complete a special high school student application form. This form, along with approved dual-enrollment courses, can be found on the admissions website. Participation in the program does not guarantee later admission as a degree-seeking student. Homeschooled students pursuing a Pennsylvania Homeschoolers Association diploma or other regionally recognized homeschooling certifying program are also encouraged to apply, submitting officially certified transcripts.

Veterans

Millersville University meets all criteria for approval of Veterans Education under the provisions of Title 38, United States Code, Section 1775 (a)(1). DANTES and USAFI courses are considered for transfer credit in accordance with the recommendations of the Commission of Accreditation for Service Experiences of the American Council on Education.

The Veterans Benefits and Transition Act of 2018 (applicable to students who receive benefits under the Chapter 31 Veteran Readiness & Employment and/or Chapter 33 Post 9/11 GI Bill®) states that students who are entitled to education assistance will not impose any penalty. A penalty includes the assessment of late fees and denial of access to classes, libraries or other institutional facilities. The University may not require individuals to borrow additional funds to cover a balance to the University that is caused by a delayed payment from the VA under Chapter 31 or Chapter 33.

The statute allows Millersville University to require Chapter 31 Veteran Readiness & Employment and Chapter 33 Post 9/11 GI Bill® students to take the following additional actions:

- Submit a Certificate of Eligibility (COE) for entitlement to educational assistance no later than the first day of a course of education.
- Submit a written request to use such entitlement (VA enrollment certification form).
- Provide additional information necessary to the proper certification of enrollment by the educational institution.

Under section 3679 of Title 38, Millersville University is authorized to require additional payment or impose a fee for the amount that is the difference between the amount of the student's financial obligation and the amount of the VA education benefit disbursement.

"GI Bill®" is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government website at <https://www.benefits.va.gov/gibill/> (<https://www.benefits.va.gov/gibill/>.)"

Veterans, reservists, VA Readiness & Employment participants and eligible dependents with questions about educational benefits should contact the university School Certifying Official in the Financial Aid Office at fa.mail@millersville.edu or 717-871-5478. The Veteran Resource

Center is available to provide support resources and can be reached at 717-871-4343.

Auditing Courses

An individual who is not concerned with earning credit may audit a course upon approval of the course's instructor. An auditing student attends classes and participates in class discussions but does not take examinations, write papers or fulfill other requirements generally associated with earning credit. The student's transcript does not record a grade but notes that the course was audited. Standard tuition and fees are charged. Ordinarily no more than one course may be audited per semester.

Students enrolled in a degree program may also request audit privileges. See the Special Academic Opportunities section of this catalog.

Continuing Education

Continuing education students experience the best of Millersville University one class at a time. Choose from hundreds of undergraduate and graduate courses that can be taken as not-for-credit. Enjoy vibrant discourse with your fellow classmates and the guidance of the University's renowned faculty. Many classes meet online or at night. Enrollment is limited to space available after the drop/add period for matriculated (degree-seeking) students. For more information on how to enroll for noncredit as a nondegree student, contact the CGSAL, Lyle Hall, 717-871-4723.

Advanced Standing

Advanced Placement Examinations (AP)

Credit is granted to students earning scores of 3 or higher on AP examinations. The number of credits awarded depends on the academic major, AP subject area and departmental recommendation. Contact your high school guidance office for information on taking an AP examination. Students must be admitted to undergraduate, degree-seeking status and be currently enrolled to be eligible for an AP credit award. A score report from the College Board must be sent to Millersville University. Visit www.millersville.edu/apcores (<http://www.millersville.edu/apcores/>) for more information regarding score reports.

College-Level Examination Program (CLEP)

CLEP is a program of the College Board that includes both general and subject examinations. Six credits are awarded for scores of 50 or above on each of the CLEP general examinations: College Composition (with or without essay); Humanities; College Mathematics; Natural Sciences; and Social Sciences and History.

Three to six credits are awarded to students who earn a score of 50 or above on the CLEP subject examinations. Contact the registrar's office at www.millersville.edu/registrar (<http://www.millersville.edu/registrar/>) regarding credit awards.

Challenging Courses by Examination

Students who feel they have already mastered the material in a Millersville course may "challenge the course by examination," taking a test on the course content instead of enrolling for the course itself. Students may challenge most courses in which they have not received a grade, and which have not been waived because of demonstrated competency or advanced placement. Because of content and structure, some courses may not be challenged by examination.

Contact the registrar's office, Lyle Hall, for instructions, fee information and approval forms. The examination is given at the convenience of the instructor. The grade earned is entered on the student's record and calculated into the GPA whether or not a passing grade is earned. Standard tuition and fees are charged.

In some instances, department chairpersons may approve the use of a CLEP subject examination to challenge a course by examination. See the preceding section on CLEP for more information.

International Baccalaureate (IB) Program

Millersville University recognizes the value of the rigorous IB Program and considers it seriously when evaluating the credentials of admission applicants. For students entering with the IB Diploma or Certificate, credit may be awarded for a score of five or higher on examinations in higher level (HL) IB courses. Such credit is generally awarded on a course-by-course basis as recommended by the appropriate Millersville University department. The University does not give credit for standard level (SL) examinations. Credit awarded for IB higher level examinations may be used to satisfy general education requirements, major or minor requirements, or electives in the same manner as Advanced Placement (AP). Students will not receive duplicate credit for IB examinations, AP examinations, CLEP examinations or any other college courses taken before or after enrolling at Millersville University. In the event of overlapping course content, credit will be given for only one course.

International Baccalaureate transcripts should be submitted to the Office of Admissions, Millersville University, P.O. Box 1002, Millersville, PA 17551-0302. Students can request transcripts through their high school IB coordinator within the first year after high school graduation. Thereafter, transcripts can be requested from the International Baccalaureate Program, North America, 475 Riverside Drive, 16th Floor, New York, NY 10115, (212) 696-4464. ibna@ibo.org.

Expenses and Financial Aid

As a state-owned university, Millersville University provides educational opportunities that surpass those available at many more costly institutions.

The table below and other information in this section present the most recent approved costs for the academic year. Tuition and fees are subject to change at any time.

Expense	Residents of Pennsylvania	Nonresidents of Pennsylvania
Tuition ¹	\$9,570	\$19,290
General Fee ¹	\$2,214	\$2,214
Technology Fee ¹	\$478	\$728
Room & Meals ²	\$13,750	\$13,750
Estimated Books & Supplies ³	\$1,000	\$1,000
Estimated Personal Expenses ³	\$2,600	\$2,600
Estimated Travel Costs ³	\$800	\$800

¹ Tuition and fee costs are based on 15 credits per semester for residents of Pennsylvania, and on 12-15 credits per semester for nonresidents of Pennsylvania.

² Your actual charges may vary based on your room assignment and meal plan.

³ Costs not billed directly by the University but that a student may incur.

Payment Of Tuition And Fees

Students enrolling for classes during the early registration period are not required to pay immediately. Electronic semester bills are forwarded four to six weeks before the beginning of each semester. Full payment is due, by the due date on the e-bill.

Student account balances by term are available within the Student Account Manager platform (SAM). Students enrolling after all initial billing dates have passed are expected to make payment immediately upon registration. Students are considered officially enrolled, able to earn credits, receive grades and graduate when all charges are paid in full and they have confirmed attendance. Students who register are responsible to drop any class they do not plan to attend. Failure to drop the class before the semester begins may result in charges and/or grades being posted to your records. Do not rely on the "drop for nonpayment" policy to remove classes.

Information about fees, payments and important billing dates can be found at www.millersville.edu/osa (<https://www.millersville.edu/osa/>) or at the Office of Student Accounts, Lyle Hall.

Payment Plan

Millersville University offers a variety of installment plans to meet the needs of students and families. These installment plans are only available in the Fall and Spring semesters.

Options are presented within the Student Account Manager (SAM) starting on the initial billing day. Plan options change throughout the billing cycle. There is a \$30 enrollment fee charged per term.

Auto-pay is required. A \$25 late fee will be assessed to any account with an unsuccessful installment.

More information regarding payment plans is available at www.millersville.edu/osa (<https://www.millersville.edu/osa/>) or at the Office of Student Accounts, Lyle Hall.

Tuition

Tuition charges are set in April by the Board of Governors of Pennsylvania's State System of Higher Education.

Tuition for Residents of Pennsylvania. In-state undergraduates pay \$319 per credit hour. All undergraduates pay \$319 per credit hour during winter and summer sessions.

Tuition for Nonresidents of Pennsylvania. Full-time undergraduates pay \$9,645¹ per semester for 12 to 18 credit hours plus \$805¹ per credit hour over 18. Part-time undergraduates enrolled for fewer than 12 credit hours pay \$805¹ per credit hour. All undergraduates pay \$805¹ per credit hour during winter and summer sessions.

¹ 2023-2024 rates. Rates will change. For up-to-date fee information, please refer to the Office of Student Accounts website at millersville.edu/osa (<https://www.millersville.edu/osa/>).

Tuition for International Students. International students are charged nonresident tuition and fees, or the costs associated with their program of enrollment. A \$100 International Student Fee is also assessed. Additional information regarding specific programs can be found at www.millersville.edu/internationalprograms (<https://www.millersville.edu/internationalprograms>).

www.millersville.edu/internationalprograms/) or at the Office of International Programs and Services, Lyle Hall.

Residency Status. In order to qualify for Pennsylvania resident tuition, students must meet State System of Higher Education criteria as summarized below:

1. Continuous residence in Pennsylvania for 12 months prior to registration.
2. U.S. citizenship, formal declaration of intent to become a citizen or admission to the United States on an immigrant visa. A nonimmigrant visa (tourist or student visa) is not proof of intent of residency.
3. Pennsylvania residency by parent(s) or guardian(s) of students who are minors. The age of majority in Pennsylvania for establishing an independent residence for tuition purposes is 22. A minor may, however, prove financial emancipation and independence through clear and convincing evidence.
4. A United States government employee or a member of the armed forces who was residing in Pennsylvania immediately prior to entering the government service and who has continuously maintained Pennsylvania as his or her legal residence is considered a Pennsylvania resident. Others in military service stationed in Pennsylvania are considered Pennsylvania residents.
5. A student receiving a scholarship or grant dependent on residence in a state other than Pennsylvania is not considered a Pennsylvania resident.

A student who changes his or her residence from Pennsylvania to another state must give prompt written notice to the University. The University may reclassify a student if it believes he or she is no longer a Pennsylvania resident. Students may challenge residency classifications by making written petitions to the Office of Student Accounts, Lyle Hall. To obtain the request form, go to the Student Accounts homepage at www.millersville.edu/osa (<https://www.millersville.edu/osa/>) and click on "Residency."

Refunds. Refunds will be made according to current University and State System of Higher Education policies. Students who reduce their credit-hour load after the end of the drop/add period so as to qualify for billing as part-time students shall not be eligible for a refund of the amount billed which exceeds the part-time rate. After the drop/add period, refunds shall be made only for full-semester withdrawal.

After the end of the drop/add period, there will be no partial refunds for full-time students who reduce their credit-hour load below full-time status, or for part-time students who reduce their credit load. After the drop/add period, refunds of tuition and the general fee will only be considered for students who officially withdraw from the University or, in the case of eligible undergraduates, take an official leave of absence.

The technology fee is nonrefundable after the drop/add period, and the refund of tuition and general fee for total withdrawal will be based on the following schedule for the fall and spring semesters.

Time period	Refund
Through "drop/add period"	100%
Second week	80%
Third week	60%
Fourth week	50%
Fifth week	40%
After fifth week	No refund

Note: Refunds for first-time students receiving financial aid under Title IV are made according to Public Law 102-135, Section 484B of the Higher Education Amendments. Financial Aid may be adjusted based on the withdrawal date.

First summer session, second summer session, third summer session and winter session are each considered to be separate terms and are treated as such for refund purposes. See the appropriate session course listing for the applicable refund schedule on the University website, www.millersville.edu/osa (<http://www.millersville.edu/osa/>). Rates and refund amounts are subject to change.

General Fee

The general fee is a mandatory fee used to support a variety of ongoing student services and activities, such as student senate, student organizations, health services and wellness programs, Student Memorial Center debt service, expansion, capital replacement and maintenance.

The fee is charged to all students (full-time and part-time, residential and commuting/off-campus) during all University sessions (including first summer session, second summer session, third summer session and winter session) and at all course locations (including University Center in Harrisburg and other off-campus sites).

The 2023-2024¹ fee was \$1,107 per semester for full-time undergraduate students and \$92.25 per credit hour for part-time undergraduate students.

¹ Rates subject to change for future academic years.

Technology Fee

The technology fee is a mandatory fee collected to support instructional technology.

The 2023-2024¹ fee is \$239 per semester for full-time Pennsylvania residents, and \$364 per semester for full-time nonresidents. Part-time Pennsylvania residents pay \$20 per credit; part-time nonresidents pay \$30 per credit.

¹ Rates subject to change for future academic years.

Refunds. The policies and schedule for tuition refunds also apply to the general fee. The technology fee is nonrefundable after the drop/add period.

Housing Fees

Millersville has on-campus suite-style residence halls offering a variety of housing options for fall and spring semesters. Please visit our website at www.millersville.edu/housing (<https://www.millersville.edu/housing/>) for room layouts and dimensions as well as video tours.

2023-2024 Room Rates Per Semester

East, South, and West Villages

Room	Semester Price
Single Suite	\$4555
Double Suite	\$4040
Full Suite (South only)	\$4555
Marauder Suite (Pods)	\$4525

Shenks Hall

Room	Semester Price
A Suite	\$4466
B Suite – Double	\$4108
B Suite – Single	\$4466
C Suite	\$3894

Housing Refund Policy. Housing charges will only be refunded for students who **completely withdraw** from the University and **properly check out** of the residence hall. The housing refund effective date will correspond with the date the student officially checks out of the residence hall. The student must coordinate the official checkout with their respective Residential Area Director (RAD)/Residential Area Coordinator. Refer to Section IX: Residence Hall in the online Living On Campus Guide for more information. The refund tables can be found by going to <https://www.millersville.edu/osa/refunds.php>.

Meal Plan - Description And Rates

Residential Students - The 2023-2024 housing and meal rate is estimated to be \$6,154 per semester with a Traditional Ville 19 Meal Plan of \$2,260 per semester depending on housing and dining choices. All first-year residential students are required to have a Traditional Ville 19 Meal Plan during each semester (fall semester and spring semester) for an academic year total of approximately \$4,520. Each residential student (first-year, transfer and upper-class) is automatically enrolled in the Traditional Ville 19 Meal Plan. Students with greater than 30 credit hours, including transfer and upper-class students, may change their Traditional Ville 19 Meal Plan to the Traditional Ville 14 (\$2,095), 180 Block (\$2,095), or 150 Block (\$1,935) no later than the Friday prior to the first day of classes each semester. A Traditional weekly Meal Plan is the number of meals per week. The Traditional Ville 19 and 14 Meal Plans begin Monday morning and end Sunday night. Block Meal Plans are the number of meals swipes per semester.

Commuter Students (non-Millersville University Resident Students) – All commuter students may sign up for any of the Meal Plans for the fall and spring semesters. Commuter students who are Meal Plan members during the fall semester are not automatically signed up for a spring semester Meal Plan. Commuter students may become a 90, 60, or 45 Block Meal Plan member at any time during the fall or spring semester.

Each of the Traditional and Block Meal Plans include a set amount of Flex Dollars for each semester. Students are responsible for managing their weekly and semester meals and Flex Dollars. The use of a Traditional or Block Meal at our Resident Dining Hall, the Upper Deck or any of our Retail Dining locations is considered a Meal Swipe. A Meal Swipe at the Upper Deck provides access to the “all-you-care-to-eat” dining room. The use of a Traditional or Block Meal Swipe at our on-campus retail locations is limited to a variety of meal items listed on a meal column chart. Any add-ons and/or upgrades may be paid using Flex Dollars. As a reference point for the use of Flex Dollars, there are approximately 15 academic weeks each semester. An average weekly Flex Dollar expenditure is simply calculated by dividing the amount of Flex Dollars affiliate with each respective Meal Plan by 15. Parents and students may add Flex Dollars at any time during the semester via our “Get Funds App”. Flex Dollars roll over from the Fall Semester to the Spring Semester. Commuter students, who choose not to sign up for an additional Meal Plan during the Spring Semester, may use any unused Flex Dollars from the fall semester provided they are enrolled for classes. Any unused Flex Dollars at the end of the Spring Semester are forfeited. The only exception is a student who is enrolled in Summer Session 1 classes, they

may use any remaining Flex Dollars. All remaining Flex Dollars after the fourth Friday of Summer Session 1 are then forfeited.

Summer Session II and III – Enrolled students living in Residence Halls are required to have Block Plan for each Summer Session. Student may choose between the 90 Block Plan with \$150 flex dollars, 60 Block Plan with \$150 flex dollars, or the 45 Block Plan with \$100 in flex dollars. Each resident student will automatically be enrolled in the 60 Block Plan. Students may change to the 90 Block no later than the Friday prior to the first day of classes for each of the Summer Sessions. Any Flex Dollars remaining after Summer Session II are rolled over to Summer Session III. Subsequently, any Flex Dollars left after Summer Session III are rolled over the Fall Semester provided the student is enrolled for classes during the fall semester.

Students living off campus are welcome and invited to become Meal Plan members. All students are welcome to dine at the Upper Deck in Gordinier Hall and all Retail Dining Locations on campus. Off-campus students may sign up for a Meal Plan at any time. Students who sign up prior to the beginning of a semester, who wish to cancel or change their Meal Plan choice must do so by the Friday prior to the first day of classes each semester. Students who sign up for a Meal Plan after the first day of classes may not change or cancel their choice.

2023-2024 University Dining Meal Plan Rates Summary

Resident Traditional Plans

Plan	Cost
Ville 19 - 19 Meal swipes per week w/ \$100 Flex ¹	\$2,260.00
Ville 14 - 14 Meal swipes per week w/ \$100 Flex ²	\$2,095.00

¹ 0-29 Credits

² 30 Credits or More

Resident Block Plans

Plan	Cost
180 Block - 180 Meal swipes per semester w/ \$150 Flex	\$2,095.00
150 Block - 150 Meal swipes per semester w/ \$250 Flex	\$1,935.00

Commuter Plans (academic year & summer options)

Plan	Cost
90 Block - 90 Meal swipes per semester w/ \$150 Flex	1,070.00
60 Block - 60 Meal swipes per semester w/ \$150 Flex	\$805.00
45 Block - 45 Meal swipes per semester w/ \$100 Flex	\$575.00

Refunds

A prorated schedule for housing and meal plan fees for students who withdraw from the University is as follows:

Date	Refund
Prior to student move-in day	100%
First week	90%
Second week	80%
Third week	70%

Fourth week	60%
Fifth week	50%
After fifth week	No refund

Dining Details

Check out our Dining web page for additional dining details and information at Millersville University. www.millersville.edu/dining (<https://www.millersville.edu/dining/>)

Students without a Meal Plan and Visitors

Students who live off campus, faculty, staff, and visitors may dine at the Gordinier Hall Resident Dining Hall and all dining retail locations on campus. Students, faculty, and staff with a Millersville University ID will be charged the following prices at the Upper Deck beginning Monday, August 21, 2023. Breakfast - \$8.90, Lunch - \$11.30 and Dinner - \$14.30. All visiting guests without a University ID will be charged the following prices at the Upper Deck beginning Monday, August 21, 2023. Breakfast - \$10.55, Lunch - \$10.55 and Dinner - \$16.45. Rates for special events are available through the Dining & Catering Services Office at 717-871-5275. Rates are subject to change.

Marauder Gold

Money deposited into your Marauder Gold account may be used to make purchases at on-campus Dining locations, University services, University Store, and local participating vendors that display the Marauder Gold logo. You may open a Marauder Gold account with a minimum deposit of \$50 with additional deposits of \$25 or more. Marauder Gold deposits may be made using the "GET" App using a credit/debit card (American Express, Discover, MasterCard or Visa). The Office of Student Accounts, Lyle Hall Room 246m accepts payments made via check, cash, or money order. Please notate Marauder Gold on all methods of payment.

Other Fees

Application Fee: Undergraduate Admissions

Students who apply and are admitted to the University through the undergraduate admissions office are not charged an application fee.

Application Fee: Graduate Admissions

Individuals who apply for admission through graduate and professional studies (i.e., Masters, Certification, Endorsement, Certificate, or Doctorate) will pay a graduate application processing fee of \$40 with the submission of each new application. Non-degree applicants do not pay an application fee. Fee waivers may be available upon request.

payment extention fee

Students who do not resolve their account by the due date are subject to a \$100 fee.

Late-Registration Fee

Students who register after the start of the semester/session are subject to a \$50 late registration fee, except when permission for late registration has been granted by the registrar.

Orientation Fee

Students admitted for the fall semester are required to pay an orientation fee and are expected to attend the orientation program. The orientation fee amount varies annually and is required regardless of attendance. For more information, please visit millersville.edu/orientation/ (<http://millersville.edu/orientation/>).

Special Handling Fee

Anyone who supplies the University with a check or electronic payment that is not honored by the bank on which it is drawn is charged \$35.

Replacement Fee

The fee for replacement of a Millersville student identification card is \$25.

Damage Fee

Students are responsible for damages, breakages, and loss or delayed return of University property.

Degree Fee

Each candidate for a degree must pay \$30 to cover the cost of the diploma. The Commonwealth of Pennsylvania requires a nonrefundable fee for credentials evaluations and processing teaching certification applications.

Health Services Supplies Fee

The cost of any expensive supplies used to treat a patient at Health Services will be charged to the patient.

Library Overdue and Items Fees

Please contact the library for information at 717-871-7110, or visit the Millersville website, www.millersville.edu (<http://www.millersville.edu>).

Deposits

Advance Matriculation Deposit

A nonrefundable \$150 deposit is required upon acceptance of the offer of admission. It is applied toward payment of tuition. It is transferable on a one-time basis to a revised admission date upon the approval of the director of admissions.

Advance Housing Deposit

Students admitted to University residence halls must pay a deposit of \$200 each year. It may be applied only toward payment of residence hall fees for spring. It is transferable on a one-time basis to a revised admission date upon the approval of the director of admissions.

Other Expenses

Most students incur additional expenses for books and supplies, personal needs, and traveling to and from home. These are not charged directly by the University; however, the University provides estimates for the purpose of assisting students in finding aid resources to meet the needs of their additional expenses.

The total cost of attendance for Pennsylvania residents living on campus in the residence halls is estimated at \$29,262, and \$39,232 for nonresidents for the 2023-2024 academic year.

The total cost of attendance for commuting students living at home with their parents/guardians is estimated at \$23,362, and \$33,332 for nonresidents for the 2023-2024 academic year.

The total cost of attendance for off-campus students who are renting temporary housing in the Millersville/Lancaster area is estimated at \$29,222 and \$39,192 for nonresidents for the 2023-2024 academic year. This amount assumes the student is sharing facilities and rental costs with at least one other person. The cost of attendance is comprised of direct costs (billed by the university) and indirect costs (possible

educational expenses you may incur). The cost of attendance is not the amount you will be charged by the Millersville University.

Federal Financial Aid can only be applied to courses that are required towards the completion of the student's degree. To learn more about the Course Program of Study Policy visit: <https://www.millersville.edu/finaid/maintaining-eligibility/course-program-of-study-cpos.php>

More information regarding estimated expenses can be found on the Financial Aid section of Millersville's website under Calculating Eligibility: <https://www.millersville.edu/finaid/billing> (<https://www.millersville.edu/finaid/billing/>)

Student Insurance

An accident and sickness insurance plan is available to Millersville University students through the University insurance carrier, Consolidated Health Plan. All questions regarding eligibility, insurance coverage, costs or premium refunds should be directed to the insurance carrier, 800-633-7867.

Financial Aid

Financial aid resources are available to eligible students attending Millersville; these resources can include scholarships, state grants, federal grants, employment programs, federal loans and private education loans. To be considered for state and federal aid resources, students must complete the Free Application for Federal Student Aid (FAFSA) each year. The FAFSA is available beginning October 1. To be considered for all types of aid, the recommended deadline to complete the FAFSA is March 15. To be considered for a state grant, the FAFSA must be filed prior to May 1.

More information regarding eligibility and how to complete the FAFSA can be found on the Financial Aid section of Millersville's website: <https://www.millersville.edu/finaid/applyingforaid/>

University Scholarships

A number of scholarships are offered at Millersville, including scholarships based on academic performance, athletic potential and need. Information on University scholarships can be found on the Financial Aid section of Millersville's website under Grants & Scholarships <https://www.millersville.edu/finaid/financial-aid-options/scholarships/>

Federal Grant Programs

Federal Pell Grants

Federal Pell Grants are federally funded awards based on the financial need of the family. To apply for a Federal Pell Grant, complete the Free Application for Federal Student Aid (FAFSA), available online at studentaid.gov/fafsa (<https://studentaid.gov/fafsa/>) after October 1. The student will receive a Student Aid Report (SAR) via email (if an email address is provided). Eligibility for the Federal Pell Grant will be determined by the Office of Financial Aid, and you will be notified of your award amount (if any) in your Financial Aid Offer Letter.

Federal Supplemental Educational Opportunity Grant (FSEOG)

This program is for undergraduate students of exceptional financial need. To be eligible, students must be eligible for a Federal Pell Grant and be enrolled at least half-time (6 credits). FSEOG grants at Millersville normally range from \$200 to \$800 per academic year.

State Grant Programs

The Pennsylvania Higher Education Assistance Agency (PHEAA) provides state grants (PA State Grants) to help Pennsylvania residents in need of financial assistance to attend approved institutions of higher education. To apply for a PA State Grant, complete the Free Application for Federal Student Aid (FAFSA) by May 1. The FAFSA is available online at studentaid.gov/fafsa (<https://studentaid.gov/h/apply-for-aid/fafsa/>) after October 1.

Grant award amounts depend on educational expenses, family size and resources. Students must be enrolled half-time (6 Credits) to be eligible. PA State Grants are subject to annual review and may change from year to year. Renewal depends on satisfactory academic standing, continued need for financial assistance and the availability of funds appropriated by the Pennsylvania General Assembly. Please visit www.millersville.edu/finaid (<https://www.millersville.edu/finaid/>) for more information regarding the PA State Grant Program, or go to www.pheaa.org (<http://www.pheaa.org>).

Student Employment Programs

Federal Work-Study Program (FWS)

This program provides funds to students who have completed a FAFSA application and who have financial need. Students may be eligible if they are enrolled at least half-time (6 credits). Federal Work-Study wages are earned as hours are completed and do not pay towards the student's tuition bill. For more information, visit <https://www.millersville.edu/finaid/financial-aid-options/work-study/>

Millersville University Student Employment Program

This program differs from federal work-study because students do not have to complete a FAFSA application or demonstrate financial need. Available jobs are posted online with the Office of Human Resources. Wages are earned as hours are completed and do not pay towards the student's tuition bill.

Loan Programs

Federal Direct Loans

This program enables students to borrow federal loans directly from the U.S. Department of Education. To be considered eligible, a student must complete the Free Application for Federal Student Aid (FAFSA) and be enrolled at least half-time (6 credits). Millersville University will confirm the student's borrowing eligibility for the period they are enrolled and originate a loan with the Department of Education.

The maximum loan for a dependent undergraduate student ranges from \$5,500 to \$7,500 per year and is based on the student's grade level (credits earned). Federal Direct Loans can be subsidized or unsubsidized. Subsidized loans are awarded on the basis of financial need, and the federal government pays the interest on the loan while the student is enrolled at least half-time (6 credits). Unsubsidized loans are not awarded on the basis of need. The student will be charged interest from the time the loan is disbursed until it is paid in full. Repayment generally begins six months after the student leaves school (graduates, withdraws, takes a leave of absence or ceases to be enrolled at least half-time). All Federal Loans including subsidized, unsubsidized, Parent PLUS, and Graduate PLUS loans are subject to change on October 1st of each year.

First-time students/borrowers must complete *Entrance Counseling* and a *Direct Loan Agreement/Master Promissory Note* (MPN) online at

studentaid.gov (<https://studentaid.gov/>). The student must have a FSA User ID and password to log into their account and complete these steps.

Federal Direct Parent PLUS Loans

Available to parents of dependent undergraduate students only. Additional information can be found on the Financial Aid section of Millersville's website: <https://www.millersville.edu/finaid/financial-aid-options/loans> (<https://www.millersville.edu/finaid/financial-aid-options/loans/>)

Federal Direct Graduate PLUS Loans

Available to degree-seeking graduate students only. Additional information can be found on the Financial Aid section of Millersville's website: <https://www.millersville.edu/finaid/financial-aid-options/loans> (<https://www.millersville.edu/finaid/financial-aid-options/loans/>)

Private/Alternative Loans

Applications are available through private lenders, and the loan is in the student's name (the borrower). This loan usually will require a credible co-signer. Additional information can be found on the Financial Aid section of Millersville's website: <https://www.millersville.edu/finaid/financial-aid-options/loans> (<https://www.millersville.edu/finaid/financial-aid-options/loans/>)

Advanced Refund Request

Enrolled students may apply for an advance of their expected refund to assist with unexpected expenses that may arise. A student may be eligible for a refund if they have more aid than their charges. They are limited to \$350 and must be repaid within 30 days; these loans cannot be used to pay University charges. Applications and additional information can be obtained in the Office of Financial Aid.

Academic Progress Policy

This policy became effective with the 2016-2017 academic year. The policy is cumulative and includes all students and all periods of enrollment, whether or not aid was received for that period.

This policy refers only to **Federal** financial aid. Information on PA State Grant satisfactory academic progress is included below as well. For additional information, please visit: <https://www.millersville.edu/finaid/maintaining-eligibility/sap.php>

Satisfactory Academic Progress (SAP) is defined as earning at least 67 percent of all attempted credits. The progress percentage is determined by dividing the total credits earned by the total number of credits attempted. Since the total attempted credits include withdrawals and "F" grades, future aid may be affected. Only credits earned from a course in which the student was actually enrolled are counted in calculation of SAP. Advanced Placement credits, CLEP credits and credits earned from challenge exams, proficiency exams or life experience are not used in calculating SAP.

Students who are ineligible to receive aid due to academic progress will receive a notification to their Millersville University email at the conclusion of the spring semester, after grades have been posted. Students will have the opportunity to appeal the decision based on extraordinary circumstances, or he/she may make up credits without financial aid until the percentage is met.

GPA Requirement

Undergraduate students must **also** maintain a minimum, cumulative GPA of 2.0 after two academic years (or four semesters).

PA State Grant Academic Progress

For PA State Grant purposes, full-time students must successfully complete 24 new credits each year or 12 credits each semester. Part-time students must successfully complete at least 6 new credits each semester. Summer is considered to be a semester. Only credits earned from a course in which the student was actually enrolled are counted. Remedial credits taken during a term when not receiving a state grant may not be counted toward progress.

Athletics

ATHLETICS

INTERCOLLEGIATE ATHLETICS

Intercollegiate athletics has a rich history as part of the fabric of Millersville University. The Department of Athletics sponsors 19 intercollegiate sports competing in the Pennsylvania State Athletic Conference and NCAA Division II. Marauders excel in both competition and in academics with Millersville's teams winning 53 PSAC Championships and two NCAA Championships. Nine Millersville athletes have also won individual NCAA Championships. The more than 450 student-athletes annually produce a GPA over 3.0 and in 2022-23, more than 200 Marauders were named PSAC Scholar-Athletes. A staff of 60+ coaches and administrators provide a championship experience, supporting student-athletes with mentoring, academic support, and career development. Student-athletes have access to the Morgan Academic Center in Lehigh Hall. The health and wellness of the student-athletes are supported by four full-time athletic trainers and a strength and conditioning coach. Millersville's student-athletes train in the Carpenter-Trout Strength Center.

For additional information, please visit www.millersvilleathletics.com (<http://www.millersvilleathletics.com>)

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Academic Policies

Grading Policies

Each instructor establishes his or her own grading policy based on classroom participation, homework, unannounced quizzes, etc., and states it clearly and in writing at the beginning of the course. Sufficient measures are built into each course structure to evaluate student achievement.

Final examinations normally do not count as more than one-third of any student's final grade. Instructors may excuse any student with superior achievement (a grade higher than A-) from taking a final exam.

Grades and Grade Point System

The grade point average (GPA) is a comprehensive evaluation of a student's academic standing. The grades and terms used to describe achievement are reported at the end of each semester as:

Grade	Description	Grade Point Value
A	Excellent	4.0
A-		3.7
B+		3.3
B	Good	3.0
B-		2.7
C+		2.3
C	Acceptable	2.0
C-		1.7
D+		1.3
D	Poor	1.0
D-		0.7
F	Fail	0.0
I	Incomplete	1
P	Pass	1
S	Satisfactory	1
U	Unsatisfactory	1
W	Withdrew	1
M	Military Withdrawal	1
AU	Audit	1
X	Proficiency in Progress	1
Z	No Adequate Evaluation for Grading	0.0

¹ Not considered in computing GPA.

University policy accepts D- as minimum earned credit. There are certain general education and department major competency requirements that are satisfied only by a higher minimum grade. If a student earns less than this higher minimum grade in such a course, the credits will count toward earned credits but might not count toward completion of general education and department major requirements.

The semester GPA is the number of grade points earned in Millersville courses in a semester, divided by the number of credits in that semester for which grades calculated in the GPA were earned. Grade points for each course are calculated by multiplying the grade point value by the number of credits for the course.

The cumulative GPA (CGPA) is the total number of grade points earned in Millersville courses divided by the number of Millersville GPA credits. Credits from audited courses, subsequently repeated courses, advanced standing programs such as AP and CLEP, and transfer credits are not included in the CGPA.

The Millersville grade point average (GPA) is rounded to two decimal places.

Grades and Policies

Schedule Adjustment: Drop/Add

For fall and spring terms, students may drop or add courses online from the early-registration period until 11:59 p.m. EST, the eighth calendar day of the term, excluding holidays.

During the summer and winter sessions and for courses which have start and/or end dates outside of the regular semester length, the registrar will determine equivalent dates for no grade, W grade and regular grade periods. Refer to the registrar's website for details.

Faculty signatures are not required to drop or add a course, unless faculty permission is specifically required. Courses that are dropped during the drop/add period will not be entered on the student's record.

It is the student's responsibility to make official changes to his/her schedule. There is no automatic drop policy for nonattendance.

Withdraw (W)

The notation made on a student's record about a withdrawn course depends on when the student withdraws. Students who "drop" or withdraw by the end of the drop/add period have all references to that course deleted from their records. Students will be permitted to withdraw from a course and receive a grade of W up until the end of the 10th week of the semester. The W grade does not carry any quality points and will not be calculated in the student's GPA. There will be no limit on the number of courses from which the student may withdraw. A student who withdraws from their last course is required to submit a form withdrawing them from the University or taking a leave of absence. See Leaving Millersville University for more information. After the 10th week of the semester and through the last day of classes, students who withdraw will receive an earned, non-W grade, which will be determined by the instructor, consistent with University policy.

The official date of withdrawal will be determined by the student's last date of attendance in any registered course. Deadlines for withdrawal are strictly enforced. It is the student's responsibility to obtain all required

signatures (both the course instructors and advisors) in time to meet the deadline.

Failure to withdraw from a course properly may result in additional tuition fees as well as a failing grade. Financial aid may also be affected.

See the sections on Credit Load Policies and Tuition for more information.

During summer and winter sessions, the registrar sets equivalent deadlines for withdrawing from a course without a grade or with a W grade.

To withdraw from a course, access the withdraw form in MAX, on the web in the Student Forms Center (<https://www.millersville.edu/forms/>), or contact the registrar's office, Lyle Hall.

Military Withdrawal (M)

A grade of M may be assigned when a student or spouse must withdraw due to military obligation (called to active duty) and is unable to complete their courses. M grades are not applicable to students who withdraw from the University to complete basic military training. M grades are not used in the computation of cumulative grade point average.

Incomplete Policy

An incomplete (I) grade is used to denote coursework that is unfinished due to circumstances beyond a student's control, such as personal illness, accident or death in the family. It is a privilege granted by the instructor because of circumstances, not a right to be expected by the student. A student may request that the course instructor assign an incomplete grade. The instructor may assign an incomplete (I) grade only if the student is passing the course and can complete the remaining requirements without attending additional classes. If class attendance is required to complete course requirements, the instructor must issue a final grade.

An incomplete grade issued to a student on academic probation will not prevent or delay academic action for dismissal. A student's cumulative grade point average will be calculated based on all completed coursework.

A student is encouraged to complete the required work as soon as possible. The deadline for making up an incomplete is at the end of the 10th week of the subsequent regular semester (fall or spring); however, an instructor may establish an earlier deadline. At the deadline, one of the following actions will occur:

- The instructor submits a final grade on the change-of-grade form.
- The instructor recommends an extension.
- The grade of "I" converts to an F.

A faculty member may petition the school dean for a retroactive administrative withdrawal (W) from a course in which an incomplete grade cannot be resolved due to extraordinary circumstances (e.g., disability or death of the student or faculty). If the petition is approved, the dean will notify the registrar to record an administrative withdrawal for the course.

Students will not be graduated with unresolved incomplete grades. Degree candidates are notified of the outstanding degree requirements. The degree is not conferred until all requirements have been met.

Pass/Fail Courses (P, F)

In order to stimulate and/or satisfy intellectual curiosity, students are encouraged to engage in challenging study on an elective basis. The

pass/fail option provides the opportunity for a student to enter a course that he/she might ordinarily avoid. Accordingly:

1. A student may enroll in no more than a total of two courses pass/fail.
2. The student needs to have passed 60 or more credits before electing a course pass/fail.
3. The student must have a minimum GPA of 2.80 or obtain permission of the instructor.
4. The pass/fail option is ordinarily restricted to courses numbered 300 or above. However, a 200-level course may be taken pass/ fail with the prior approval of the instructor.
5. Courses taken to satisfy degree requirements for the major, whether offered by the department of the major or offered by other departments as required-related courses, may not be taken pass/fail.
6. Departments may designate which of their course offerings beyond degree requirements their majors may not take pass/fail.
7. Professional education requirements may not be taken pass/fail.
8. Courses taken to satisfy requirements for the minor may not be taken pass/fail.
9. No course used to satisfy general education requirements may be taken pass/fail, but if students take the same courses for other than general education purposes, they may take them pass/fail.
10. Courses taken on a pass/fail basis will be counted toward the total credit-hour requirement for graduation, but those courses that are passed will not be included in the GPA computation on which academic honors and academic standing are based. Courses failed under the pass/fail option will be included when computing the GPA.
11. The minimum grade a student must earn in order to be awarded a "pass" grade is D-.
12. The option to take a course on a pass/fail basis may be exercised until the end of the add period. Contact the registrar's office, Lyle Hall, for the appropriate form. Having properly registered for a course on a pass/fail basis, a student still has the option to take a letter grade instead of a pass/fail grade, provided that the decision to change is filed with the registrar the week prior to finals week.
13. The pass/fail option is limited to students not on probation at the time of registration.

Satisfactory and Unsatisfactory (S, U)

These terms describe achievement in student teaching and other field experiences.

Audit (AU)

Auditing a course allows a student to attend classes and participate in discussions without the pressures of taking examinations, writing papers or fulfilling other requirements generally associated with earning credit. An audited course is reported on the student's record with the designation AU. It cannot be used to satisfy graduation requirements, nor is it considered in computing GPAs. Standard tuition and fees apply.

To register to audit a course, contact the registrar's office, Lyle Hall, for information and to obtain a permission form, and submit it by the end of the add period. The audit privilege may not be changed to credit status. Audit privileges are ordinarily limited to one course per semester.

Proficiency in Progress (X)

This grade reflects progress toward, but not achievement of, proficiency in precollege developmental courses.

Z Grade (Z)

A grade of Z is treated the same as a grade of F in calculating the student's GPA. The Z grade may not be removed and can only be excluded from the GPA by the student registering for and satisfactorily completing the course. The receipt of a Z grade shall not entitle a student to a refund of fees. This grading procedure is intended to apply only to those students for whom there is no adequate evaluation for the determination of a grade. In those cases in which the faculty member does not assign any grade, the registrar may assign the Z grade if the student has officially registered for the course.

Repeat Policy

A student, in consultation with the advisor, may repeat a course to improve their GPA, to meet minimum competency requirements or to satisfy graduation requirements. Students only need to repeat a failed course if it is specifically required for graduation. Students may repeat courses for which they have received a grade of C+, C, C-, D+, D, D-, F, W, Z or U.

Courses failed at Millersville must be repeated at Millersville in order to earn course credit and credit toward graduation. Students may not transfer credit for any course taken at another institution that is the equivalent of a course previously taken at Millersville; this policy applies whether the course was passed or failed at Millersville University. Students may repeat courses at Millersville for which they have received transferred credit, but they will forfeit the transfer credit.

Once the course is repeated, the new grade, credits and grade point value replace those earned previously in calculating the cumulative GPA. The earlier grade remains on the student's record even though it is no longer included in the computation of credits or cumulative GPA. In consultation with their advisors, students who find it necessary to repeat a course will be informed of, and expected to use, support services available to them through the Office of Learning Services.

An undergraduate student may not take an undergraduate course of record more than three times. A course of record is defined as a course in which a student receives a grade of A, B, C, D (including + and -), F, U, Z or W. The academic department offering a course may drop a student from a course if the student attempts to take a course more than three times. Undergraduate students will be limited to a maximum total of six repeats during their academic career.

Grade Changes

Students are responsible for reviewing grade reports as soon as they are available and contacting their instructor about any grade in question. Grade changes may be made only by the instructor issuing the grade, with the approval of the department chairperson and the school dean. Please refer to the Other Academic Policies section of the catalog for details.

Course Prerequisites

Courses may have a series of prerequisites (satisfactory completion of a prior course, minimum GPA or earned credits, placement test scores, etc.). Students who do not meet the stated prerequisite(s) may be removed from a course at the discretion of the professor. The professor will notify the registrar and student by the end of the drop period. The registration system will also remove a course due to the lack of proper prerequisites; review your schedule frequently to check for changes to your schedule.

Taking a Less Advanced Course

Students do not receive credit for a less advanced course if they have already demonstrated competency by passing a more advanced course. For example, MATH 100 Survey of Mathematical Ideas and MATH 101 College Algebra may not be taken for credit after MATH 161 Calculus 1, and FREN 201 Intermediate French 1 may not be taken for credit after FREN 202 Intermediate French 2. Students who wish to review less advanced material may do so on an audit basis.

Academic Standards, Probation, Dismissal and Appeal

Academic Standards

The registrar determines the academic standing of all students at the end of each semester and session. Academic standing is based on:

1. The student's cumulative grade point average (CGPA).
2. The total number of Millersville University credits for which the student has enrolled prior to the review. Credits for audited courses, transfer credits and advanced standing credits are not included.

Students with a CGPA of 2.00 or greater are in satisfactory academic standing. Students with less-than-satisfactory academic standing are subject to academic warning, probation or dismissal as follows:

Review credits	Cumulative GPA	Action
0.5–16.0	Below 2.00	Warning letter
16.5 or more	Below 2.00	Probation
32.5 or more	Below 2.00 while on probation	Dismissal ¹

¹ Students on probation at the end of a summer or winter session will be continued on probation for the following semester and cannot be dismissed. A student cannot be dismissed at the end of any fall or spring semester in which he/she has earned a 2.00 or greater semester GPA, even if the CGPA remains less than 2.00.

Academic Probation

Students on probation are limited to registering for no more than 13 credits per semester unless they have the written permission of their academic advisor, their department chairperson, the Chair of Academic Student Development, or an appropriate designee for each.

A student on probation will return to satisfactory academic standing at the end of the semester or session in which he/she earns a 2.00 or greater CGPA.

Academic Dismissal

A student dismissed for the first time is not permitted to register for or attend classes offered by the University for one semester. A student dismissed for the second time is not permitted to register for or attend classes offered by the University for two semesters. A student dismissed for the third or greater time is not permitted to register for or attend classes offered by the University for three years. A student's dismissal number accrues each time the student is dismissed, regardless of the outcome of any appeal.

Dismissed students are not permitted to register for or attend courses offered by the University during intervening winter or summer sessions. However, students who have registered for winter or summer 1 courses prior to being dismissed may attend said courses. If such winter or

summer 1 coursework results in a cumulative GPA of 2.00 or greater, the student returns to satisfactory academic standing.

A dismissed student who wishes to be admitted to the University after his/her dismissal period must apply for admission through the Admissions Office. Students who seek readmission to the University following the completion of their third or greater dismissal sanction must submit a written letter detailing the changes they have implemented in an effort to foster academic success upon readmission. The Director of Admissions seeks the recommendation of the Academic Standards Committee (ASC) on third or greater dismissal applicants.

Academic Dismissal Appeal

Students who have been dismissed will receive a Notice of Dismissal from the University. That notice will describe the procedures for appealing the dismissal. It is the student's responsibility to keep abreast of his/her academic standing and to be proactive in any appeal process.

Students who have been dismissed and believe extenuating circumstances affected their academic performance may submit a formal letter of appeal and supporting documentation to the ASC in care of the Registrar's Office. In order to be considered, letters of appeal must be received within eight business days of the date that appears on the Notice of Dismissal.

Students who are dismissed for the first time have the option to appeal in person before a subcommittee of the ASC, in addition to submitting the required written appeal. Students who are dismissed for the second or greater time may only appeal in writing. The academic decision of the ASC subcommittee is on behalf of the entire ASC, and is therefore final and not subject to further review. The Chairperson of the ASC or his/her designee will provide the appellant with a letter stating the decision of the ASC and terms (if any) for future action. Examples of such terms include a reduced credit load, the repeat of coursework and the active seeking of assistance from student-support services. Under no circumstances will the Chairperson or subcommittee of the ASC modify the duration of a dismissal period prescribed herein.

After the ASC's decision, if an appellant believes the appeal process was not administered as prescribed herein, the appellant may pursue an appeal of the process, but not the academic decision, in writing, to the Associate Provost for Academic Administration. Such an appeal must be made within ten business days from the date of the decision letter from the Chairperson of the ASC. The appellant is advised to provide as much written documentation as possible, describing why the process was not administered as prescribed herein, and any supporting materials. The decision of the Associate Provost for Academic Administration regarding the process appeal is final and not subject to further review.

Semester Credit-Load Policies

Full-Time/Part-Time Status

To be considered full-time, undergraduates must be registered for at least 12 credits by the end of the drop/add period. Audited courses are included in the computation of semester credit load.

Recommended Credit Loads

The normal semester load for undergraduates is 15 credits during the first year, and 15 or more credits in subsequent years. Students with GPAs below 2.00 are strongly advised to take fewer than 15 credits; students on academic probation are limited to 13 credits per semester.

Students who have completed fewer than 80 credits may not register for more than 17 credits. Additional courses may be added at the beginning of the semester during the drop/add period.

More than 18 credits will require additional payment at the current charge per credit hour.

Students may not register for more than 21 credits in one semester.

During the semester in which a student is enrolled in student teaching, one additional course may be taken, provided the course does not conflict with the student-teaching assignment.

Students should recognize that some programs require more than 120 credits. Completing these programs or a second major or minor may require carrying semester loads above 15 credits, attending summer school and/or taking more than four years to complete a degree.

Summer and Winter Sessions

The recommended course load during any summer session (I, II, III) or winter session is two courses. Students should consult their academic advisor before registering for more than two courses in any session.

Overloads

Normally, students may not carry more than 21 credits in any one semester. Students enrolled in student-teaching courses may enroll for one additional course if it does not conflict with the student-teaching assignment.

Leaving Millersville University

Students who wish to leave Millersville before graduating may take a temporary leave of absence or withdraw completely.

Leave of Absence

Students who wish to interrupt their studies at Millersville for up to two consecutive semesters may request a leave of absence. This allows them to register for courses upon their return without applying for readmission. To be eligible for a leave of absence, a student must be enrolled in degree status and have a minimum CGPA of 2.00.

To request a leave of absence, complete an official Leave of Absence form, available from the registrar's office (Lyle Hall) or on the Millersville website in the Student Forms Center. Contact the registrar's office for information on the effects of a leave of absence.

Students who take a leave of absence to study at another institution during the fall or spring semester should also complete an Authorization for Transfer of Credit form, available from the registrar's office or on the web in the Student Forms Center.

A leave of absence is cancelled, and the student considered withdrawn, if the student fails to return by the established ending time or is dismissed by the University.

Military Leave of Absence

Students who are called to active duty must contact the registrar's office for assistance with arranging a leave of absence and their subsequent return to the University. A copy of the student's military orders must be presented to the registrar. Students who expect to return to class within the current semester to complete their coursework, or who are called to duty after completing a significant part of the course requirements, should contact their faculty regarding missed work. Students who cannot complete the current semester will be granted a leave of absence for

military duty and will be allowed to return for the next semester without penalty.

Withdrawing from the University

Students who wish to withdraw from the University must complete an official Withdrawal form, available from the registrar's office or on the Millersville website in the Student Forms Center. This applies to all students, whether withdrawing during or between semesters, regardless of reason for withdrawal. Failure to complete this form will jeopardize a student's chances of future readmission.

Students who have officially withdrawn from the University and wish to return should contact the admissions office, Lombardo Welcome Center, for an application for readmission. See the Admissions section for more information.

Other Academic Policies

Review of Programmatic Standards

The University's programmatic and assessment standards are established by the respective college and monitored by the college dean. A student may discuss issues related to these standards with the school dean. The college dean(s) and the University's provost, however, maintain ultimate authority to determine whether a student has successfully satisfied the programmatic and assessment standards, including preliminary, qualifying and comprehensive examinations.

Faculty members are charged with the responsibility of evaluating a student's academic performance in accordance with the faculty member's professional and academic judgment. The deans of the University's colleges establish the programmatic standards for their respective colleges and will review any issues related to those standards. The following procedures must be followed by students challenging these academic determinations or those encountering a problem with an academic affairs process. Appeals dealing with Academic Dismissal from the University, violations of the Academic Honesty Policy or violations of the Student Code of Conduct are handled by separate processes.

Academic Appeals

Academic Determination

When a student disagrees with an academic determination by a faculty member, the student and the faculty member must meet, within 30 days of the release of the academic determination, to discuss the disputed issue and attempt, in good faith, to resolve the matter. The student has the responsibility to contact the faculty member so that the meeting can be arranged. If the student and faculty member are unable to meet within the specified time period, the student must contact the faculty member's department chair within 10 calendar days of the above time period to move to the next phase of the appeal.

If the student and the faculty member are unable to mutually resolve the dispute, the student must file a written appeal with the faculty member's department chair within 10 calendar days of the student/faculty member discussion. The student is advised to set forth in detail the basis for the appeal and provide written documentation in support of the appeal. The department chair will request a written statement from the faculty member and may meet with the faculty member as well. The department chair will review the appeal and any supporting documentation and then meet with the student. The department chair will notify the student and the faculty member of his or her decision within 10 calendar days of receipt of the appeal.

If the department chair's decision does not resolve the dispute, the student may submit a written appeal with the appropriate college dean within 10 calendar days from the date of the department chair's decision. The student should include any written documentation in support of the appeal. The college dean will request a written statement from the faculty member and may meet with the faculty member as well. The college dean will review the appeal and any supporting documentation and will meet with the student. The college dean will notify the student, the department chair and the faculty member of his or her decision within 10 calendar days of receipt of the appeal. The decision of the college dean is final and not subject to further review.

Academic Affairs Process

When a student encounters a problem with an academic process at the University (e.g., transfer of credit from another institution, missing or incomplete information in a student record, etc.), the student should attempt to resolve the problem by contacting the staff member, or appropriate administrative office, within the division of Academic Affairs within 30 days of identifying the error. The student and the staff member must discuss the disputed issue and attempt, in good faith, to resolve the matter.

If the student and the staff member are unable to mutually resolve the dispute, the student must file a written appeal with the staff member's supervisor within 10 calendar days of the student/staff member discussion. The student is advised to set forth in detail the basis for the appeal and provide written documentation in support of the appeal. The supervisor will request a written statement from the staff member and may meet with the staff member as well. The supervisor will review the appeal and any supporting documentation and then meet with the student. The supervisor will notify the student and the staff member of his or her decision within 10 calendar days of receipt of the appeal.

If the supervisor's decision does not resolve the dispute, the student may submit a written appeal to the University Provost within 10 calendar days from the date of the supervisor's decision. The student should include any written documentation in support of the appeal. The Provost will request a written statement from the staff member and may meet with the staff member as well. The Provost will review the appeal and any supporting documentation and will meet with the student. The Provost will notify the student, the supervisor and the staff member of his or her decision within 10 calendar days of receipt of the appeal. The decision of the Provost is final and not subject to further review.

Class Standing

Class standing is based on total credits earned, including those transferred from other colleges and earned through advanced standing programs, such as CLEP, as follows:

Credits Earned	Class Standing
0–29.5	First Year
30–59.5	Sophomore
60–89.5	Junior
90 or more	Senior

Class Attendance Policy

The University supports departmental and faculty class attendance policies that are reflective of and consistent with University-approved guidelines. Faculty will include their class attendance policy in their syllabi given to all students in their classes at the start of the semester.

University-Approved Guidelines:

1. Students are expected to attend all classes. It is the student's responsibility to complete all course requirements even if a class is missed. If a student misses class for an officially excused reason, then he/she is entitled to make up the missed work, but only at the convenience of the faculty member. Responsibility for materials presented in, assignments made for, and tests/quizzes given in regularly scheduled classes lies solely with the student.
2. The University policy is that faculty will excuse absences for the following reasons:
 - a. personal illness
 - b. death or critical illness in the family
 - c. participation in a University-sponsored activity
 - d. jury duty
 - e. military duties
 - f. religious holidays
3. Faculty judge the validity of student absences from class within the University's approved guidelines and may require documentation for excused absences. Faculty will evaluate any reason, other than those listed above, for a student missing class and determine whether the absence is justified. In these circumstances, a student may make up missed work at the discretion of the instructor.
4. In the case of foreseeable absences, students are encouraged to notify the faculty member in advance. A student who will miss class due to participation in an official University activity must notify the instructor well in advance of the activity to assure that the absence is excused.

Course Number System

Millersville University uses the following course-numbering system:

Course Numbers	Description
000-099	Precollege developmental courses.
100-199	Courses primarily designed for first year students.
200-299	Courses primarily designed for sophomores.
300-399	Courses primarily designed for juniors and seniors.
400-499	Courses primarily designed for seniors.
500-599	First-level graduate courses (these courses may be taken by advanced undergraduates).
600-	Graduate-level courses.

The following course numbers are reserved:

Course Numbers	Description
300, 400, 500	Cooperative Education experiences.
179, 279, 379, 479, 579, 679	Experimental courses.
489	Honors courses.
498	Independent study.
499	Departmental honors/thesis/ University Honors College thesis.

Dean's List

A student is eligible for the dean's list after a given semester if he or she has:

1. Earned a semester GPA of 3.50 or higher, and
2. Attempted at least 12 credits of undergraduate coursework in that semester, excluding those courses not used to compute the GPA.

Graduation Honors for a Baccalaureate Degree

Students who have earned consistently superior grades in their coursework at Millersville University are recognized for their achievements at graduation with the designation of graduation honors. The student's diploma and University record carry the appropriate honors designation:

- Cum laude for a cumulative GPA between 3.50 and 3.74.
- Magna cum laude for a cumulative GPA between 3.75 and 3.94.
- Summa cum laude for a cumulative GPA between 3.95 and 4.00.

Eligibility for graduation with honors is determined based on the Millersville grade point average. Neither transfer work nor in-progress courses are included in the honors GPA. For students who have been awarded academic amnesty, the preamnesty work is not included in calculating the honors GPA.

Changes in the eligibility for, or the level of, honors following the posting of grades for the final semester at Millersville will be reflected on the student's diploma and Millersville transcript.

To qualify for graduation honors, students must:

1. Earn a GPA of 3.50 or higher in work done at Millersville, and
2. Complete at least 60 credits of Millersville coursework.

Graduation Honors for Associate Degree Candidates. To qualify for the designation "with honors" on their diploma and University record, associate-degree candidates must:

1. Earn a GPA of 3.50 or higher in work done at Millersville, and
2. Complete at least 30 credits with grades A through D- of Millersville coursework.

Academic Requirements

The Baccalaureate Curriculum

Millersville University's baccalaureate-degree programs have four common curricular elements:

1. Proficiency requirements in English composition and mathematics.
2. The general education program, which constitutes about half of the curriculum (48 of the 120 minimum credits required for graduation).
3. The major program, which usually constitutes most of the other half of the curriculum.
4. Electives courses, if needed, to meet the minimum of 120 credits required for graduation. (A few programs require more than 120 credits for graduation.) Students may combine elective and general education courses to complete a minor.

Within each of these components, students have many choices in developing programs of study. They have a challenging and responsible role in planning the substance of their program.

Students are reminded that a full-time semester course load consists of 12 credit hours. However, it is necessary to average at least 15 credit hours each semester in order to graduate in four years (eight semesters).

Final responsibility for each student's program rests with the student. The role of the advisor is just that—to advise. Students are expected to familiarize themselves thoroughly with program requirements for their major described in this catalog, the Curriculum Record Form and the computerized degree audit. This computerized audit report is available to help students monitor progress toward completion of their major, minor and general education requirements.

Proficiency Requirements Chemistry

1. All undergraduate students who want to pursue CHEM 111 Introductory Chemistry 1 or above must demonstrate minimum levels of proficiency in chemistry.
 - a. All entering biology, chemistry, earth sciences and physics undergraduate students are required to take part in the chemistry placement process. Students pursuing majors in other disciplines may also need to participate; please consult your academic advisor.
 - b. The chemistry department determines the test(s) and the criteria for course placement.
2. Students placed in the preliminary chemistry course (CHEM 110 Fundamentals of Chemistry) are required to enroll in that course prior to taking CHEM 111 Introductory Chemistry 1. Such students must demonstrate proficiency by satisfactorily completing the course with a grade of C- or above prior to taking CHEM 111 Introductory Chemistry 1.
3. Students who must take CHEM 110 Fundamentals of Chemistry earn course credits, and the grade is counted in the cumulative grade point average, but these course credits may only be counted as elective credits needed to fulfill the 120-credit minimum required for graduation. These credits may not be counted within the major requirements set forth for degrees in chemistry or other disciplines.

Mathematics

1. All undergraduate students must demonstrate minimum levels of proficiency in mathematics.
 - a. All entering undergraduate students are required to take part in the mathematics placement process.
 - b. The mathematics department determines the test(s) and the criteria for course placement.
2. Students placed in a developmental mathematics course are required to enroll in that course. Such students must demonstrate proficiency by satisfactorily completing the course with a grade of C- or above prior to taking any mathematics course at the 100 level or higher.
3. Students who must take developmental mathematics earn course credits, and the grade is counted in the cumulative grade point average, but developmental course credit cannot be counted towards fulfillment of the general education or graduation requirements for the baccalaureate or associate degree.

The Major Program

After general education, the second component of a high-quality university education is an in-depth understanding of an academic discipline. Millersville currently offers 54 major fields of study within its bachelor's-degree programs. Many majors offer options for fulfilling

requirements that provide even greater choice in selecting a field of study. Students enrolled in programs that require more than 120 credits may require additional time to complete their studies.

A list of Millersville's major programs and options and the specific course requirements for each is given in the Academic Programs section. Curriculum Record Forms have also been developed for each major and option to summarize the requirements and provide an informal record of student progress. They are available from department offices, through the Office of Academic Advisement or through Millersville's website. In addition, degree audit reports summarizing the status of a student's degree requirements are available on the University website through our Millersville Access System (MAX).

Declaring or Changing a Major

To declare or change a major or an option within a major, contact the registrar's office, Lyle Hall, for an appropriate form, or online at the Millersville University website, by clicking in the Student Forms Center link. Some departments have specific requirements for admission to their major programs. Students must meet the major program requirements in effect at the time they declare or change their major. Students in undecided major status, with at least 45 credits passed, should refer to the Undecided Major Status section for specific academic requirements.

Department Evaluation of Majors

Students are subject to the approval of their major department for continuation in their major program. Departments may establish additional requirements for continuation in the major, review student credentials at the end of any semester and deny continuation in the major to any student they feel is not making satisfactory progress. Students who have been denied continuation in the major may appeal to the school dean and then to the Academic Standards Committee for reconsideration.

Second Majors

In some programs, through careful selection of elective courses, it is possible to complete the requirements for a second major. Upon certification by each major department that requirements have been satisfied, both majors are recorded on the student's records.

Minors

Students who wish to become proficient in a second discipline may complete the requirements for a minor. Each minor requires a minimum of 18 credits. A GPA of at least 2.0 must be earned in Millersville courses required for the minor. Half of the minor must be completed at Millersville, only one course may count toward both a major and a minor, and no student may minor in his or her major. A list of minor programs and specific course requirements for each are given in the Academic Programs section.

To declare or change a minor, obtain an appropriate form from the registrar's office or through the University website, by clicking on the Student Forms Center link.

The Associate Degree Curriculum

Millersville's associate-degree programs are career-oriented for students with specific occupational objectives. They consist of 60 to 65 credits of study. The programs normally have three components: communication skills; general knowledge of the natural sciences, social sciences and humanities; and an area of concentration. Approximately half the coursework is in communication skills and general education; the

other half is in the area of concentration. For more information, see the Academic Programs section.

Other Curricular Policies Additional Degree Requirements

To earn an undergraduate degree at Millersville University, a student must meet the following requirements:

1. All curricular and proficiency requirements as described above must be met.
2. A minimum of 120 credits must be completed for a bachelor's degree.
3. A GPA of at least 2.0 must be earned in Millersville courses.
4. A GPA of 3.0 must be earned in Millersville courses to meet entrance and exit requirements for a Bachelor of Science in Education (B.S.Ed.) degree.
5. A GPA of at least 2.0 must be earned in Millersville courses required for the major (area of concentration for associate degrees).
6. A GPA of at least 2.0 must be earned in Millersville courses required for the minor.
7. At least 30 credits (in addition to student teaching) of the last 60 credits must be completed at Millersville. Participation in approved Millersville University exchanges or attendance at programs consistent with Millersville University academic agreements will satisfy this requirement.
8. At least half of the major requirements must be completed at Millersville.
9. At least half of the minor requirements must be completed at Millersville.
10. Students who graduate with a B.S.Ed. degree or complete an approved program of post-baccalaureate studies for teaching certification must be admitted to Advanced Professional Studies. They must also meet the Pennsylvania state requirements and other Pennsylvania certification requirements, such as passing the required Praxis exams, to qualify for Pennsylvania teacher certification.
11. An Application for Degree form should be submitted before the end of the third week of the term in which the student expects to graduate. The University confers degrees six times annually: at the conclusion of the fall semester, winter session, spring semester, first summer session, second summer session and third summer session. Application forms are available from the registrar's office, Lyle Hall, or www.millersville.edu/commencement (<http://www.millersville.edu/commencement/>).

Admission to Advanced Professional Studies and Certification (Education Majors)

All students enrolled in teacher preparation programs must be admitted to Advanced Professional Studies and meet Pennsylvania state requirements and University requirements prior to being enrolled in their initial Advanced Professional Studies course. Students must meet additional Pennsylvania state requirements in order to be certified. A listing of Advanced Professional Studies courses and requirements is available in the Office of Field Services and on the Certification Office website.

Earning More Than One Degree

Students who wish to complete the course requirements for two different degrees (e.g., B.A. and B.S.Ed.) simultaneously must complete at least 30 credits beyond the minimum of 120 credits needed for the first bachelor's degree earned. Students who complete fewer than 30 credits beyond

the first degree but complete requirements in more than one major will choose the degree to be awarded. All majors completed will be recognized in academic records, including transcripts.

A student may earn a second associate or bachelor's degree at a later time by meeting the following requirements:

1. A minimum of 30 additional credits must be completed at Millersville at the undergraduate level following the award of the first degree. These credits must be in the major and required related fields.
2. All requirements for the major of the second degree must be satisfied.
3. Coursework completed as part of the first degree program may be used to satisfy the related coursework requirement in the second degree.
4. Coursework completed as part of the first degree program may be used to satisfy up to half of the second degree's major. If a course required in the second degree's major was completed as part of the first degree, it may not be repeated.
5. Teacher certification credits may not be counted toward a second degree.
6. When there is overlap in the majors of the first and second degrees, the 50-percent limitation in requirement 4 above and the limited course offerings in some departments may preclude the pursuit of a second degree.

General Education

The General Education Program

Consistent with Millersville University's liberal arts-based education, the purpose of general education is to provide breadth of knowledge as a balance and complement to the depth provided by the major. This is necessary for the holistic development of Millersville graduates as responsible citizens in a diverse and technologically complex global community.

General Education Objectives. Students, working with advisors and taking into consideration prior knowledge and experience, purposefully select courses in the general education curriculum that meld with required courses, cocurricular and extracurricular activities, and courses in the major to achieve the following objectives:

Foundations for Lifelong Learning

Students will think, speak and write clearly. This is evidenced by:

1. the clear presentation of ideas in formal spoken, written and media forms.
2. the use of effective communication for ongoing dialogue.
3. the ability to find appropriate sources of information, evaluate that information and integrate that information into a final product.
4. the use of statistical methods and other techniques of mathematics to analyze and solve problems.

Critical Thinking Across the Liberal Arts

Students will demonstrate foundational knowledge of the important ideas and methods of different ways of knowing as follows:

1. Courses in the arts and humanities challenge students to examine, analyze and critically evaluate artifacts of the human intellect and imagination to illuminate the complexity of the human experience. Through exposure to multiple voices, insights, objects and other creative works, students explore and interpret questions of meaning,

fact and value. Ultimately, this engagement expands knowledge, deepens empathy and encourages collaboration between diverse individuals and communities.

2. Courses in the sciences and mathematics develop students' understanding and knowledge of scientific and mathematical reasoning and of strategies for logical problem solving. Students are challenged to recognize that scientific explanations offer falsifiable predictions, that claims must be supported by evidence and logical reasoning, and that the nature of scientific discovery and knowledge is fluid. Courses emphasize that the scientific meaning of fact, theory and law are not a hierarchy, and give students an appreciation of essential creative aspects of scientific process and discovery.
3. Courses in the social sciences focus on the intricate relationship between human behavior and social institutions. Through qualitative and/or quantitative methods of inquiry, students discover and ascertain how human beings behave and are expected to behave, within certain contexts. This interaction allows students to comprehend and articulate the relationship between behavior and context across people, cultures, time and place.

Connections and Exploration

Students will connect important ideas and methods of inquiry from different disciplines as a means of becoming holistic and responsible citizens in a diverse and technologically complex global community. Students will:

1. demonstrate civic and social responsibility.
2. grow in their engagement with peoples of diverse histories and communities, both inside and outside the United States.
3. build the foundation for a lifelong process of understanding, developing and monitoring healthy lifestyle behaviors in all dimensions of wellness, including physical, social, emotional, intellectual, spiritual and environmental wellness.
4. gain personal enrichment by developing new interests that can be enjoyed throughout a lifetime.

To meet these objectives, the general education program is organized into a structure with three components: Foundations for Lifelong Learning, Critical Thinking Across the Liberal Arts, and Connections and Exploration.

General Education Structure

(minimum 48 credits)

Foundations for Lifelong Learning Component

ENGL 110 English Composition (0-3 credits)

This college-level competency requirement is in addition to the precollege proficiency requirement described earlier. Competence in English composition must be demonstrated in one of the following ways before the junior year:

1. Achieving a combined score of 1100 in the verbal portion of the SAT and the SAT II English Writing Test. This is recorded as a waived requirement and does not cover credit hours.
2. Achieving a score of 3 or higher in the Advanced Placement (AP) test in English Composition.
3. Achieving a satisfactory score in the CLEP subject examination in English Composition.

4. Passing the English Composition Competency Examination administered by the English department at the beginning of each fall and spring semester.
5. Earning a grade of C- or higher in ENGL 110 English Composition.

COMM 100 Fundamentals of Speech (3 credits)

College-level competency in speech must be demonstrated in one of the following ways, preferably before the junior year:

1. Earning a grade of C- or higher in a competency examination administered by the Communication & Theatre department. To take this examination, register with the Communication & Theatre department by the end of the drop/add period.
2. Earning a grade of C- or higher in COMM 100 Fundamentals of Speech.

Approved MATH course (3-4 credits)

To develop mathematical reasoning ability, at least one approved general education math course must be successfully completed.

Advanced Writing (3 credits)

A course to further enhance writing skills. Students who successfully complete their English composition requirement will take one of the approved Advanced Writing courses during their junior or senior years. Some departmental honors theses (499) are approved to meet this requirement. Some majors require a specific Advanced Writing course. Students should consult the appropriate curriculum sheet and their academic advisors before choosing a particular Advanced Writing course.

Critical Thinking Across the Liberal Arts Component (9 courses—minimum 27 credits)

Three courses (minimum 9 credits) each in Humanities and Fine Arts (G1), Science and Mathematics (G2) and Social Sciences (G3).

In Science and Mathematics, two of the three courses must come from biology, chemistry, earth sciences and/or physics, including one which has a laboratory (L) component.

No more than two courses within each Liberal Arts area may be from a single department. Additionally, at least three courses taken throughout the three Liberal Arts areas must be at the 200 level or above.

Up to six courses required for the major from departments outside the major may be credited toward the Liberal Arts Component, but courses taught by the student's major department may not be credited here.

Connections and Exploration Component

A total of nine credits from the following areas are required to complete the Connections and Exploration Component.

Approved Wellness Course (3 credits)

The Wellness requirement is designed to assist students in making positive lifestyle changes that reduce their health risks, modify their consumer behavior and enhance their personal well-being and productivity.

Perspectives Course (3 credits)

A major function of these courses is to apply analytical and critical-thinking abilities in resolving major social, cultural, scientific/technological and/or aesthetic problems. They are interdisciplinary and/or multicultural in content and require a high level of educational maturity, knowledge and thinking. Perspectives courses encourage undergraduate students to make independent and responsible value judgments and decisions.

Perspectives courses integrate the knowledge acquired throughout the baccalaureate experience. For example, perspectives courses nurture and extend the basic communications skills developed in the Foundations for Lifelong Learning Component of general education. Moreover, perspectives courses demonstrate how different areas of knowledge gained in the Critical Thinking Across the Liberal Arts Component of general education are complementary.

The following stipulations apply to perspectives courses:

1. Prior to enrolling in a perspectives course, each student must have successfully completed English composition, fundamentals of speech and earned at least 60 credits (junior standing).
2. Students must satisfactorily complete one 3-credit perspectives course from a list of approved courses, which may be either in the major department or outside the major department.
3. No perspectives course may be counted within the Critical Thinking Across the Liberal Arts Component of general education.
4. Students who complete an academic fall or spring semester abroad as part of a baccalaureate degree will be considered to have fulfilled the perspectives requirement. International students studying at Millersville will also be considered to have fulfilled the perspectives requirement. This waiver does not cover credit hours. A student employing this waiver will be required to satisfy three credit hours of general education courses in lieu of the waived three-credit perspectives course. This is in addition to any other Open Elective requirements of the student.

First Year Inquiry Seminar (0 or 3 credits)

Incoming students are encouraged to take a First Year Inquiry (FYI) seminar, which will count as part of a Connections and Exploration Component. The FYI seminar is a component of general education specifically designed for first-semester, first year students and offered in a seminar format, typically linked to a foundations course (either ENGL 110 English Composition or COMM 100 Fundamentals of Speech) as part of a learning community.

A major function of these FYI seminars is to introduce a process of critical inquiry applied to important social, cultural, scientific, technological and/or aesthetic problems. Each FYI seminar will introduce multiple perspectives related to the understanding and resolution of these problems. A second function of these FYI seminars is to support students' transition into the college experience academically, socially and personally. For those students who do not complete a FYI course, an additional open elective would be completed to satisfy the overall 12 credits required for the Connections and Exploration Component.

Additional Requirements

Cultural Diversity and Community

Each student must satisfactorily complete one 3-credit cultural diversity and community course from a list of approved courses. This course may also count toward any additional requirements (major, minor or general education) of the baccalaureate degree. Cultural Diversity and Community is a requirement of the Connections and Exploration Component of general education. This requirement aligns general education with the University's mission to foster in students an appreciation for cultural diversity. Here, "cultural diversity" refers to the differences among people in terms of beliefs, customs, values, politics and experiences. In essence, culture is a worldview; it is both learned and evolved. The following factors are seen as underlying these differences: age, economics, education, gender, geography, language, nationality, occupation, physical ability, race and ethnicity, religious affiliation and/or sexual orientation, among others. A Cultural Diversity and Community course is more than a mere survey or exposure of the students to different cultures; rather, it teaches students to think critically about the basis for intercultural differences.

Writing

These courses ensure that undergraduate students have the opportunity to develop competence and confidence in their writing skills. The English 110 competency must be satisfied prior to enrollment in "W" courses. Each student must satisfactorily complete three 3-credit courses from a list of approved courses. These courses may also count toward any additional requirements (major, minor or general education) of the baccalaureate degree.

Courses Approved to Satisfy General Education Requirements

Lists of courses that may be credited toward each of the general education requirements are available from the academic advisement office, the academic advisement web page and the web class schedule.

University College

University College (<https://www.millersville.edu/universitycollege/>) is comprised of offices and departments whose missions are committed to inclusive student success, engagement, and achievement, agency in student learning, and ongoing professional and personal development for sustained academic excellence.

VISION STATEMENT

The University College is committed to inclusive student success, engagement, and achievement, agency in student learning, and ongoing professional and personal development for sustained academic excellence.

MISSION

University College embraces MU's EPPIIC values in support of student academic, personal, and professional journeys to program completion and graduation by:

1. Advocating and supporting holistic needs to foster a sense of belonging, connectedness, awareness of opportunity, and equity in opportunity within the college and beyond. [COMPASSION]*
2. Empowering self-efficacy and agency to advance student outcomes. [INTEGRITY]

3. Offering high impact experiences and access to high quality resources to facilitate critical thinking and the discovery of knowledge. [EXPLORATION]
4. Providing individualized academic planning. [PROFESSIONALISM]
5. Delivering best practice guidance in career advising, career planning, and career-building experiences. [PROFESSIONALISM]
6. Fostering a safe, inclusive, and culturally responsive environment where all individual views, backgrounds, abilities, and identities are respected and valued. [INCLUSION]
7. Promoting participatory citizenship, leadership, mentorship, community-engaged scholarship, and service. [PUBLIC MISSION]

*Mapping to EPPIIC values (<https://www.millersville.edu/about/epiic-values/>)

Offices and resources of the University College are centrally located in the McNairy Library with additional college departments located in Lyle Hall and the houses along George Street.

Our entire team is here to champion your achievement, foster opportunities, and promote work/life balance for sustained success. Connect with our resources early and often!

- Academic Advisement and Student Development (p. 41)
- Center for Civic Responsibility and Leadership (p. 41)
- Center for Public Scholarship and Social Change (p. 41)
- Francine G. McNairy Library and Learning Forum (p. 40)
- Integrated Studies (p. 41)
- Multi-Disciplinary Studies (MDST) (p. 41)
- Office of Learning Services (p. 47)
- Starfish (p. 47)
- Success Coaching (p. 48)
- The Career Center (p. 41)
- University Honors College (p. 48)
- University Writing Center (p. 49)
- Multidisciplinary Studies, B.A. (p. 42)
- Multidisciplinary Studies, B.A., Applied Disability Studies Option (p. 42)
- Multidisciplinary Studies, B.A., Educational Studies Option (p. 43)
- Multidisciplinary Studies, B.A., Latinx and Latin-American Studies Option (p. 44)
- Multidisciplinary Studies, B.A., Pre-Occupational Therapy Option (p. 45)
- Multidisciplinary Studies, B.A., Science Writing Option (p. 46)
- Multidisciplinary Studies, B.S. (p. 46)
- Multidisciplinary Studies, B.S., Business Analytics Option (p. 46)
- Multidisciplinary Studies, B.S., Data Science Option (p. 47)
- The Exploratory Program (p. 41)

Francine G. McNairy Library and Learning Forum

Our librarians and staff are here to help. As a Millersville student, you have 24/7 remote access to Millersville's library resources.

Academic Advisement and Student Development

Millersville University's academic advisors are committed to helping you assess your interests and academic abilities using the latest technologies available. We will help you find a program that interests you and guide you along the most efficient path to the completion of that degree.

- The Exploratory Program (p. 41)

The Exploratory Program

The Exploratory Program, housed in the Department of Academic Advisement & Student Development, is intended for students who are unsure which major they want to pursue or may have narrowed down their options to a few possibilities but have not yet decided on a major.

Our mission here at Millersville is to encourage you to graduate on time while giving you the opportunity to explore a variety of interests to match your passion and skills with a major. We have the resources to help you do just that; they keep you on track and keep you motivated while satisfying your curiosity. Even though you may start as a first-year student unsure of what direction you may want to go, you will still be working toward your degree requirements while exploring your options.

The program gives you flexibility to change direction if necessary. Entering college in the Exploratory Program doesn't mean you'll be here longer; it just means your path to graduation may be a little different, but just as fulfilling!

The Career Center

The Career Center provides student-centered career programs, experiences and learning opportunities to assist you in achieving your personal and professional goals.

Center for Civic Responsibility and Leadership

The Center for Civic Responsibility & Leadership provides student-centered educational and developmental projects and activities to equip students to become participatory and active leaders in civic affairs.

Center for Public Scholarship and Social Change

The Center for Public Scholarship & Social Change brings together teams of faculty, students, and members of the community to engage collaboratively in research for public purposes. Aiming to leverage the ability for shared research on public issues, the Center for Public Scholarship lends assistance and expertise in identifying research issues, developing research designs, collecting data, writing up results, disseminating results, and working with policymakers and practitioners to resolve issues affecting local, regional, and global communities.

Goals for the Center include the following:

- Organize and direct focused research on public issues and develop new models, provide expertise, create linkages to support public

impact activities, and help initiate and guide public policy decision-making

- Collaborate with community organizations to define and prioritize the issues on which such research focuses
- Help raise the level of public awareness about and responsiveness to public issues
- Coordinate faculty and visitor colloquia, workshops, and conferences to bring awareness to and support the development of community-based scholarship
- Offer funding opportunities for individual faculty members, visitors, students, and student organizations to subsidize community-based research activities

Integrated Studies

We are a 2 or 4 year inclusive post-secondary initiative for young adults with an intellectual disability. Our campus community of faculty, staff, coaches, and mentors supports each student as they develop a person-centered plan to guide their journey at Millersville University.

Multi-Disciplinary Studies (MDST)

Multidisciplinary Studies (MDST) is a flexible program of study that builds on the University's existing strengths in the liberal arts and sciences.

With careful advisement, students are provided an opportunity to tailor studies to better meet their academic strengths and career goals. You will find the necessary forms (<https://www.millersville.edu/mdst/forms.php>), news bulletins and contact information to get started on this website.

Students in need of a signature, should submit the appropriate form using the electronic student forms, found here: <https://www.millersville.edu/forms/index.php>

RELATED ELECTIVES (B.A. AND B.S. OPTIONS)

The Multidisciplinary Studies major provides two degree pathways for students. Each degree option provides opportunities for interdisciplinary learning, practical experience, and industry readiness.

Students (and faculty advisors) should consult with the appropriate MDST Faculty Advisor *PRIOR* to switching majors, registering for classes, and/or drafting new MDST proposals.

THE PROGRAMS

- Multidisciplinary Studies, B.A. (p. 42)
- Multidisciplinary Studies, B.A., Applied Disability Studies Option (p. 42)
- Multidisciplinary Studies, B.A., Educational Studies Option (p. 43)
- Multidisciplinary Studies, B.A., Latinx and Latin-American Studies Option (p. 44)
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Multidisciplinary Studies, B.A.

BACHELOR OF ARTS IN MDST

Core Program 1: 18 credits (9 credits at the 300 & 400 level required)

Core Program 2: 18 credits (9 credits at the 300 & 400 level required)

Capstone Course: 3 credits (advanced research seminar, internship, or practicum)

Required Related Electives: 9-12 credits **Chosen in consultation with advisor, disciplines not used in core one or core two*

Note:

- With the approval of the student's advisor(s), a concentration of study may be modified to include select credits from an existing department or minor concentration. 9-18 additional credits each from two related departments or concentrations. No student may graduate in the major without successfully completing the minimum **required credit hours** of the Core Concentrations and a Capstone Course.
- Change of major to MDST *may alter* a student's general education distribution. Courses used in the major (Core 1 or Core 2) may not also count for General Education credits. Students should consult with their advisors to resolve any conflicts.
- Capstone course should be planned as one of the LAST courses fulfilled in the major.

Multidisciplinary Studies, B.A., Applied Disability Studies Option

The framework for a Concentration in Applied Disability Studies combines courses in educational foundations with courses in social sciences and prepares students to work in the rapidly expanding area of disability services, education support and advocacy organizations. Employment opportunities exist in the government, business, and non-profit sectors. Regarding services for people with disabilities, for example, current Pennsylvania labor data reveals a need for middle level professionals with competencies in leadership, management and supports for people with disabilities.

CAREERS OPPORTUNITIES

Students are prepared to play leadership roles in the field of disability. Future careers include program director and policy positions in community service agencies, advocacy organizations, independent living centers, parent centers, planning councils, and government agencies.

- Protection and advocacy agencies
- Parent training and information centers
- State agencies for Intellectual/developmental disabilities
- Self-advocacy associations
- Community and family support agencies
- University or college offices for students with disabilities
- Independent living centers
- Inclusive Post-Secondary Education programs
- Human service organizations

Practitioners are working towards improving the healthcare for people with disabilities through disability studies. This multidisciplinary field of inquiry draws on the experiences and perspectives of people with

disabilities to address discrimination. Inclusion of disability studies in medical, education and business curricula is being reported as a preliminary step towards bringing medical and business humanities into professional development (http://en.wikipedia.org/wiki/Disability_studies (http://en.wikipedia.org/wiki/Disability_studies/)).

Disability Studies is an emerging interdisciplinary field of scholarship that critically examines issues related to the dynamic interplays between disability and various aspects of culture and society, including social services and government policy. Applied Disability Studies unites critical inquiry and political advocacy by utilizing scholarly approaches from the humanities, social sciences, and the arts. When specifically applied to professional development issues, it promotes the importance of infusing analyses and interpretations of disability throughout all forms of social research, professional preparation, and graduate studies (<http://www.nl.edu/dse/SusanGabel.htm>).

The essence of this curriculum is the combining of specific vocational competencies with skills and practice in critical thinking. The process nurtures the essence by evoking the model of individualized career planning. Who is the student, what are the student's needs and how are the vocational and personal growth needs best met? The individualized approach is the foundation of advisement for each particular student.

PROGRAM GOALS

These goals are conceptualized as the ultimate "ends" we hope to achieve in educating students and trainees in disability studies.

- Promote full social integration by providing knowledge, awareness, and experience of inclusion and integration of people with disabilities as a foundational ethical principle of disability studies.
- Position disability as a social justice issue by exposing students to historical and contemporary disability issues and providing learning opportunities to identify, articulate, and address inequities and injustices affecting the lives of people with disabilities.
- Position disability as diversity by providing theoretical and practical contexts for thinking about disability as a component of human diversity, and providing students with tools to critically examine social and cultural constructions of disability.
- Create circumstances for the analysis and knowledge of the human services system and its role in shaping the life experiences (segregated & integrated) of people with disability.
- To provide an understanding of the social, economic, historical, political, cultural, and legal forces that shape policy and practices in the field of disabilities

LEARNING OUTCOMES

In order to assess the program and student learning, we have developed the following list of learning outcomes, which represent key areas of expertise for all students graduating with this concentration in the MDST major.

- Students will demonstrate competency in understanding the biopsychosocial implications of disability and in producing interdisciplinary disability studies research questions and analyses.
- Students will learn to examine and critique enabling and disabling ideological assumptions that shape social institutions, professions, policies, and systems of representation. Students will also demonstrate the ability to theoretically connect ideological

assumptions about disability to those regarding gender, race, age, class, nationality, and sexual orientation.

- Students will gain knowledge and understanding about disability history, rights, policies, and contemporary issues, especially in terms of the way people with disabilities, through their own agency, advocacy, and voices, have shaped conceptions of disability in specific historical and contemporary contexts.
- Students will demonstrate improved skills in working with people with disabilities, and increased ability to understand individual and family concerns.
- Students will demonstrate a broad awareness of the applicability of disability studies knowledge to a wide range of professions, and increased understanding of specific careers related to

Multidisciplinary Studies(BA)- Ed & Human Services

Code	Title	Hours
APDS - PRACTICING WITHIN SOCIAL INSTITUTIONS		
EDFN 211	Foundations Modern Education	3
	Psyc Foundations of Teaching	3
EDFN 241	Psychological Foundations of Teaching	
SPED 237	Applied Foundations of Contemporary Special Education	3
SPED 330	Discrimination and Oppression of People with Disabilities	3
Whose School Is it?, Women Ed, or Urban Immers - Choose 1 of the following:		
EDFN 376	Whose School Is It?	
EDFN 312	Women and Education	
EDFN 398	Urban Immersion Seminar	
Issues Sec Ed, Sec Prog Trans Plan, or Living Online - Choose 1 of the following:		
EDSE 321	Issues in Secondary Education	3
EDSE 521	Issues in Second Education	
SPED 444	Transition Planning and Secondary Programming for Individuals with Disabilities	
EDFN 355	Living Online	
APDS - DISABILITY RIGHTS, HISTORY AND SOCIAL POLICY		
SOWK 350	Encounters in Human Diversity	3
Social Work Health Care or SOWK Mental Health - Choose 1 of the following:		
SOWK 307	Social Work and Health Care	
SOWK 309	SOWK Behavior & Emotion Health	
Social Work Women or Family Violence - Choose 1 of the following:		
SOWK 312	SOWK & Wmn: Strgth, Need & Opp	3
SOWK 313	Family Violence	
Nightmare Years, US Social History and Hitler Nazism		
Select 2 classes from HIST 342, 365 and 458. However, HIST 365 and 458 have been discontinued. Please work with your advisor to select alternate courses to substitute for this requirement.		
History of Medicine, African American History I or II - Choose 1 of the following:		
HIST 480	History of Medicine	
HIST 272	Afro-American History 1	
HIST 273	Afro-American History 2	
APDS - REQUIRED CAPSTONE EXPERIENCE		

undefined - Choose 1 class from:

Any 300 course(s)	
Any 400 course(s)	
EDFN 498	Independent Study (Capstone in Disability Studies)
A 2.0 GPA must be maintained in the overall major block and in each of the two Core areas, 'Practicing within Social Institutions' and 'Disability Rights, History and Social Policy'	
Total Hours	30

Req Related for Multidisciplinary Studies - Educ

Code	Title	Hours
Recommended Electives for Applied Disability Studies		
These courses are not required but are recommended and will fulfill the Social Sciences (G3) requirement for General Education.		
ECON 101	Principles of Macroeconomics (G3)	0
ECON 102	Principles of Microeconomics (G3)	0
BUAD 251	Principles of Management (G3)	0
Total Hours		0

Multidisciplinary Studies, B.A., Educational Studies Option

The Educational Studies (MDST ES) concentration prepares Millersville students for work in the field of education, outside of public schooling. This unique concentration recognizes the important educational opportunities provided by social service agencies, museums, private schools, for-profit organizations, government agencies, new education start-ups, and so on. Students who enroll in the MDST ES concentration will take classes that will prepare them to think about teaching and learning in diverse settings, and will match them with valuable field experiences and internships according to their interests.

Multidisciplinary Studies(BA)- Ed & Human Services

Code	Title	Hours
EDST - FOUNDATIONS OF EDUCATION		
EDFN 211	Foundations Modern Education	3
	Psyc Foundations of Teaching	3
EDFN 241	Psychological Foundations of Teaching	
SPED 237	Applied Foundations of Contemporary Special Education	3
EDSE 321	Issues in Secondary Education	3
GFED 370	Teaching Gifted Learners	3
Instructional Tech in ELED, or Inst Tech, Design Assess - Choose 1 of the following:		
EDFN 320	Instructional Technology in Elementary Education	
EDFN 330	Instructional Technology, Design & Assessment	
EDST - SOCIOCULTURAL CONTEMPORARY APPROACHES TO ED		
ANTH 121	Cultural Anthropology	3
Anthropology Elective - Choose 1 of the following:		
ANTH 223	People and Cultures Of Mediter	
ANTH 227	Culture Through Film	
ANTH 326	Anthropology of Religion	
ANTH 336	Language & Communication	
ANTH 327	Urban Anthropology	

Contemporary Approaches Education Electives - Choose 4 of the following: 12

ERCH 290	Children's Engineering
EDTE 290	Children's Engineering
ERCH 315	Family & Community: Aspects of Diversity
ERCH 316	Creative Experiences for the Young Child
EDFN 312	Women and Education
EDFN 355	Living Online
EDFN 376	Whose School Is It?
EDFN 398	Urban Immersion Seminar
EDUC 433	Gender and Race Issues
EDUC 403	Pluralism in Society

EDST - REQUIRED CAPSTONE EXPERIENCE

undefined - Choose 1 of the following: 12

EDFN 300	Co-Op Ed Experience in EDFN
EDFN 400	Co-Op Ed Experience in EDFN

A 2.0 GPA must be maintained in the overall major block and in each of the two Core areas, Foundations of Education and Sociocultural Contemporary Approaches to Education.

Total Hours 48

Req Related for Multidisciplinary Studies - Educ

Code **Title** **Hours**
Related Electives for Educational Studies - Choose 4 classes totaling at least 12 hours from: 12

Any 2-level FREN course(s)
Any 3-level FREN course(s)
Any 4-level FREN course(s)
Any 2-level GERM course(s)
Any 3-level GERM course(s)
Any 4-level GERM course(s)
Any 2-level SPAN course(s)
Any 3-level SPAN course(s)
Any 4-level SPAN course(s)
Any 2-level JAPN course(s)
Any 3-level JAPN course(s)
Any 4-level JAPN course(s)
Any 2-level HUMN course(s)
Any 3-level HUMN course(s)
Any 4-level HUMN course(s)
Any 2-level SOWK course(s)
Any 3-level SOWK course(s)
Any 4-level SOWK course(s)
Any 2-level SOCY course(s)
Any 3-level SOCY course(s)
Any 4-level SOCY course(s)
Any 2-level ANTH course(s)
Any 3-level ANTH course(s)
Any 4-level ANTH course(s)
Any 2-level HIST course(s)
Any 3-level HIST course(s)
Any 4-level HIST course(s)
Any 2-level PSYC course(s)

Any 3-level PSYC course(s)
Any 4-level PSYC course(s)
Any 2-level LATS course(s)
Any 3-level LATS course(s)
Any 4-level LATS course(s)
Any 2-level AFAM course(s)
Any 3-level AFAM course(s)
Any 4-level AFAM course(s)
Any 2-level WSTU course(s)
Any 3-level WSTU course(s)
Any 4-level WSTU course(s)
Any 2-level WSSD course(s)
Any 3-level WSSD course(s)
Any 4-level WSSD course(s)
Any 2-level BIOL course(s)
Any 3-level BIOL course(s)
Any 4-level BIOL course(s)
Any 2-level ESCI course(s)
Any 3-level ESCI course(s)
Any 4-level ESCI course(s)
Any 2-level INTL course(s)
Any 3-level INTL course(s)
Any 4-level INTL course(s)
Any 2-level THEA course(s)
Any 3-level THEA course(s)
Any 4-level THEA course(s)
Any 2-level ART course(s)
Any 3-level ART course(s)
Any 4-level ART course(s)
Any 2-level MUSI course(s)
Any 3-level MUSI course(s)
Any 4-level MUSI course(s)
Any 2-level GOVT course(s)
Any 3-level GOVT course(s)
Any 4-level GOVT course(s)

Students are strongly encouraged to consult with their advisor to select an academic minor to support their specific career aspirations. Suggested minors include: Language Studies, Culture Studies, Social Justice, Sociology, Anthropology, Criminology, History, Psychology, Latino Studies, African American Studies, Women's Studies, Athletic Coaching, Environmental Issues, International Studies, Theatre, Art, Music, or Government Political Affairs.

Total Hours 12

Multidisciplinary Studies, B.A., Latinx and Latin-American Studies Option

Multidisciplinary Studies with Concentration in Latinx and Latin-American Studies will provide students an avenue to better understand the origins, cultural heritage, and contributions of Latinx people to the United States.

The service component to the courses will increase student appreciation for the various lived experiences within the Latino/a community. The

MDST concentration in Latinx & Latin-American studies will provide exposure to the largest ethnic minority group in the United States and provide students opportunities to equitably apply their understanding in service to the Latino/a population.

This major provides a rigorous academic grounding and a high-impact practice.

Multidisciplinary Studies(BA)-Social Sciences AHSS

Code Title Hours
 For Spanish Language courses you will choose from SPAN 101, 102, 201, 202, 211, 212, 301, 303, 351, 352, 361, 362, 371, 460, or 470 depending upon placement test results.

LATINX STUDIES - CORE 1

LATS 201	Introduction to Latino Studies	3
LATS 325	Afro-Latino Cultural Experiences	3
HUMN 380	Latino Issues of Identity	3
Reading Our World- Latinx or Caribbean Diasporas		3
ENGL 242	Reading Our World:	
Latinx Sexualities and Gender Identities or Topics Course		3
LATS 491	Topics in Latina/o Studies	
Spanish Language Course - Choose 1 of the following:		3-4

SPAN 101	Elementary Spanish 1	
SPAN 102	Elementary Spanish 2	
SPAN 201	Intermediate Spanish 1	
SPAN 202	Intermediate Spanish 2	
SPAN 211	Spanish for Business 1	
SPAN 212	Spanish for Business 2	
SPAN 301	Commercial Spanish	
SPAN 303	Spanish for Heritage Speakers	
SPAN 351	Composition and Oral Expression 1	
SPAN 352	Composition and Oral Expression 2	
SPAN 361	Oral Spanish 1	
SPAN 362	Oral Spanish 2	
SPAN 371	Spanish in the US	
SPAN 460	Translation and Interpretation	
SPAN 470	Spanish Linguistics	

LATIN AMERICAN STUDIES - CORE 2

GEOG 343	Latin America & the Caribbean	3
LATS 340	U.S. - Mexico Border Issues	3
HIST 283	Colonial Latin America	3
HIST 284	Modern Latin America	3

Two Spanish Language Courses - Choose 2 of the following: 6-7

SPAN 101	Elementary Spanish 1	
SPAN 102	Elementary Spanish 2	
SPAN 201	Intermediate Spanish 1	
SPAN 202	Intermediate Spanish 2	
SPAN 211	Spanish for Business 1	
SPAN 212	Spanish for Business 2	
SPAN 301	Commercial Spanish	
SPAN 303	Spanish for Heritage Speakers	
SPAN 351	Composition and Oral Expression 1	
SPAN 352	Composition and Oral Expression 2	
SPAN 361	Oral Spanish 1	

SPAN 362	Oral Spanish 2	
SPAN 371	Spanish in the US	
SPAN 460	Translation and Interpretation	
SPAN 470	Spanish Linguistics	

CAPSTONE EXPERIENCE - SENIOR SEMINAR OR INTERNSHIP/ RESEARCH

undefined - Choose 1 of the following:		3-12
LATS 488	Latina/o Studies Senior Seminar	
LATS 300	Co-Op Ed Experience in LATS	

Total Hours 39-50

Req Related for Multidisciplinary Studies - AHSS

Code Title Hours		
Required Related for Latinx and Latin-American Studies		9
SOCY 308	Soc of Afr-Amer and Lat Educ	
PSYC 318	Psychology of Racism	
COMM 317	Intercultural Communication	

Total Hours 9

Multidisciplinary Studies, B.A., Pre-Occupational Therapy Option

The MDST concentration in Pre-Occupational Therapy, is an applied program of study that builds on students' interest and skill in working with individuals experiencing short-term or life-long physical, mental, and emotional challenges. Coursework includes interdisciplinary study in psychology, the biological and sports sciences, as well as complementary study in the social sciences.

PROGRAM ADVISORS:

Dr. Elizabeth Thyrum, Associate Professor (Psychology)
 Dr. Daniel Keefer, Professor (Wellness & Sport Sciences)

**students should review all course prerequisites/corequisites/ recommendations with an advisor. Be sure you have a thorough understanding of the concentration expectations prior to registration and/or switching majors.*

Multidisciplinary Studies(BA)- Ed & Human Services

Code Title Hours

POTD - PSYCHOLOGICAL FOUNDATIONS

PSYC 211	Principles of Statistics and Experimental Design 1	4
PSYC 215	Intro to Physiological Psychology	3
PSYC 228	Life Span Human Development	3
PSYC 337	Abnormal Psychology	3
PSYC 346	Applied Behavior Analysis	3
PSYC 356	Health Psychology	3

POTD - BIOLOGICAL AND SPORT SCIENCES

BIOL 254	Human Anatomy & Physiology I	4
BIOL 255	Human Anatomy & Physiology II	4
WSSD 311	Resp to Emergen: First Aid CPR	3
WSSD 375	Prevention and Care of Athletic Injuries	3
Kinesiological and Physiological Foundation of Sport		3
WSSD 450	Kinesiology and Phys Found of Sport	
WSSD 492	Seminar in Sport Science	3

REQUIRED CAPSTONE EXPERIENCE

undefined - Choose 1 of the following: 6-12

PSYC 495 Directed Projects in Psych

PSYC 300 Co-Op Ed Experience in Psych

PSYC 400 Co-Op Ed Experience in Psych

A 2.0 GPA must be maintained in the overall major block and in each of the two Core areas, Psychological Foundations and Biological Sport Sciences

Total Hours 45-51**Req Related for Multidisciplinary Studies - Educ**

Code	Title	Hours
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Related Electives for Pre-Occupational Therapy

PHYS 131 Physics 1 with Algebra 4

Cultural Anthropology or Introduction to Sociology - Choose 1 of the following: 3

ANTH 121 Cultural Anthropology

SOCY 101 Introduction to Sociology

Intro to Ethics or Moral Problems in Medicine - Choose 1 of the following: 3

PHIL 120 Introduction to Ethics

PHIL 285 Biomedical Ethics

Total Hours 10

Multidisciplinary Studies, B.A., Science Writing Option

This Science Writing concentration will challenge students to accurately translate the often arcane and complex news of scientific developments into lay language. In addition, students must also attempt to put scientific discoveries and controversies into historical, personal, political, economic, and social context. The multi-disciplinary skills will be grounded in a foundational knowledge in communicating information effectively and appropriately to diverse audiences. The concentration is also founded on an understanding of science needed to investigate and understand the technical content.

Multidisciplinary Studies, B.S.

BACHELOR OF SCIENCE IN MDST

Core Program 1: 24-30 credits (several advanced credits at 300 & 400 level, including labs required)

Core Program 2: 21-24 credits (several advanced credits at 300 & 400 level, including labs required)

Capstone Course: 3 credits (advanced research seminar, internship, or practicum)

Required Related Electives: 18 credits *These courses also fulfill 6 credits of Science and Mathematics, 3 credits in the Mathematics Foundation, and 9 credits in the Social Sciences requirements

Note:

- With the approval of the student's advisor(s), a concentration of study may be modified to include select credits from an existing department or minor concentration. 9-18 additional credits each from

two related departments or concentrations. No student may graduate in the major without successfully completing the minimum **required credit hours** of the Core Concentrations and a Capstone Course.

- Change of major to MDST *may alter* a student's general education distribution. Courses used in the major (Core 1 or Core 2) may not also count for General Education credits. Students should consult with their advisors to resolve any conflicts.
- Capstone course should be planned as one of the LAST courses fulfilled in the major.

Multidisciplinary Studies, B.S., Business Analytics Option

Business Analytics is an area that is interdisciplinary in nature, bringing together competencies across the social sciences and natural sciences.

Data acquisition, data analysis, strategic planning, and communication are essential skills that are common to a number of disciplines and form the core of any business analytics program. Students who enroll in the MDST Business Analytics concentration will gain the abilities and experience to analyze information and make data-driven recommendations that can help clients, workers, companies, and society as they lead business organizations into the future.

Multidisciplinary Studies(BS)- College of Business

Code	Title	Hours
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BUSINESS ANALYTICS - CORE 1 (BUSINESS)

BUAD 161 Intro to Financial Accounting 3

BUAD 162 Intro to Managerial Accounting 3

BUAD 206 Business Research Methods 3

BUAD 231 Principles of Marketing 3

BUAD 251 Principles of Management 3

Management Information Systems or Fundamentals of Info Tech - Choose 1 of the following: 3-4

BUAD 307 Management Information Systems

INTE 130 Fundamentals of Information Technology

BUAD 358 Management Science 3

MGMT 452 Operations and Supply Chain Management 3

Core 1 Electives - Choose 2 of the following: 6

ACCT 405 Topics in Accounting

FIN 405 Topics in Finance

ECON 335 Forecasting and Analytics

MKTG 431 Marketing Research

MGMT 381 Data & Information Management

BUSINESS ANALYTICS - CORE 2 (MATH AND COMPUTER SCIENCE)

CSCI 151 Intro to Programming for Data Science I 4

CSCI 152 Intro to Programming for Data Science II 4

CSCI 366 Database Systems 4

Data Mining or Data Analytics - Choose 1 of the following: 4

CSCI 452 Data Mining

CSCI 453 Large-Scale Data Analytics and Visualization

MATH 120 Logic for Information Technology 2

Survey of Statistics or Applied Statistics I - Choose 1 of the following: 3

MATH 235 Survey of Statistics

ECON 231 Applied Statistics 1

MATH 255 Intro to Data Analytics 3

ECON 333	Econometrics	3
CAPSTONE EXPERIENCE - SENIOR SEMINAR OR INTERNSHIP/ RESEARCH		
undefined - Choose 3 hours from:		3
ACFN 300	Co-Op Ed Exp in Acct/Fin	
ECON 300	Co-Op Ed Experience in Econ	
MATH 300	Co-Op Ed Experience in Math	
MGMK 300	Co-Op Ed Exp in Mgmt/Mktg	
CSCI 300	Co-Op Ed Experience in CSCI	
ACFN 489	Honors Course	
ACFN 499		
CSCI 489	Honors Course	
CSCI 499	Departmental Honors	
ECON 489	Honors Course	
ECON 499	Departmental Honors	
MATH 489	Honors Course	
MATH 499	Departmental Honors	
MGMK 489	Honors Course	
MGMK 499		
Total Hours		60-61

Req Related for Multidisciplinary Studies - BUAD

Code	Title	Hours
Related Electives for Business Analytics		
ECON 101	Principles of Macroeconomics	3
ECON 102	Principles of Microeconomics	3
MATH 256	Data Visualization and Communication	4
Total Hours		10

Multidisciplinary Studies, B.S., Data Science Option

Millersville University's new MDST concentration, Data Science, is a program of study that provides students with a solid foundation of skills in data science by combining knowledge and methodology from computer science, mathematics, and design. In addition, students are required to complete a minor of their choosing to acquire an area of domain knowledge to which they can apply their data science skills.

Data Scientists finds success in a wide variety of industries due to their astute problem solving skills. From engineering, aeronautics, and finance to criminal justice and information technology, the demand for data scientists continues to grow.

Multidisciplinary Studies(BS)-SCTE Science & Tech

Code	Title	Hours
DATA SCIENCE - CORE 1 (COMPUTER SCIENCE)		
CSCI 161	Introduction to Programming 1	4
CSCI 162	Introduction to Programming 2	4
CSCI 362	Data Structures	4
CSCI 366	Database Systems	4
CSCI 450	Artificial Intelligence	4
CSCI 452	Data Mining	4
CSCI 453	Large-Scale Data Analytics and Visualization	4

DATA SCIENCE - CORE 2 (MATHEMATICS AND DESIGN)

CSCI 140	Discrete Structures	4
MATH 161	Calculus 1	4
MATH 211	Calculus 2	4
MATH 235	Survey of Statistics	3
MATH 236	Elements of Statistics 2	3
MATH 304	Matrix Algebra & Applications	4
DESN 144	Digital Theory and Skills	3
DESN 349	Information Design	3

REQUIRED CAPSTONE

A 2.0 GPA must be maintained in the overall major block and in each of the two Core areas

Co-op/Research/Thesis - Choose 1 of the following:		3-12
CSCI 300	Co-Op Ed Experience in CSCI	
CSCI 400	Co-Op Ed Experience in CSCI	
CSCI 498	Independent Study	
CSCI 499	Departmental Honors	
MATH 300	Co-Op Ed Experience in Math	
MATH 400	Co-Op Ed Experience in Math	
MATH 498	Independent Study	
MATH 499	Departmental Honors	

Total Hours 59-68

Req Related for Multidisciplinary Studies - SCTE

Code	Title	Hours
A Minor is Required. Please consult advisor		
A minor in a field other than Mathematics or Computer Science is required. Discuss options with your academic advisor.		
Minor Requirements - See separate block		
Total Hours		0

Office of Learning Services

The Office of Learning Services (OLS) promotes and encourages the unique learning styles of all Millersville University students through advocacy, assistive technology, collaboration, and direct services with the University community. Through excellence in service delivery, the Office of Learning Services fosters a climate that ensures student access and equity at Millersville University.

Starfish

Starfish (<https://eab.com/products/starfish/>) is Millersville University's student success platform. It promotes communication between students, course instructors, faculty advisors, and staff in support of student academic achievement.

Featured tools include: (1) **academic progress surveys** which provide timely updates on individual student course progress each semester, (2) **attendance surveys** to flag any students who have not or have stopped attending class, (3) **early alerts** which let students and academic advisors know when a student is staying on track or may need additional academic supports, (4) **student-generated "request help questions"** to get learners proactively connected to needed resources and information, and (5) **appointment and calendar features** for students to schedule meetings.

Success Coaching

Success coaching is a service available to ALL students. We believe every student can benefit from having individualized attention to support academic goals. Success coaching can be defined as a personalized, one-on-one partnership of helping students improve their life skills and academic performance. Working with a success coach can help students overcome the different barriers to their success.

University Honors College

Regulations governing admission, retention and graduation in the University Honors College are found in the Special Academic Opportunities section.

COURSE REQUIREMENTS

To graduate in the University Honors College, students must demonstrate competence in English composition and either statistics or calculus. They are required to take SSCI 203H H:Explorations in Hist of Ideas and ENGL 241H H:Explorations in World Lit, an honors laboratory science course, an honors perspectives course, at least nine hours of honors electives, and honors research (SUBJ 489) and honors thesis (SUBJ 499). To remain in good standing in the Honors College, students must maintain a minimum GPA of at least 3.20 and 3.35 in Honors coursework. University Honors College students who achieve a final overall GPA of 3.8 or higher will graduate from the University Honors College "With Distinction."

To receive the University Honors baccalaureate, students must:

1. Earn a cumulative GPA of at least 3.20 and 3.35 in honors coursework.
2. Earn a minimum of 25 honors credits and fulfill the Honors College curricular requirements. Honors credit is awarded only for those honors courses in which a B- or higher is earned.
3. Students must complete and successfully defend an honors thesis.
4. With proper approval, an Honors College student may enroll in up to two courses (maximum of six or eight credits, depending on the major) in their department major and earn honors credit. Only courses at the 200 level or above will be considered appropriate. Students must have already earned a minimum of 12 credit hours with an honors designation.

ART 201H: 3 s.h.

H:Hist and Aesthtcs of Photog (G1)

H:Hist and Aesthtcs of Photog

BIOL 108H: 1 s.h.

Hrs:Freshman Biology Seminar

Emphasis on the intellectual and historical context of the core ideas of BIOL 100 and an in-depth exploration of ideas raised in lecture and laboratory. Satisfies the honors lab when taken with Biology 100. 1 hr. seminar. Offered in fall, spring. Prereq or coreq: BIOL 100 or 101.

BIOL 212H: 1 s.h.

Hrs:Zoology Seminar

Continuation of BIOL 211. Original investigations and/or readings and discussions of the zoological literature about the diverse adaptations of animals to their environments. Completion of both BIOL/HNRS 212 and BIOL 211 earns 5 credits to be counted as one course in the G2 block. BIOL/HNRS 212 may not be used independently to fulfill a G2 requirement. 1 hr. seminar. Offered periodically. Prereq: completion of BIOL 211 with a grade of B- or higher and member of University Honors College, or 3.35 GPA, or instructor's permission.

BIOL 222H: 1 s.h.

Hrs:Problem Solving In Botany

A botanical science investigation of a problem or series of problems. Students define a problem with a botanical basis, search appropriate literature, formulate hypotheses and collect appropriate information to test hypotheses through experimentation and data gathering. Completion of both BIOL/ HNRS 222 and BIOL 221 earns 5 credits to be counted as one course in the G2 block. BIOL/HNRS 222 may not be used independently to fulfill a G2 requirement. 1 hr. seminar. Offered periodically. Prereq: completion of BIOL 221 with a grade of B- or higher and member University Honors College, or 3.35 GPA, or instructor's permission.

CHEM 113H: 1 s.h.

H:Introductory Chem 2 Seminar

The ideas of introductory chemistry are studied in extended depth, using problems, laboratory exercises, readings and discussion. Grades of B-or higher in both CHEM 112 and CHEM 113 will result in honors designation for the pair. The pair of courses counts as one entry in the science component of general education and results in 5 hours of general education credit. 1 hr. discussion. Prereq or Coreq: CHEM 112 is required

COMM 100H: 3 s.h.

Hrs:Fundamentals of Speech

Required fundamentals course in general education. An introductory study of the principles of public speaking with particular emphasis upon the selection and organization of information for persuasive purposes. Satisfies competency requirement. Offered in fall, spring

ECON 102H: 3 s.h.

Hrs:Prin of Microeconomics (G3)

Hrs:Prin of Microeconomics

ENGL 110H: 3 s.h.

Hrs:English Composition

Develops research and analytical skills; presumes basic writing competence. Students who demonstrate competency in ENGL 110 may be exempt from this requirement with written approval of the honors program director.

ENGL 240H: 3 s.h.

Hrs:Introduction to Film (G1, W)

Honors Introduction to Film

ENGL 241H: 3 s.h.

H:Explorations in World Lit (D, G1, W)

Investigates connections among a selection of representative literary works from at least three different linguistic traditions and various historical periods in both Western and non-Western cultures. Prereq: ENGL 110, Member University Honors College or 3.35 GPA.

ESCI 221H: 4 s.h.

Hrs:Physical Geology (G2)

GOVT 411H: 3 s.h.

Honors: Constitutional Law: Federalism and Separation of Powers

MATH 163H: 5 s.h.**Honors Calculus 1 (G2)**

The progression of mathematical concepts, in the context of the thought and civilization of the time, from the Babylonians to the 20th century. Focus on the contributions of the Hellenic and Alexandrian Greeks as a point of departure for the evolution of geometry, number theory, analysis and logic. Proofs of some of the great theorems. Offered in fall, spring and periodically in summer. Credit will not be granted for more than one course from MATH 151, 161 or 163H. These courses are considered equivalent and will be processed as repeat credit.

MATH 301H: 3 s.h.**Hnrs:History of Mathematics (P)**

The progression of mathematical concepts in the context of the thought and civilization of the time, from the Babylonians to the 20th century. Focus on the contributions of the Hellenic and Alexandrian Greeks as a point of departure for the evolution of geometry, number theory, analysis and logic. Proofs of some of the great theorems. Prereq: COMM 100, ENGL 110, MATH 151 or 156 or 161 or 163, and junior status.

PSYC 100H: 3 s.h.**Hnrs:General Psychology (G3)**

Hnrs:General Psychology

PHYS 230H: 1 s.h.**Hnrs:General Physics Seminar (G2)**

The ideas of introductory physics in extended depth, in the language of calculus, using problems, laboratory exercises, readings and discussion. Grades of B- or higher in both PHYS 231 and PHYS 230H will result in honors designation for the pair. The pair of courses counts as one entry in the science component of the curriculum record form and results in six hours of general education credit. Coreq: Concurrent registration in PHYS 231 required and either good standing in the Honors College or a 3.35 GPA or permission of instructor.

PSYC 227H: 3 s.h.**Hnrs:Devel Child and Adolescnc (G3, W)**

Hnrs:Devel Child and Adolescnc

PSYC 318H: 3 s.h.**H:Psychology of Racism (D, P)**

Honors Psychology of Racism

PSYC 325H: 3 s.h.**Happiness and Well-Being (D, P)**

Honors Happiness and Well-Being

SOWK 313H: 3 s.h.**H: Family Violence (P)****SSCI 203H: 3 s.h.****H:Exploratns in Hist of Ideas (G3, W)**

Topics in intellectual history, with an emphasis on the development of the "West" and its interactions with other civilizations and cultures. Required of freshman Honors students. Prereq or coreq: member of University Honors College and ENGL110H.

Wolfgang, Charlton; Associate Professor

College of Education and Human Services

B.S., Messiah College, 1993; M.S.Ed., Lebanon Valley College, 2002; Ph.D., Drexel University, 2013

University Writing Center

The Writing Center at Millersville University helps students with all aspects of their writing, from idea development and organization to proofreading strategies. Students who want to improve their writing

skills, techniques and styles can make appointments to consult on an assignment or to discuss general concerns. All levels of writing help are available, and students from all disciplines and classes are welcome.

The Writing Center tutors are here to help with papers, projects, and any writing-related needs. The Writing Center offers in-person, synchronous Zoom sessions, and online tutoring. If you can't make an in-person appointment, you can send a paper for an online session. For an online session, please e-mail the Writing Center at Writing.Center@millersville.edu, attach a copy of your work and a copy of the assignment for which the work was completed, and a tutor will review your work and send it back to you with guided feedback and comments within 48 hours.

The Writing Center is located on the first floor, Room 106, McNairy Library. For more information and hours see www.millersville.edu/english/writingcenter/ (<http://www.millersville.edu/english/writingcenter/>).

College of Arts, Humanities and Social Sciences

The College of Arts, Humanities and Social Sciences is known for its broad range of majors and interdisciplinary programs. We invite you to explore these exciting possibilities! Our faculty pride themselves on high quality teaching and deep commitment to student success. AHSS' programs are built on a strong foundation of liberal arts education, which we believe prepares our students for a wide variety of successful career paths.

We offer a transformative curriculum that enables our graduates to reason effectively, write clearly, speak persuasively, think critically and ethically, express themselves creatively, work collaboratively and have a broad perspective on diverse cultures and contexts. Many of our programs offer unique opportunities for hands-on learning in our state-of-the-art facilities, for example, art studios, music recording facilities, performance spaces, TV studio, language labs and others. All of our programs incorporate numerous opportunities for internships with regional companies, research with faculty, service learning projects, participation in professional conferences and competitions, and study abroad. Our graduates leave equipped with a wide array of transferrable skills as well as breadth and depth of knowledge that will allow them to adapt and evolve as life-long learners.

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African-American Studies

karibu! (Welcome!)

African-American Studies is an 18 credit interdisciplinary minor focusing on the history and socio-culture of African-Americans. The minor offers an introduction to issues, theories, and research concerning African-Americans in various disciplines. Courses in the minor emphasize African-American perspectives, as well as the development of critical thinking and written and oral communication skills.

The minor will present opportunities to examine, compare and contrast African-American perspectives with those of other American cultures. It offers students in a variety of disciplines important perspectives on African-American history and culture that will help them to understand the possibilities and values of cultural differences. Students will be encouraged to connect issues about African-American culture raised in the classroom to current society.

Fifteen of the 18 credits satisfy General Education requirements and knowledge of African-American culture will complement many majors, especially Elementary and Secondary Education, Business, Communications and Theatre, English, History, Sociology, Art, Music

and majors in the Department of Applied Engineering, Safety and Technology. It appears to be both essential and beneficial that all students have a multi-cultural perspective of themselves and the world around them.

goal

The goal of the African American studies Minor is to educate students about the history and culture of African Americans by exposing them to issues, theories and research concerning African Americans. Students will be encouraged to connect issues about African-American culture raised in the classroom to society.

In the 21st century, it will be both essential and beneficial for all students to have a multi-cultural perspective of themselves and the world around them. An African American studies minor will present opportunities to examine, compare and contrast African-American perspective with those of other American cultures.

the programs

- African-American Studies Minor (p. 51)

the faculty

Adyanga, Onek; Associate Professor, coordinator

the courses

AFAM 179: 1-3 s.h.

Experimental
Experimental

AFAM 201: 3 s.h.

Intro to African American Studies (D, G3)

Provides an overview of African-American culture and history. African-American perspectives and contributions in the areas of literature, art, theater, music, politics, economics, science and technology, medicine, male-female relationships, family, the church and the media will be presented. Offered annually.

AFAM 300: 3-12 s.h.

Co-Op Ed Experience in Afam
Co-Op Ed Experience in Afam

AFAM 400: 3-12 s.h.

Co-Op Ed Experience in Afam
Co-Op Ed Experience in Afam

AFAM 401: 3 s.h.

Senior Seminar in African American Studies

An examination and discussion of current research issues in African-American studies. May be taken in conjunction with a 2 to 3 credit independent study.

AFAM 496: 3 s.h.

Topics African American Study

Presents a detailed investigation on a topic of current interest in African-American studies. Topics will be announced.

AFAM 498: 1-3 s.h.

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African-American Studies Minor

African-American Studies is an 18-credit interdisciplinary minor focusing on the history and socio-culture of African Americans. The minor offers

an introduction to issues, theories and research concerning African Americans in various disciplines. Courses in the minor emphasize African-American perspectives, as well as the development of critical thinking and written and oral communication skills. The minor will present opportunities to examine, compare and contrast African-American perspectives with those of other American cultures. It offers students in a variety of disciplines important perspectives on African-American history and culture that will help them to understand the possibilities and values of cultural differences. Students will be encouraged to connect issues about African-American culture raised in the classroom to current society.

Fifteen of the 18 credits satisfy general education requirements, and knowledge of African-American culture will complement many majors, especially elementary and secondary education, business, communication and theatre, English, history, sociology, art, music, and industry and technology. It appears to be both essential and beneficial that all students have a multicultural perspective of themselves and the world around them.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in African American Studies

Code	Title	Hours
Credits Required for Minor		
	true	
Minimum Residency 50% of minor credits		
	true	
Minimum GPA 2.0 for Minor		
	true	
3 Courses Must be Upper-Division		
	true	
AFAM 201	Intro to African American Studies	3
AFAM 401	Senior Seminar in African American Studies	3
African American History - Choose 1 of the following:		3
HIST 272	Afro-American History 1	

HIST 273	Afro-American History 2	
HIST 282	Transatlantic Slave Trade	
African American Literature - Choose 1 of the following:		3
ENGL 333	African-American Literature 1	
ENGL 334	African American Literature 2	
Electives (2) in African American Studies - Choose 2 of the following: Choose electives from two different groups.		6
Humanities - See Appendix 1		
Social Sciences - See Appendix 2		
Education - See Appendix 3		
Mathematics and Science - See Appendix 4		
Total Hours		18

Appendix 1. Humanities

Code	Title	Hours
undefined - Choose 1 of the following:		3
COMM 227	Movements & Digital Activism	
ENGL 333	African-American Literature 1	
ENGL 334	African American Literature 2	
ENGL 429	Smnr Sel Am Auth:	
ENGL 430	Ethnic American Lit Since 1945	
MUSI 369	Intro to West African Music and Dance	

Appendix 2. Social Sciences

Code	Title	Hours
undefined - Choose 1 of the following:		3
ANTH 227	Culture Through Film	
ANTH 344	Gender, Race, and Class	
HIST 272	Afro-American History 1	
HIST 273	Afro-American History 2	
HIST 280	Pre-Colonial Africa	
HIST 281	African History	
HIST 282	Transatlantic Slave Trade	
HIST 383	Eur Imprlsm in Af 1870-1914	
HIST 388	Twentieth-Century Africa	
HIST 401	Cultural Interactions across the Atlantic World, 1450-1820	
HIST 308	Topics in History (Topics: Contemporary Africa)	
HIST 308	Topics in History (Topics: Caribbean 1492-1820)	
HIST 308	Topics in History (Top:Wmns Actvsm/Blck Liberatn)	
SOCY 307	African-American Social Thought	
SOCY 315	Race and Ethnic Relations	
SOCY 308	Soc of Afr-Amer and Lat Educ	
SOCY 441	Urban Society	
SOWK 350	Encounters in Human Diversity	
SSCI 212	The Black Woman	
WSTU 220	Introduction to Women's & Gender Studies	

Appendix 3. Education

Code	Title	Hours
undefined - Choose 1 of the following:		3
ERCH 315	Family & Community: Aspects of Diversity	

EDUC 403	Pluralism in Society	
EDUC 433	Gender and Race Issues	
PSYC 318	Psychology of Racism	

Appendix 4. Mathematics and Science

Code	Title	Hours
MATH 102	Math in Non-European Cultures	3

Art & Design

The Department of Art & Design is an accredited institutional member of the National Association of Schools of Art and Design and offers four baccalaureate-degree programs: the Bachelor of Arts in art (B.A.), the Bachelor of Fine Arts in art (B.F.A.), the Bachelor of Design in interactive and graphic design (B.Des.) and the Bachelor of Science in art education (B.S.Ed.). The recommended course sequence for the B.A., B.F.A. and B.S.E. are similar during the first two years so that any change among these three degree programs in the department will not result in loss of time or credits.

Liberal arts, art education and fine arts degree programs are designed to offer the flexibility needed to meet the unique needs of each student. To lend authenticity to this idea, each student, with the help of an advisor, assumes much of the responsibility for determining their program of study.

B.A., B.Des. and B.F.A. art students must maintain a minimum grade point average of 2.0 in their major, while B.S.Ed. students must maintain a minimum GPA of 3.0 overall.

The B.A. program in art provides a sound, broad-based educational foundation which, to a considerable extent, can be individually tailored to meet the specific educational goals of each student.

The B.S.Ed. in art education program is designed for students who aspire to become art teachers. Upon completing this program, students are certified to teach art at both the elementary and secondary levels in the public and private schools of Pennsylvania.

The B.Des. in interactive and graphic design program provides greater depth and focus in interactive and graphic design. This credential accurately reflects the intensive design educational experiences embedded in this professional study of interactive and graphic design. This degree clearly communicates to employers the concentrated professional skills and attributes of graduates from this program.

The B.F.A. program offers greater depth in art studio and is the professional studies program designed for persons who either intend to become self-employed artists, or graphic designers who wish to further their education in graduate school programs in studio art. Additionally, students may combine the B.F.A. degree with teaching certification.

The Department of Art & Design encourages highly motivated students to participate in internship and cooperative education opportunities that exist in both the public and private sectors. These opportunities are described in the Special Academic Opportunities section of this catalog.

Applicants for the B.F.A. in art, B.A. in art or the B.S.Ed. in art education programs, including transfer applications, must submit an art portfolio that should include a variety of the student's best artwork. Ten to 15 pieces will be requested in total, with at least two drawings from direct observation. Applicants for the B.Des. in interactive and graphic design are to submit a design review. For this degree the applicants may either

complete three design projects or submit a design portfolio. The design portfolio should include 10-15 pieces that show design thinking. The works can be in any medium, be it computer generated, hand drawn or physically built. No original work will be accepted. There will be no in-person reviews. Portfolio deadlines are the first Friday of the month

the programs

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- Photography Minor (p. 68)
- Studio Art Minor (p. 68)

the faculty

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College of Arts, Humanities and Social Sciences
B.F.A., Indiana University of Pennsylvania, 1995; M.F.A., University of Massachusetts, 1999

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College of Arts, Humanities and Social Sciences
B.S., The Pennsylvania State University, 1989; M.A., *Ibid.*, 1994; Ph.D., Rutgers University, 2009

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College of Arts, Humanities and Social Sciences
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Gates, Leslie; Professor
College of Arts, Humanities and Social Sciences
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College of Arts, Humanities and Social Sciences
B.A., American University, 2000; B.A., Chautauqua School of Art, 2002; B.A., Anderson University, 2002; M.F.A., Western Carolina University, 2006

Mata, Nancy; Associate Professor
College of Arts, Humanities and Social Sciences
B.F.A., West Chester University, 1992; M.A., Syracuse University, 2000; M.F.A., Temple University/ Tyler School of Art, 2002

McDonah, Becky; Professor
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B.A., University of Wisconsin-Lacrosse, 1995; M.F.A., Arizona State University, 2000

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College of Arts, Humanities and Social Sciences
B.F.A., Kutztown University, 1998; M.F.A., Rochester Institute of Technology, 2004

Robinson-Lawrence, Jeri; Professor

College of Arts, Humanities and Social Sciences
B.F.A., SUNY At Purchase, 1986; M.F.A., The School of the Art Institute of Chicago, 1988

Schuller, Brant; Professor
College of Arts, Humanities and Social Sciences
B.F.A., Cleveland Institute of Art, 1990; M.F.A., The Pennsylvania State University, 1992

Sigel, Deborah; Professor
College of Arts, Humanities and Social Sciences
B.A., Carleton College, 1986; M.F.A., Cranbrook Academy of Art, 1991

the courses

ART 100: 3 s.h.

Art in Culture (G1)

A general study of the role of historical and contemporary art in society. Critical analysis of art that addresses the following: What is art? Why is it made? How is it made? What is the context in which it was created? An understanding of the importance of art and of the creative process. Does not count towards any art major. Offered fall, spring, periodically summer.

ART 111: 4 s.h.

Survey 1 (G1)

Survey 1 Offered at Franklin and Marshall

ART 115: 4 s.h.

Arts Of East Asia I (G1)

Arts Of East Asia I Offered at Franklin and Marshall

ART 117: 4 s.h.

E Asian Art:Medieval to Modern (G1)

E Asian Art:Medieval to Modern Offered at Franklin and Marshall

ART 118: 4 s.h.

Intro to Architectural Design (G1)

Intro to Architectural Design Offered at Franklin and Marshall

ART 128: 3 s.h.

Art Integration (G1)

This course provides education majors with a theoretical and practical knowledge base about art and its role in learning. Topics to be explored include: art vocabulary; children's artistic development; art resources, media, materials, tools and techniques; and how these elements are appropriately and authentically incorporated into other content areas. This will provide the prospective educator with the fundamentals for developing an interdisciplinary approach to teaching art across the curriculum.

ART 133: 3 s.h.

Drawing 1 (G1)

Introduces drawing as artistic expression as well as a form of nonverbal communication. Traditional and contemporary perspectives. Emphasis on original creative solutions to visual problems. Students explore artistic composition employing various drawing media and techniques. Includes criticism, analysis and evaluation. For both the non-art major and the art major. Offered in fall, spring and periodically in summer.

ART 140: 3 s.h.

Digital Foundations of Art (G1)

An introductory studio course that allows for investigation of contemporary digital media methods used by artists and designers. Image making will utilize raster, vector, and interactive techniques. Primary course emphasis is on creative problem solving followed by technical skill building while using the computer as a tool.

ART 142: 3 s.h.**2D Design (G1)**

Introduces two-dimensional design and composition, applicable to all art forms, in which students seek original, creative solutions to problems. Design principles and methods are employed as students learn language and visual communications techniques. Artistic production, criticism, analysis and evaluation are central to this course. For both non-art and art majors. Offered in fall, spring.

ART 167: 3 s.h.**Experimental Photography (G1)**

Nontraditional, historical and hybrid photographic processes are explored, including pin-hole cameras, photograms and antique processes. Covers criticism, history, analysis and mounting prints for display. Students do not need a camera. Offered fall.

ART 175: 4 s.h.**Islamic Art and Architecture**

Islamic Art and Architecture Offered at Franklin and Marshall

ART 179: 3 s.h.**Experimental**

Experimental

ART 200: 4 s.h.**Chinese Brush and Ink Painting**

Chinese Brush and Ink Painting Offered at Franklin and Marshall

ART 201: 3 s.h.**History and Aesthetics of Photography (G1)**

A survey of the history, principles and theory of photography in the 19th and 20th centuries as it is used as an aesthetic medium and for visual communication. Differentiation between photographs made as art vs. snapshots, photojournalism, scientific record and commercial art is emphasized. Offered periodically.

ART 201H: 3 s.h.**H:Hist and Aesthtcs of Photog (G1)**

H:Hist and Aesthtcs of Photog

ART 202: 3 s.h.**Survey of Art History 1: Prehistoric to c 1400 (G1)**

This course is an introduction to art and to the discipline of art history, beginning with Prehistory through the early Italian Renaissance. The course focuses on the functions and meanings of individual works of art, visual culture, and art history as a discipline. It is designed as an introduction to art history for both non-art and art majors. Offered fall, spring.

ART 203: 3 s.h.**Survey Art History 2: 1400 through 20th Century (G1)**

This course is an introduction to art and to the discipline of art history, beginning with the early Italian Renaissance period through the 20th century. The course focuses on the functions and meanings of individual works of art, visual culture, and art history as a discipline. It is designed as an introduction to art history for both non-art and art majors. Offered fall, spring.

ART 221: 3 s.h.**Introduction to Art Education**

An overview of art education with particular emphasis on historical and contemporary rationales for teaching art, the identification of authentic assessment practices, and the observation of art instruction and alternative career options through a variety of field experiences. Offered fall, spring. Art majors only.

ART 233: 3 s.h.**Drawing 2**

Fundamental drawing skills are stressed and personal expression is emphasized. A variety of techniques and observational exercises will be used. Working from the figure, short and extended studies will be developed. Offered in fall, spring and periodically in summer. Prereq: ART 133.

ART 242: 3 s.h.**3D Design**

Introduces visual composition as related to organizing and working with three-dimensional space. The student seeks original, creative solutions to visual problems by exploring methods and techniques. Covers fundamental visual grammar and principles. Offered in fall, spring. Prereq: ART 142.

ART 245: 4 s.h.**History of Photography (G1)**

History of Photography Offered at Franklin and Marshall

ART 270: 2-4 s.h.**Art Hist Topics:**

Art Hist Topics: Offered at Franklin and Marshall

ART 271: 4 s.h.**Topics:**

Topics: Offered at Franklin and Marshall

ART 273: 4 s.h.**Survey Japanese Art (G1)**

Survey Japanese Art Offered at Franklin and Marshall

ART 275: 4 s.h.**Art History Topics (G1)**

Art History Topics Offered at Franklin and Marshall

ART 279: 3 s.h.**Experimental**

Experimental

ART 282: 3 s.h.**Sculpture 1 (G1)**

An introduction to sculpture as a three-dimensional form of artistic expression, through a variety of sculptural approaches. Covers the critical, the productive, and the evaluative aspects of sculpture as art. Offered fall, spring.

ART 291: 3 s.h.**Intro: Fine Art Metals/Jewelry (G1)**

Introduces jewelry and metals as a form of artistic expression. The student seeks creative solutions to visual problems while employing various metal working techniques and media. Emphasizes basic techniques of cutting, piercing, soldering, forging, forming and finishes of non-ferrous metals. Critical analysis and evaluation of jewelry and metal art are central to the course. For both art majors and non-art majors. Offered in fall and spring.

ART 295: 3 s.h.**Ceramics:Hand Building (G1)**

Introduces ceramic materials and the processes utilizing handbuilding and sculpting methods. Emphasis on the productive, critical, cultural and historical aspects of ceramics as a form of artistic expression. Students seek creative solutions to visual problems. Offered fall, spring.

ART 296: 3 s.h.**Ceramics:Wheel Throwing (G1)**

Introduces ceramic materials and processes utilizing the potter's wheel. Emphasis on the productive, critical, cultural and historical aspects of ceramics as a form of artistic expression. Wheel throwing and glazing techniques are employed as students seek original creative solutions relating to function and aesthetics. For both non-art and art majors.

ART 297: 3 s.h.**Ceramics 2**

Development of ceramic materials and processes as a means of self expression. Introduces glaze preparation, experimentation and basic glaze chemistry and firing techniques. Prereq: ART 295 or 296.

ART 297H: 3 s.h.**Hon: Ceramics 2****ART 300: 3-12 s.h.****Co-Op Ed Experience in Art**

Co-Op Ed Experience in Art

ART 301: 3 s.h.**The Ancient World (G1)**

A survey of Western painting and sculpture from the Paleolithic through the Hellenistic periods. Prereq: ART 202

ART 302: 3 s.h.**The Italian Renaissance (G1)**

A comprehensive analysis of painting and sculpture produced in Florence and Siena from the 13th through the 15th centuries. Prereq: ART 202 or by permission of instructor. Offered periodically.

ART 303: 3 s.h.**The 19th Century (G1)**

A survey of European art of the 19th century. Offered periodically. Prereq: ART 203 or by permission of instructor.

ART 304: 3 s.h.**The 20th Century (G1, W)**

The varied schools and styles of painting and sculpture in the 20th century. Prereq: ENGL 110 and ART 203 or by permission of instructor.

ART 305: 3 s.h.**Women in Art (D, G1, W)**

This course will address ways in which gender issues have affected the visual arts, with an emphasis on art and culture since World War II. This class explores the role of the visual in constructing ideas of "woman" and the ways in which women artists have addressed these constructions in their works and in their lives. Students will critically examine the ways Western culture has defined art and artists in gendered terms, and will extend this study to contemporary art practice globally with attention to intersectionality and difference. Through weekly readings, class discussions, written assignments, oral presentations, and an exam, students will consider how gender is relevant to the creation and study of art and culture. This course is designed to be cross-listed within the Women and Gender Studies Program. No prior knowledge of art or art history is necessary.

ART 306: 3 s.h.**Intro Photography: Darkroom (G1)**

Beginning black and white darkroom course with an emphasis on fine art, including operation of camera, developing film, making enlargements and mounting prints for display. Covers criticism, history and analysis. Students must have a 35mm single-lens reflex film camera with fully manual focusing/exposure capabilities. Offered in fall, spring.

ART 306H: 3 s.h.**H: Intro Photography: Darkroom (G1)****ART 313: 3 s.h.****Art in America (G1)**

A comprehensive survey of 18th and 19th century American painting, concentrating on those influences and traditions that were significant in the development of the art of the new world. Offered periodically. Prereq: ART 203 or by permission of instructor.

ART 316: 4 s.h.**Problems in Advncd Sculpture**

Problems in Advncd Sculpture Offered at Franklin and Marshall

ART 324: 3 s.h.**Designing Meaningful Art Education Experiences (W)**

Build on the rationales for art education addressed in ART 221 with an investigation into designing meaningful art education experiences for PK-12 students. Design art education experiences and will consider how policies at the state and local level influence how teachers enact curriculum in their classrooms. Offered annually. Prereq: Act 34/151 & FBI clearances & TB test results, ENGL 110, ART 221, EDFN 211, 241.

ART 325: 3 s.h.**Methodology and Pedagogy of Art (W)**

An examination of classroom strategies, materials and technologies used in teaching art to develop creative and critical thinking in all students. An emphasis on self-reflection and professionalism though team teaching and service learning in a variety of field experiences. Offered fall, spring. Prereq: Admission to Advanced Professional Studies, ENGL 110, ART 322.

ART 331: 3 s.h.**Book Arts**

Explores the concept of the book as an art form. Emphasis will be on the use of sequencing to express artistic storytelling, narrative, multiples and one-of-a-kind books. Both traditional and contemporary bookbinding techniques will also be reviewed and utilized. Offered periodically.

ART 333: 3 s.h.**Drawing 3**

Continued drawing skill development using a variety of subjects including the figure. Traditional and nontraditional approaches to methods and materials are encouraged. Individual development of a personal idiom of expression will be required. Offered periodically. Prereq: ART 233. Offered periodically.

ART 345: 3 s.h.**Introduction to Computer Art**

Explores and develops design capabilities for aesthetic expression through the use of contemporary digital media. Offered periodically.

ART 345H: 3 s.h.**Hon: Intro to Computer Art****ART 352: 3 s.h.****Painting 1**

An introduction to painting in oil, acrylic and related media in which the student explores basic techniques and approaches to painting through the use of drawing, design and color. Offered in fall and spring. Prereq: ART 133, 142 or permission of instructor.

ART 353: 3 s.h.**Watercolor 1**

Introduces watercolor techniques through a series of problems related to the development of skill in handling the medium. Prereq: ART 133 and ART 142 or permission of instructor.

ART 354: 3 s.h.**Painting 2**

Continued development of painting skill with the emphasis on sustained individual development and technical expression. Offered in fall and spring. Prereq: ART 352 or permission of instructor.

ART 354H: 3 s.h.**H: Painting 2****ART 355: 3 s.h.****Watercolor 2**

Continued development of painting in watercolor with the emphasis on sustained individual development and technical expression. Prereq: ART 353 or permission of instructor.

ART 361: 3 s.h.**Survey Printmaking 1**

Introduction to the four areas of printmaking: relief, intaglio, lithography, and silkscreen. Projects in each of these areas will develop technical skills and understanding of the physical nature of creating original prints. Issues of subject matter, content, and intent will be discussed and explored. Creative and original solutions to visual problems will be emphasized. Offered fall, spring. Prereq: ART 133, 142.

ART 363: 3 s.h.**Lithography Printmaking 1**

Explores multiple approaches to creating lithographic prints. Starts at an introductory level technically and builds with each new process into an intermediate understanding and working knowledge of the process. Covers stone lithography, aluminum plate lithography, and waterless lithography. Offered periodically. Prereq: ART 133, 142.

ART 364: 3 s.h.**Relief Printmaking 1**

Explores multiple approaches to creating relief prints. Starts at an introductory level technically and builds into an intermediate understanding and working knowledge of the process. Covers linocut, alternative relief matrices, color reduction and multiple block relief printing. Offered periodically. Prereq: ART 133, 142

ART 365: 3 s.h.**Intaglio Printmaking 1**

Explores multiple approaches to creating intaglio prints. Starts at an introductory level technically and builds with each new process into an intermediate understanding and working knowledge of the process. The course will cover drypoint etching (hardground/ softground), aquatint and sugar lift, white ground, toner transfers, spitbite, and will introduce color printing (ala poupee/monoprinting). Offered periodically. Prereq: ART 133, 142.

ART 367: 3 s.h.**Water Based Silkscreen 1**

Explores multiple approaches to creating water-based silkscreen prints. Starts at an introductory level technically and builds with each new process into an intermediate understanding and working knowledge of the process. Covers basic to intermediate stencil preparation including photographic processes. Offered periodically. Prereq: ART 133, 142.

ART 368: 3 s.h.**Collage**

Offers a historical look at the last 100 years of collage as a media for fine art. Highlights of its history will be discussed and followed by a hands-on application of the ideas and imagery that it encompasses. Offered infrequently. Prereq: ART 133, 142.

ART 371: 4 s.h.**Art History Topics (G1)**

Art History Topics Offered at Franklin and Marshall

ART 376: 3 s.h.**Intro to Photo: Digital (G1)**

Beginning digital course that introduces the basic skills and concepts associated with digital photography as used by contemporary visual artists and communicators. Covers cameras, computer hardware, photo-editing software, printing, file management, criticism, history and analysis. Students must have a digital single-lens reflex camera.

ART 379: 3 s.h.**Experimental**

Experimental

ART 382: 3 s.h.**Sculpture 2**

Emphasis on continued development of individual artistic expression, with emphasis on contemporary sculptural approaches. Offered fall, spring. Prereq: ART 282.

ART 390: 4 s.h.**Independent Study**

Independent Study Offered at Franklin and Marshall

ART 391: 3 s.h.**Fine Art Metals: Casting (G1)**

Continued development of individual artistic expression in jewelry and metals with the emphasis on artistic inventiveness and personal style. Covers lost wax casting for jewelry scale work, alternative casting methods, mold making, chain making and marriage of metals. Critical analysis and evaluation of jewelry and metal art are central to the course. Offered in fall and spring. Prereq: ART 291.

ART 396: 3 s.h.**Ceramics 3**

Development of the student's own investigation of material and means of self expression using ceramic materials and processes. An in-depth study related to the work being produced. Prereq: ART 297.

ART 400: 3-12 s.h.**Co-Op Ed Experience in Art**

Co-Op Ed Experience in Art

ART 403: 3 s.h.**Northern Renaissance**

An in-depth study of Flemish, Dutch, Bohemian and German painting from the 14th through 16th centuries. Offered periodically. Prereq: ART 202 or by permission of instructor.

ART 403H: 3 s.h.**Hnrs:The Northern Renaissance**

Hnrs:The Northern Renaissance

ART 404: 3 s.h.**Contemporary Movements in Art (G1, W)**

An in-depth study of the contemporary art scene, including an exploration of its cultural and historical roots. Prereq: ENGL 110 and ART 203 or permission of instructor.

ART 406: 3 s.h.**Interm Photography: Darkroom**

Intermediate photography course with an emphasis on fine art, self-expression and creating a body of work, including color techniques, black and white techniques, studio lighting techniques, making enlargements, presenting prints for display. Covers criticism, history and analysis. Students must have a 35mm single-lens reflex film camera with fully manual focusing/exposure capabilities. Offered fall, spring. Prereq: ART 306 or permission of instructor.

ART 409: 3 s.h.**Advanced Photography**

Advanced photography course with an emphasis on fine art, self-expression and creating a long-term body of work, including color techniques, black and white techniques, studio lighting techniques, digital techniques, making enlargements and presenting prints for display. Covers criticism, history and analysis. Students must have a 35mm single-lens reflex film or digital camera. Offered fall, spring. Prereq: ART 406 or permission of instructor.

ART 410: 3 s.h.**Interm Photography: Digital**

Digital course with a focus on fine art, including operation of camera, using Adobe Photoshop software, editing images, outputting images, making prints and matting prints for display. Covers criticism, history and analysis. Students should have a digital single-lens reflex camera. Loan cameras are also available. Offered spring. Prereq: ART 142, 306.

ART 431: 4 s.h.**Politics of Gndr in Contmp Art**

Politics of Gndr in Contmp Art Offered at Franklin and Marshall

ART 433: 3 s.h.**Drawing 4**

Advanced drawing in which individual style and technique are emphasized. An intensive course of independent research including creation of a portfolio. Prereq: ART 333. Offered periodically.

ART 445: 3 s.h.**Advanced Computer Art**

Offered in fall and/or spring. Prereq: ART 345.

ART 452: 3 s.h.**Painting 3**

Further study in painting as the individual student works toward developing a personal idiom of expression. Offered in fall and spring. Prereq: ART 354 or permission of instructor.

ART 454: 3 s.h.**Painting 4**

An advanced course in which students continue to develop style and technique as they seek their own direction in painting. Offered in fall and spring. Prereq: ART 452 or permission of instructor.

ART 463: 3 s.h.**Lithography Printmaking 2**

Explores multiple approaches to creating color lithography prints. A continuation of Lithography Printmaking I, this course technically builds with each new process into an advanced understanding and working knowledge of the process. Uses stone lithography, plate lithography, and waterless lithography to explore printed color and individual investigations into artmaking. Offered periodically. Prereq: ART 363.

ART 464: 3 s.h.**Relief Printmaking 2**

Builds on the information presented in Relief Print-making I. Starts at an intermediate level technically and builds with each process into an advanced understanding and working knowledge of the process. Covers linocut, woodcut, alternative relief matrices, color reduction, large format, mixed media, relief monoprinting, and multiple block relief printing. Students will be expected to develop a cohesive body of works from the projects and a personal investigation into artmaking. Offered periodically. Prereq: ART 364.

ART 465: 3 s.h.**Intaglio Printmaking 2**

Explores multiple approaches to creating intaglio prints. Builds on the techniques in Intaglio Printmaking I and builds into an advanced understanding and working knowledge of the process. Covers sugar lift, white ground, toner transfers, spitbite, versacel, collograph solar plates, chine colle, ala poupee inking, monoprinting, and multiple plate color printing. Offered periodically. Prereq: ART 365.

ART 467: 3 s.h.**Water Based Silkscreen 2**

Explores multiple approaches to creating water-based silkscreen prints. Starts technically with the information presented in Water-based Silkscreen I and builds into an advanced understanding and working knowledge of the process. Covers variations on previous stencil preparations and printing including large format, mixed media, and monoprinting. A strong focus will be on the application of the process to develop a body of work based on a personal investigation into artmaking. Offered periodically. Prereq: ART 367.

ART 468: 3 s.h.**Mixed Media Printmaking**

Explores the strengths of multiple printmaking techniques to create editions of color prints. Utilizes information previously covered in any of the 300-level printmaking courses. Starts at an intermediate technical level and builds into an advanced understanding and working knowledge of the printmaking process. Covers monoprinting, chine colle, collage, relief samples, electrostatic printmaking, solar plate etching, waterless lithography, hand coloring, and color printing. Offered periodically. Prereq: 300-level printmaking course.

ART 469: 3 s.h.**Contemp Issues in Printmaking**

Explores current trends, conceptual applications and contemporary formats surrounding printmaking. Utilizes information previously covered in any of the 300-level printmaking courses as the base for additional techniques and to build a working knowledge of printmaking. Starts at an intermediate technical level and builds into an advanced understanding and working knowledge of the processes. Covers artist's books, mail art, nontraditional surfaces, computer applications for traditional prints, mixed media prints, and discusses commercial processes and their application in fine art. Offered infrequently. Prereq: 300-level printmaking course.

ART 476: 3 s.h.**Picturing the Body (G1)**

Explore the role photography plays in constructing and representing the human form, with an emphasis on visual thinking, self-expression and creating a body of work. Includes studio-lighting techniques, working with Adobe Photoshop software, making prints, image sequencing, criticism, and presenting images for display. Topics include: beauty, self portraiture, street photography, studio portraiture, environmental portraiture, body image, and the nude. Intermediate level. Offered periodically.

ART 477: 3 s.h.**Photography as Narrative (G1)**

Explore the way photographs have been used to construct narratives that shape our understanding of ourselves and the world around us, with an emphasis on visual thinking, self-expression and creating a body of work. Includes image editing, image sequencing, criticism, studio-lighting techniques, working with Adobe Photoshop software, making prints, and presenting images for display. Topics include: selecting a subject, the photo essay, staged photography, incorporating text, and the single image narrative. Intermediate level. Offered periodically.

ART 478: 3 s.h.**Documentary Photography (G1)**

Explores documentary photography with an emphasis on people and place, visual storytelling, self-expression, and developing a long-term documentary project. Includes studio-lighting techniques, working with photo-editing software, image sequencing, criticism, and presenting images for display. Topics include: Portraiture, Street Photography, Community Building, and the Photo Series. Offered periodically.

ART 479: 3 s.h.**Experimental**

Experimental

ART 482: 3 s.h.**Sculpture 3**

Covers further study in sculpture. Students work toward developing a personal idiom of expression. Offered fall, spring. Prereq: ART 382.

ART 483: 3 s.h.**Sculpture 4**

Advanced study in sculpture. Student continues to develop style and technique while discovering personal artistic direction. Offered in fall and spring. Prereq: ART 482.

ART 486: 3 s.h.**Sp Topics:**

Repeatable to 6 credits if topics vary. Prereq: ART 242, junior or senior standing.

ART 488: 3 s.h.**Topics in Art History (G1, W)**

Offered periodically. This course examines special topics in art history. Prereq: ART 202 or 203 and ENGL 110.

ART 489: 1-4 s.h.**Honors Course**

Honors Course

ART 490: 3 s.h.**Beyond Making Art for Success (W)**

This course explores strategies for success in the fine art world beyond the college classroom and prepares students to tackle the business aspects of a fine art career. Students will build their formal portfolio, conduct an exhibition of their work, and learn standard arts business practices such as exhibiting work, networking, advertising, branding, marketing, and self-promotion. Entrepreneurial practice is utilized while students learn to write professional materials while building an online presence.

ART 491: 3 s.h.**Fine Art Metals: Form Emphasis**

Further study of jewelry and metals as an art form in which the student is encouraged to develop an original aesthetic style while exploring and employing advanced technical processes. Covers forming non-ferrous metals using techniques such as anticlastic and sinclastic forming, raising, fold forming, chasing and repousse and tool making. Projects will focus on creating volume using these various techniques. Problem solving and critical analysis are emphasized in this course along with professional practices and portfolio development. Offered in fall. Prereq: ART 391.

ART 492: 3 s.h.**Advanced Fine Art Metal/Jewelry**

Advanced study in jewelry and metals in which the student continues to develop style and techniques while discovering personal artistic direction. Covers techniques including surface embellishment, filigree, stonemaking, and mechanisms to be used as tools for aesthetic expression. Expands student awareness of historical and contemporary jewelry/metal work while incorporating concept with craft. Problem solving and critical analysis are emphasized in this course, along with professional practices and portfolio development. Offered in spring. Prereq: ART 391.

ART 494: 3 s.h.**Studio Capstone:**

A capstone studio seminar that focuses on a rotating theme. Studio assignments are used to encourage creative problem solving and intellectual risk taking to create a range of solutions using different artistic media. Students will be presented with challenging ideas, historical precedents, theory and contemporary artistic approaches related to the selected theme.

ART 497: 3 s.h.**Ceramics 4**

Advanced study in ceramics in which students continue to develop ideas, techniques and style as they pursue their own artistic direction. Prereq: ART 396.

ART 497H: 3 s.h.**H: Ceramics 4****ART 498: 1-3 s.h.****Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

ART 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

ART 500: 3-12 s.h.**Co-Op Ed Experience in Art**

Co-Op Ed Experience in Art

Art Education, B.S.Ed.

Millersville University's Art Education program will cultivate your passion for art and prepare you to share that passion with others. The program, which culminates in a Bachelor of Science in Education degree, is designed for students who aspire to become art teachers. Upon completion, you will be eligible for certification to teach students grades K-12 in the state of Pennsylvania. With Pennsylvania's high standards for teacher preparation, graduates from MU's Art Education program are recruited both regionally and nationally.

Major in Art Education, BSE

Code	Title	Hours
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Credits Required for Major

true

Minimum Residency 50% of Major Courses

true

Minimum GPA 2.0 for Major

true

REQUIRED ART DESIGN COURSES

ART 133	Drawing 1	3
ART 233	Drawing 2	3
ART 142	2D Design	3
ART 242	3D Design	3

REQUIRED ART EDUCATION COURSES

ART 221	Introduction to Art Education	3
ART 324	Designing Meaningful Art Education Experiences	3
ART 325	Methodology and Pedagogy of Art	3

ART HISTORY REQUIRED COURSES

ART 202	Survey of Art History 1: Prehistoric to c 1400	3
ART 203	Survey Art History 2: 1400 through 20th Century	3

ADDITIONAL ART HISTORY

undefined - Choose 2 of the following: 6-12

ART 201	History and Aesthetics of Photography	
ART 301	The Ancient World	
ART 302	The Italian Renaissance	
ART 303	The 19th Century	
ART 304	The 20th Century	
ART 305	Women in Art	
ART 313	Art in America	
ART 403	Northern Renaissance	
ART 404	Contemporary Movements in Art	
ART 588	Art Hist Top:	
ART 589	Topics In Art History	
DESN 307	Visual Communication Design History	

REQUIRED STUDIO ART COURSES

Ceramics: Handbuilding or Ceramics: Wheel Throwing - Choose 1 of the following: 3

ART 295	Ceramics:Hand Building	
ART 296	Ceramics:Wheel Throwing	

ART 352 Painting 1 3

ART 361 Survey Printmaking 1 3

Sculpture I or Fine Art Metals I - Choose 1 of the following: 3

ART 282	Sculpture 1	
ART 291	Intro: Fine Art Metals/Jewelry	

Photography or Typography - Choose 1 of the following: 3

ART 167	Experimental Photography	
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ART 306	Intro Photography: Darkroom	
ART 376	Intro to Photo: Digital	
DESN 240	Typography I	

ART STUDIO ELECTIVES - 12 CREDITS MINIMUM

undefined - Choose 12 hours from: 12

ART 333	Drawing 3	
ART 352	Painting 1	
ART 353	Watercolor 1	
ART 354	Painting 2	
ART 355	Watercolor 2	
ART 433	Drawing 4	
ART 452	Painting 3	
ART 454	Painting 4	
ART 533	Drawing	
ART 534	Drawing	
ART 552	Painting	
ART 554	Painting	
ART 553	Watercolor	
ART 555	Water Color and Related Media	
ART 167	Experimental Photography	
ART 306	Intro Photography: Darkroom	
ART 376	Intro to Photo: Digital	
ART 406	Interm Photography: Darkroom	
ART 409	Advanced Photography	
ART 410	Interm Photography:Digital	
ART 567	Advanced Photography 2	
ART 361	Survey Printmaking 1	
ART 363	Lithography Printmaking 1	
ART 364	Relief Printmaking 1	
ART 365	Intaglio Printmaking 1	
ART 367	Water Based Silkscreen 1	
ART 368	Collage	
ART 463	Lithography Printmaking 2	
ART 464	Relief Printmaking 2	
ART 465	Intaglio Printmaking 2	
ART 467	Water Based Silkscreen 2	
ART 468	Mixed Media Printmaking	
ART 469	Contemp Issues in Printmaking	
ART 563	Printmaking	
ART 564	Printmaking	
ART 282	Sculpture 1	
ART 291	Intro: Fine Art Metals/Jewelry	
ART 382	Sculpture 2	
ART 482	Sculpture 3	
ART 483	Sculpture 4	
ART 582	Sculpture	
ART 583	Sculpture	
ART 140	Digital Foundations of Art	
DESN 144	Digital Theory and Skills	
DESN 240	Typography I	
DESN 244	Typography 2	
DESN 246	Intro Sequence/Motion/Vis Comm	

DESN 247	Intro to Web, Experience and Interaction Design
DESN 340	Interaction Design
DESN 341	Motion Design
DESN 342	Kinetic Design and Animation
DESN 343	Experience Design
DESN 344	Visual Communication and Graphics Design 1
ART 345	Introduction to Computer Art
DESN 347	Design for Social Equity
DESN 348	Packaging in Design
DESN 349	Information Design
DESN 375	Illustration
DESN 444	Vis Comm and Graphcs Design 2
ART 445	Advanced Computer Art
DESN 446	Advanced Computers In Design
DESN 447	Advanced Web Design
DESN 493	Capstone: Portfolio
DESN 225	Visual Storytelling and Comics
DESN 332	Material Design
ART 295	Ceramics:Hand Building
ART 296	Ceramics:Wheel Throwing
ART 297	Ceramics 2
ART 396	Ceramics 3
ART 497	Ceramics 4
ART 596	Ceramics
ART 597	Ceramics
ART 291	Intro: Fine Art Metals/Jewelry
ART 391	Fine Art Metals: Casting
ART 491	Fine Art Metals: Form Emphasis
ART 492	Advandc Fine Art Metal/Jewelry
ART 591	Fine Art Metals
ART 592	Fine Art Metals
ART 486	Sp Topics:

Select an additional 12 credits of studio courses from any of the studio areas. Courses in excess of the 12 credit minimum will apply and will count toward major credits and major GPA. Speak to your advisor about options and click here to access the web schedule of courses in the ART department.

Total Hours **60-66**

Professional Education

Code	Title	Hours
EDUCATIONAL FOUNDATIONS		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
ACCOMMODATIONS AND ADAPTATIONS		
EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3
STUDENT TEACHING		
EDSE 471	Student Teaching Seminar	3
Student Teaching		9

EDAR 461	Elem Stu Tch: Art
Total Hours	24

Req Related for Art Education

Code	Title	Hours
Required Related Credits		
true		
PSYC 100	General Psychology	3
PSYC 227	Development of the Child and Adolescent	3
Total Hours		6

Advanced Professional Studies, BSE

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		

APS REQUIREMENTS

English Composition - Choose 1 of the following:		3
ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211	Foundations Modern Education	6
& EDFN 241	and Psychological Foundations of Teaching	
48 earned (transcript) credit hours are required		
APS registration status		
You ARE NOT eligible to register for courses requiring APS status.		
ACT 126 - Educator Ethics Training		

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. [Click here for the application.](#)

Total Hours **12**

Art History Minor

The Art History minor is designed for the student who wishes to pursue courses in art history in addition to those in his/her major field. Students learn the significance and influence of art history in historical works and in contemporary works. Classes range from pre-historic, medieval, and Renaissance art to the 19th and 20th centuries as well as contemporary movements in art. Students will be encouraged to participate in study abroad, internships, and extracurricular activities. These experiences will allow students to gain valuable real-world knowledge that lasts long after graduation.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.

3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Art, B.A.

This BA in Art is a traditional liberal arts degree, which allows students to develop intellectual and creative strengths and plan for future careers within the visual arts and creative fields. Individuals in this degree program develop their skills and knowledge through selected courses in general education, studio art, and art history. Students can explore a wide range of minors including Business (Marketing), Industry and Technology (Printing Industry), and Psychology.

Major in Art, BA

Code	Title	Hours
REQUIRED ART DESIGN COURSES		
ART 133	Drawing 1	3
ART 142	2D Design	3
ART 242	3D Design	3
REQUIRED ART HISTORY		
Survey of Art History I or II - Choose 1 of the following:		3
ART 202	Survey of Art History 1: Prehistoric to c 1400	
ART 203	Survey Art History 2: 1400 through 20th Century	
Art History Course - Choose 1 of the following:		3-6
ART 201	History and Aesthetics of Photography	
ART 301	The Ancient World	
ART 302	The Italian Renaissance	
ART 303	The 19th Century	
ART 304	The 20th Century	
ART 305	Women in Art	
ART 313	Art in America	
ART 403	Northern Renaissance	
ART 404	Contemporary Movements in Art	
ART 587	Topics In Art Education	
ART 588	Art Hist Top:	
DESN 307	Visual Communication Design History	
STUDIO COURSES (Minimum 9 Credits)		
undefined - Choose 3 of the following:		9
Choose 1 course from 3 of the following 9 sets)		
Set 1 - Painting Watercolor - See Appendix 1		
Set 2- Photography - See Appendix 2		
Set 3- Printmaking - See Appendix 3		
Set 4 - Ceramics - See Appendix 4		
Set 5 - Fine Art Metals - See Appendix 5		
Set 6 - Sculpture - See Appendix 6		
Set 7 - Interactive Graphic Design - See Appendix 7		
Set 8 - Convergent Art - See Appendix 8		
Set 9 - Drawing - See Appendix 9		

UPPER LEVEL COURSE		
undefined - Choose 1 of the following:		3
ART 297	Ceramics 2	
ART 333	Drawing 3	
ART 354	Painting 2	
ART 382	Sculpture 2	
ART 391	Fine Art Metals: Casting	
ART 476	Picturing the Body	
ART 477	Photography as Narrative	
ART 478	Documentary Photography	
ART 463	Lithography Printmaking 2	
ART 464	Relief Printmaking 2	
ART 465	Intaglio Printmaking 2	
ART 467	Water Based Silkscreen 2	
DESN 343	Experience Design	
DESN 344	Visual Communication and Graphics Design 1	
DESN 346	Intro to Computers in Design	
DESN 347	Design for Social Equity	
DESN 348	Packaging in Design	
DESN 349	Information Design	
DESN 375	Illustration	

Take one course at the second level of a studio discipline

CAPSTONE COURSE		
undefined - Choose 1 of the following:		3
ART 490	Beyond Makng Strat for Success	
ART 494	Studio Capstone:	
DESN 493	Capstone: Portfolio	

OTHER ART ELECTIVES		
undefined - Choose 18 hours from:		18
Any ART course(s)		
Any DESN course(s)		
Note: This requirement may not be satisfied with ART 100 or ART 141.		
ART electives needed to total 48 in the major. Any ART courses taken in excess of 48 will be listed here and count toward major GPA. ART 100 141 DO NOT Count in the ART major.		

Total Hours 48-51

Appendix 1. Set 1 - Painting & Watercolor

Code	Title	Hours
undefined - Choose 1 of the following:		
ART 352	Painting 1	3
ART 353	Watercolor 1	
ART 354	Painting 2	
ART 355	Watercolor 2	
ART 452	Painting 3	
ART 454	Painting 4	

Appendix 2. Set 2- Photography

Code	Title	Hours
undefined - Choose 1 of the following:		
ART 167	Experimental Photography	3
ART 306	Intro Photography: Darkroom	

ART 376	Intro to Photo: Digital	
ART 406	Interm Photography: Darkroom	
ART 409	Advanced Photography	
ART 410	Interm Photography:Digital	
ART 567	Advanced Photography 2	

Appendix 3. Set 3- Printmaking

Code	Title	Hours
undefined - Choose 1 of the following:		
ART 361	Survey Printmaking 1	3
ART 363	Lithography Printmaking 1	
ART 364	Relief Printmaking 1	
ART 365	Intaglio Printmaking 1	
ART 367	Water Based Silkscreen 1	
ART 463	Lithography Printmaking 2	
ART 464	Relief Printmaking 2	
ART 467	Water Based Silkscreen 2	
ART 468	Mixed Media Printmaking	
ART 469	Contemp Issues in Printmaking	

Appendix 4. Set 4 - Ceramics

Code	Title	Hours
undefined - Choose 1 of the following:		
ART 295	Ceramics:Hand Building	3
ART 296	Ceramics:Wheel Throwing	
ART 297	Ceramics 2	
ART 396	Ceramics 3	
ART 497	Ceramics 4	

Appendix 5. Set 5 - Fine Art Metals

Code	Title	Hours
undefined - Choose 1 of the following:		
ART 291	Intro: Fine Art Metals/Jewelry	3
ART 391	Fine Art Metals: Casting	
ART 491	Fine Art Metals: Form Emphasis	
ART 492	Advandc Fine Art Metal/Jewelry	

Appendix 6. Set 6 - Sculpture

Code	Title	Hours
undefined - Choose 1 of the following:		
ART 282	Sculpture 1	3
ART 382	Sculpture 2	
ART 482	Sculpture 3	
ART 483	Sculpture 4	

Appendix 7. Set 7 - Interactive & Graphic Design

Code	Title	Hours
undefined - Choose 1 of the following:		
DESN 144	Digital Theory and Skills	3
DESN 225	Visual Storytelling and Comics	
DESN 240	Typography I	
DESN 244	Typography 2	
DESN 246	Intro Sequence/Motion/Vis Comm	

DESN 247	Intro to Web, Experience and Interaction Design
DESN 332	Material Design
DESN 340	Interaction Design
DESN 341	Motion Design
DESN 342	Kinetic Design and Animation
DESN 343	Experience Design
DESN 347	Design for Social Equity
DESN 348	Packaging in Design
DESN 349	Information Design
DESN 375	Illustration
DESN 444	Vis Comm and Graphcs Design 2
DESN 446	Advanced Computers In Design
DESN 447	Advanced Web Design

Appendix 8. Set 8 - Convergent Art

Code	Title	Hours
undefined - Choose 1 of the following:		3
ART 140	Digital Foundations of Art	
ART 345	Introduction to Computer Art	
ART 331	Book Arts	
ART 445	Advanced Computer Art	
ART 368	Collage	

Appendix 9. Set 9 - Drawing

Code	Title	Hours
undefined - Choose 1 of the following:		3
ART 233	Drawing 2	
ART 333	Drawing 3	
ART 433	Drawing 4	

Art, B.F.A.

Due to the extensive preparation, this degree is considered the "professional" art degree and prepares students to pursue a career or establish their own businesses in art. Graduates may sell their work through various art and craft show circuits, open their own galleries, accept freelance work for clients, or start their own graphic design agencies. Additionally, this program prepares students who wish to continue their education and acquire MA (Master of Art) or MFA (Master of Fine Art).

Major in Art, BFA

Code	Title	Hours
REQUIRED ART DESIGN COURSES		21
ART 133	Drawing 1	
ART 233	Drawing 2	
ART 333	Drawing 3	
ART 142	2D Design	
ART 242	3D Design	
ART 202	Survey of Art History 1: Prehistoric to c 1400	
ART 203	Survey Art History 2: 1400 through 20th Century	
ART HISTORY - Choose 2 of the following:		6-12
ART 201	History and Aesthetics of Photography	
ART 301	The Ancient World	
ART 302	The Italian Renaissance	

ART 303	The 19th Century
ART 304	The 20th Century
ART 305	Women in Art
ART 313	Art in America
ART 403	Northern Renaissance
ART 404	Contemporary Movements in Art
ART 588	Art Hist Top:
ART 589	Topics In Art History
DESN 307	Visual Communication Design History

STUDIO COURSES - Choose 5 of the following: 15

ART 486	Topics can be included in an area if applicable.
Painting Watercolor - See Appendix 1	
Photography - See Appendix 2	
Printmaking - See Appendix 3	
Sculpture - See Appendix 4	
Graphic/Interactive Design - See Appendix 5	
Ceramics - See Appendix 6	
Fine Art Metals - See Appendix 7	
Convergent Art - See Appendix 8	
Drawing - See Appendix 9	

STUDIO CONCENTRATION - See separate block

REQUIRED SEMINAR OR CAPSTONE COURSE - Choose 1 of the following: 3

ART 490	Beyond Makng Strat for Success
DESN 493	Capstone: Portfolio
ART 494	Studio Capstone:

60-75 CREDIT BFA PORTFOLIO REVIEW NEEDED

During the semester following the completion of 60 credits, a BFA student must participate in a Portfolio Review for continuance in the BFA Degree Program. Failure to do so may result in suspension from the program.

BFA PROFESSIONAL PORTFOLIO SENIOR EXHIBITION NEEDED

For completion of the major, BFA students must successfully complete the BFA Professional Portfolio Slides and a BFA Senior Exhibition.

Art Electives - Choose 5 classes from:

Any ART course(s)	
Any DESN course(s)	
Note: This requirement may not be satisfied with ART 100 or ART 141.	

ART electives needed to total 75 in the major. Any ART courses taken in excess of 75 will be listed here and count toward major GPA.

Total Hours 45-51

Appendix 1. Painting & Watercolor

Code	Title	Hours
undefined - Choose 1 of the following:		3
ART 352	Painting 1	
ART 353	Watercolor 1	
ART 354	Painting 2	
ART 355	Watercolor 2	
ART 452	Painting 3	
ART 454	Painting 4	

ART 552	Painting
ART 554	Painting
ART 553	Watercolor
ART 555	Water Color and Related Media

Appendix 2. Photography

Code	Title	Hours
undefined - Choose 1 of the following:		3
ART 167	Experimental Photography	
ART 306	Intro Photography: Darkroom	
ART 376	Intro to Photo: Digital	
ART 406	Interm Photography: Darkroom	
ART 409	Advanced Photography	
ART 410	Interm Photography: Digital	
ART 476	Picturing the Body	
ART 477	Photography as Narrative	
ART 478	Documentary Photography	
ART 567	Advanced Photography 2	

Appendix 3. Printmaking

Code	Title	Hours
undefined - Choose 1 of the following:		3
ART 361	Survey Printmaking 1	
ART 363	Lithography Printmaking 1	
ART 364	Relief Printmaking 1	
ART 365	Intaglio Printmaking 1	
ART 367	Water Based Silkscreen 1	
ART 368	Collage	
ART 463	Lithography Printmaking 2	
ART 464	Relief Printmaking 2	
ART 465	Intaglio Printmaking 2	
ART 467	Water Based Silkscreen 2	
ART 468	Mixed Media Printmaking	
ART 469	Contemp Issues in Printmaking	
ART 563	Printmaking	
ART 564	Printmaking	

Appendix 4. Sculpture

Code	Title	Hours
undefined - Choose 1 of the following:		3
ART 282	Sculpture 1	
ART 382	Sculpture 2	
ART 482	Sculpture 3	
ART 483	Sculpture 4	
ART 582	Sculpture	
ART 583	Sculpture	

Appendix 5. Graphic/Interactive Design

Code	Title	Hours
undefined - Choose 1 of the following:		3
ART 140	Digital Foundations of Art	
DESN 144	Digital Theory and Skills	
DESN 225	Visual Storytelling and Comics	

DESN 240	Typography I
DESN 244	Typography 2
DESN 246	Intro Sequence/Motion/Vis Comm
DESN 247	Intro to Web, Experience and Interaction Design
DESN 332	Material Design
DESN 340	Interaction Design
DESN 341	Motion Design
DESN 342	Kinetic Design and Animation
DESN 343	Experience Design
DESN 344	Visual Communication and Graphics Design 1
DESN 347	Design for Social Equity
DESN 348	Packaging in Design
DESN 349	Information Design
DESN 375	Illustration
DESN 444	Vis Comm and Graphcs Design 2
DESN 446	Advanced Computers In Design
DESN 447	Advanced Web Design
DESN 493	Capstone: Portfolio

Appendix 6. Ceramics

Code	Title	Hours
undefined - Choose 1 of the following:		3
ART 295	Ceramics: Hand Building	
ART 296	Ceramics: Wheel Throwing	
ART 297	Ceramics 2	
ART 396	Ceramics 3	
ART 497	Ceramics 4	
ART 596	Ceramics	
ART 597	Ceramics	

Appendix 7. Fine Art Metals

Code	Title	Hours
undefined - Choose 1 of the following:		3
ART 291	Intro: Fine Art Metals/Jewelry	
ART 391	Fine Art Metals: Casting	
ART 491	Fine Art Metals: Form Emphasis	
ART 492	Advand Fine Art Metal/Jewelry	
ART 591	Fine Art Metals	
ART 592	Fine Art Metals	

Appendix 8. Convergent Art

Code	Title	Hours
undefined - Choose 1 of the following:		3
ART 140	Digital Foundations of Art	
ART 331	Book Arts	
ART 345	Introduction to Computer Art	
ART 368	Collage	
ART 445	Advanced Computer Art	
ART 494	Studio Capstone:	

Appendix 9. Drawing

Code	Title	Hours
undefined - Choose 1 of the following:		3
ART 433	Drawing 4	
ART 533	Drawing	
ART 534	Drawing	

BFA Studio Concentration

Code	Title	Hours
STUDIO ART CONCENTRATION - Choose 1 of the following:		15
ART 486 Topics can be included in an area if applicable.		
Painting Watercolor - See Appendix 1		
Photography - See Appendix 2		
Printmaking - See Appendix 3		
Sculpture - See Appendix 4		
Graphic/Interactive Design - See Appendix 5		
Ceramics - See Appendix 6		
Fine Art Metals - See Appendix 7		
Convergent Art - See Appendix 8		
Drawing - See Appendix 9		
Total Hours		15

Appendix 1. Painting & Watercolor

Code	Title	Hours
undefined - Choose 15 hours from:		15
ART 352	Painting 1	
ART 353	Watercolor 1	
ART 354	Painting 2	
ART 355	Watercolor 2	
ART 452	Painting 3	
ART 453		
ART 552	Painting	
ART 554	Painting	
ART 553	Watercolor	
ART 555	Water Color and Related Media	
ART 486	Sp Topics: (Sp Top: Raw to Refined Paintig)	

Appendix 2. Photography

Code	Title	Hours
undefined - Choose 15 hours from:		15
ART 167	Experimental Photography	
ART 306	Intro Photography: Darkroom	
ART 376	Intro to Photo: Digital	
ART 406	Interm Photography: Darkroom	
ART 409	Advanced Photography	
ART 410	Interm Photography: Digital	
ART 476	Picturing the Body	
ART 477	Photography as Narrative	
ART 478	Documentary Photography	
ART 567	Advanced Photography 2	

Appendix 3. Printmaking

Code	Title	Hours
undefined - Choose 15 hours from:		15
ART 361	Survey Printmaking 1	
ART 363	Lithography Printmaking 1	
ART 364	Relief Printmaking 1	
ART 365	Intaglio Printmaking 1	
ART 367	Water Based Silkscreen 1	
ART 368	Collage	
ART 463	Lithography Printmaking 2	
ART 464	Relief Printmaking 2	
ART 465	Intaglio Printmaking 2	
ART 467	Water Based Silkscreen 2	
ART 468	Mixed Media Printmaking	
ART 469	Contemp Issues in Printmaking	
ART 563	Printmaking	
ART 564	Printmaking	

Appendix 4. Sculpture

Code	Title	Hours
undefined - Choose 15 hours from:		15
ART 282	Sculpture 1	
ART 382	Sculpture 2	
ART 482	Sculpture 3	
ART 483	Sculpture 4	
ART 582	Sculpture	
ART 583	Sculpture	

Appendix 5. Graphic/Interactive Design

Code	Title	Hours
undefined - Choose 15 hours from:		15
DESN 144	Digital Theory and Skills	
DESN 240	Typography I	
DESN 244	Typography 2	
DESN 246	Intro Sequence/Motion/Vis Comm	
DESN 247	Intro to Web, Experience and Interaction Design	
DESN 340	Interaction Design	
DESN 341	Motion Design	
DESN 342	Kinetic Design and Animation	
DESN 343	Experience Design	
DESN 344	Visual Communication and Graphics Design 1	
ART 345	Introduction to Computer Art	
DESN 347	Design for Social Equity	
DESN 348	Packaging in Design	
DESN 349	Information Design	
DESN 375	Illustration	
DESN 444	Vis Comm and Graphics Design 2	
DESN 446	Advanced Computers In Design	
DESN 447	Advanced Web Design	
DESN 493	Capstone: Portfolio	
DESN 332	Material Design	

Appendix 6. Ceramics

Code	Title	Hours
undefined - Choose 15 hours from:		15
ART 295	Ceramics:Hand Building	
ART 296	Ceramics:Wheel Throwing	
ART 297	Ceramics 2	
ART 396	Ceramics 3	
ART 497	Ceramics 4	
ART 596	Ceramics	
ART 597	Ceramics	

Appendix 7. Fine Art Metals

Code	Title	Hours
undefined - Choose 15 hours from:		15
ART 291	Intro: Fine Art Metals/Jewelry	
ART 391	Fine Art Metals: Casting	
ART 491	Fine Art Metals: Form Emphasis	
ART 492	Advancd Fine Art Metal/Jewelry	
ART 591	Fine Art Metals	
ART 592	Fine Art Metals	

Appendix 8. Convergent Art

Code	Title	Hours
undefined - Choose 15 hours from:		15
ART 140	Digital Foundations of Art	
ART 331	Book Arts	
ART 345	Introduction to Computer Art	
ART 368	Collage	
ART 445	Advanced Computer Art	
ART 486	Sp Topics:	
ART 494	Studio Capstone:	

Appendix 9. Drawing

Code	Title	Hours
undefined - Choose 15 hours from:		15
ART 433	Drawing 4	
ART 533	Drawing	
ART 534	Drawing	

Req Related for Bachelor of Fine Arts

Code	Title	Hours
Required Related Course Elective - Choose 1 of the following:		3
COMM 201	Theory of Communication	
COMM 227	Movements & Digital Activism	
THEA 312	Hist/Prncpls of Stage Design	
THEA 340	History of Theatre 1	
ENGL 240	The Art of Film	
ENGL 292	Science Fiction	
ENGL 338	Folklore and Literature	
WRIT 342	Reading/Writing for Civic Chng	
ENGL 482	Film and American Society	
ENGL 483	Politics, Film & Electronic Media	
ENGL 484	Sci Fiction, Technology & Film	

MUSI 100	Music and Culture	
PHIL 327	Philosophy in Film	
PHIL 383	Philosophy of Art	
SSCI 203H	H:Exploratns in Hist of Ideas	
SOCY 307	African-American Social Thought	
ANTH 222	American Indian	
ANTH 227	Culture Through Film	
Total Hours		3

Fine Art Metals Minor

The Fine Art Metals minor gives students an opportunity to develop traditional and contemporary metals and jewelry design skills, conceptual strategies, and problem solving skills in a creative environment. Students will develop a personal design aesthetic and vocabulary through investigation of traditional metal techniques and material processes while creating small sculpture and jewelry.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Fine Art Metals

Code	Title	Hours
ART 242	3D Design	3
Electives in Fine Art Metals - Choose 15 hours from:		15
ART 291	Intro: Fine Art Metals/Jewelry	
ART 391	Fine Art Metals: Casting	
ART 491	Fine Art Metals: Form Emphasis	
ART 492	Advancd Fine Art Metal/Jewelry	
ART 591	Fine Art Metals	
ART 592	Fine Art Metals	
Undergraduates will need permission to enroll in 500-level courses		
Total Hours		18

Interactive and Graphic Design, B.Des.

The department of Art & Design's newest degree, a Bachelor of Design (B.Des.) in Interactive and Graphic Design, was created to keep students on the cusp of this constantly changing and exciting discipline. This program ensures that students are able to keep up with current trends and technological demands in the design industry. Your study will be grounded in courses about design theory, skills, application, and analysis. From there, you can pursue your interests in experience design,

kinetic design, web design, basic coding, interactive design, graphic design, and more. The B.Des. in Interactive & Graphic Design gives our students the skills that most employers are now seeking within the design industry.

Major in Interactive & Graphic Design, BDES

Code	Title	Hours
REQUIRED FOUNDATION COURSES		
ART 133	Drawing 1	3
ART 142	2D Design	3
ART 242	3D Design	3
REQD. INTERACTIVE GRAPHIC DESIGN FOUNDATION COURSES		
DESN 144	Digital Theory and Skills	3
DESN 240	Typography I	3
DESN 244	Typography 2	3
DESN 246	Intro Sequence/Motion/Vis Comm	3
DESN 247	Intro to Web, Experience and Interaction Design	3
DESN 344	Visual Communication and Graphics Design 1	3
ART DESIGN HISTORY COURSES		
ART 203	Survey Art History 2: 1400 through 20th Century	3
DESN 307	Visual Communication Design History	3
Art History Electives - Choose 2 of the following:		6-12
ART 201	History and Aesthetics of Photography	
ART 202	Survey of Art History 1: Prehistoric to c 1400	
ART 301	The Ancient World	
ART 302	The Italian Renaissance	
ART 303	The 19th Century	
ART 304	The 20th Century	
ART 305	Women in Art	
ART 313	Art in America	
ART 403	Northern Renaissance	
ART 404	Contemporary Movements in Art	
ART 587	Topics In Art Education	
ART 588	Art Hist Top:	
REQUIRED INTERACTIVE GRAPHIC DESIGN		
Graphic Design - Choose 3 of the following:		9
DESN 347	Design for Social Equity	
DESN 348	Packaging in Design	
DESN 349	Information Design	
DESN 375	Illustration	
DESN 444	Vis Comm and Graphics Design 2	
DESN 480	Sp Topics in Design	
Interactive Design - Choose 3 of the following:		9
DESN 340	Interaction Design	
DESN 341	Motion Design	
DESN 342	Kinetic Design and Animation	
DESN 343	Experience Design	
DESN 447	Advanced Web Design	
BDES INTERMEDIATE DESIGN REVIEW NEEDED		

During the semester in which 60-75 credits will be complete, a BDES student must submit a Portfolio Review Application for continuance in the BDES Degree Program. Failure to do so may result in suspension from the program.

INTERACTIVE GRAPHIC DESIGN CONCENTRATION ELECTIVES		
undefined - Choose 15 hours from:		15
DESN 225	Visual Storytelling and Comics	
DESN 300	Internship/Co-op in Design	
DESN 332	Material Design	
DESN 340	Interaction Design	
DESN 341	Motion Design	
DESN 342	Kinetic Design and Animation	
DESN 343	Experience Design	
DESN 347	Design for Social Equity	
DESN 348	Packaging in Design	
DESN 349	Information Design	
DESN 375	Illustration	
DESN 444	Vis Comm and Graphics Design 2	
DESN 446	Advanced Computers In Design	
DESN 447	Advanced Web Design	
DESN 480	Sp Topics in Design	
ART 345	Introduction to Computer Art	
ART 445	Advanced Computer Art	
ART 300	Co-Op Ed Experience in Art	
ART 486 Topics can be included as a Design Interactive Elective if the topic is applicable. Please have your advisor notify Degree.Audit@millersville.edu if a topics course is approved.		
CAPSTONE: PORTFOLIO		
DESN 493	Capstone: Portfolio	3
Total Hours		75-81
Req Related for Interactive and Graphic Design		
Code	Title	Hours
Required Related Elective - Choose 1 of the following:		3
COMM 201	Theory of Communication	
COMM 227	Movements & Digital Activism	
THEA 312	Hist/Princpls of Stage Design	
THEA 340	History of Theatre 1	
ENGL 240	The Art of Film	
ENGL 292	Science Fiction	
ENGL 338	Folklore and Literature	
WRIT 342	Reading/Writing for Civic Chng	
ENGL 482	Film and American Society	
ENGL 483	Politics, Film & Electronic Media	
ENGL 484	Sci Fiction, Technology & Film	
MUSI 100	Music and Culture	
PHIL 327	Philosophy in Film	
PHIL 383	Philosophy of Art	
SSCI 203H	H:Exploratsns in Hist of Ideas	
SOCY 307	African-American Social Thought	
ANTH 222	American Indian	
ANTH 227	Culture Through Film	
Total Hours		3

Photography Minor

The Photography minor is designed for the student who wishes to pursue courses in photography in addition to those in his/ her major field. Photo minors will gain a skill set that will not only complement their major but will also add photographic proficiency to their post-academic careers. Since almost every business uses photography in some way, the possibilities for employment are extremely diverse. The Photography minor offers a flexible curriculum that will introduce students to a range of practical experiences in the digital lab, darkroom, studio, and working with people. It will also encourage students to think critically and understand the complexity of photographic images. Students will be encouraged to participate in study abroad, internships, and extracurricular activities. These experiences will allow students to gain valuable real-world knowledge that lasts long after graduation.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Photography

Code	Title	Hours
Drawing I or 2D Design - Choose 1 of the following:		3
ART 133	Drawing 1	
ART 142	2D Design	
ART 201	History and Aesthetics of Photography	3
Photography Electives - Choose 12 hours from:		12
ART 167	Experimental Photography	
ART 306	Intro Photography: Darkroom	
ART 376	Intro to Photo: Digital	
ART 406	Interm Photography: Darkroom	
ART 409	Advanced Photography	
ART 410	Interm Photography: Digital	
ART 476	Picturing the Body	
ART 477	Photography as Narrative	
ART 567	Advanced Photography 2	
Total Hours		18

Studio Art Minor

The Studio minor is designed for the student who wishes to pursue courses in studio art in addition to those in his/ her major field. The Studio Art Minor is also a perfect fit for the Psychology major who is interested in Art Therapy. Students will be encouraged to participate in study abroad, internships, and extracurricular activities. These

experiences will allow students to gain valuable real-world knowledge that lasts long after graduation.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Studio Art

Code	Title	Hours
Credits Required for Minor		
true		
Minimum Residency 50% of minor credits		
true		
Minimum GPA 2.0 for Minor		
true		
2 Courses Must be Upper-Division		
true		
ART 133	Drawing 1	3
2D Design or 3D Design - Choose 1 of the following:		3
ART 142	2D Design	
ART 242	3D Design	
Art History Elective - Choose 1 of the following:		3
ART 201	History and Aesthetics of Photography	
ART 202	Survey of Art History 1: Prehistoric to c 1400	
ART 203	Survey Art History 2: 1400 through 20th Century	
Studio Art Elective - Choose 1 of the following:		3
DESN 144	Digital Theory and Skills	
ART 167	Experimental Photography	
ART 233	Drawing 2	
DESN 240	Typography I	
ART 306	Intro Photography: Darkroom	
ART 282	Sculpture 1	
ART 291	Intro: Fine Art Metals/Jewelry	
ART 295	Ceramics: Hand Building	
ART 296	Ceramics: Wheel Throwing	

ART 352	Painting 1
ART 353	Watercolor 1
ART 361	Survey Printmaking 1
ART 345	Introduction to Computer Art

Art Electives - Choose 2 classes from:

Any ART course(s)
Any DESN course(s)

Total Hours **12**

Communication & Theatre

The Department of Communication and Theatre offers a Bachelor of Science in communication, a Bachelor of Arts in entertainment technology, and a Bachelor of Science in media arts production along with minors in journalism, media arts production, strategic public relations and theatre.

the programs

- Communication, B.S. - Digital Communication and Cultural Studies Concentration (p. 75)
- Communication, B.S. - Journalism Concentration (p. 75)
- Communication, B.S. - Public Relations Concentration (p. 76)
- Communication, B.S. - Theatre Concentration (p. 76)
- Entertainment Technology, B.A. (p. 77)
- Journalism Minor (p. 77)
- Media Arts Production Minor (p. 78)
- Media Arts Production, B.S. (p. 78)
- Media Studies Minor (p. 79)
- Strategic Public Relations Minor (p. 80)
- Theatre Minor (p. 80)

the faculty

Boyer, Adam; Assistant Professor
College of Arts, Humanities and Social Sciences
B.A., The University of Pennsylvania, 2006; M.F.A., University of Iowa, 2009

Boyle, Thomas; Professor
College of Arts, Humanities and Social Sciences
A.A., Harrisburg Area Community College, 1985; B.H., The Pennsylvania State University, 1987; M.A., Ibid., 1989; Ph.D., Ibid., 1998

Chang, Changfu; Professor
College of Arts, Humanities and Social Sciences
B.A., Yancheng Teachers College (China), 1984; M.A., Jiangxi University (China), 1991; Ph.D., Purdue University, 2000

Hughes, Jessica; Assistant Professor
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B.A., University of Boston, 2000; M.A., Lancaster University (United Kingdom), 2004; Ph.D., University of Colorado, 2015

Irwin, Stacey; Professor
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B.A., Salem College, 1987; M.A., Emerson College, 1993; Ph.D., University of Maryland, 2002

Machado, James; Associate Professor
College of Arts, Humanities and Social Sciences

B.A., The College of New Jersey, 1998; M.F.A., City College of New York, 2004

Russell-Loretz, Theresa; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., Marymount College of Kansas, 1979; M.S., Kansas State University, 1984; Ph.D., Purdue University, 1995

Seigworth, Gregory; Professor
College of Arts, Humanities and Social Sciences
B.S., Clarion University, 1982; M.A., Ohio University, 1987; Ph.D., University of Illinois, 1998

Spicer, Robert; Associate Professor
College of Arts, Humanities and Social Sciences
B.S., Millersville University, 2000; M.A., Temple University, 2003; Ph.D., Rutgers University, 2014

Strayer, Jonathan; Assistant Professor
College of Arts, Humanities and Social Sciences
B.S., Clarks Summit University, 2003; M.A., Bowling Green State University, 2004; M.Ed., Clarks Summit University, 2013; M.F.A., University of Idaho, 2019

Wood, Jennifer; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., Rockhurst College, 1988; M.A., Webster University, 1991; Ph.D., Bowling Green State University, 1999

Woodall, Lowery; Associate Professor
College of Arts, Humanities and Social Sciences
B.F.A., Houston State University, 2004; M.S., University of Southern Mississippi, 2007; Ph.D., Ibid., 2012

Yang, Ping; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., Xi'an International Studies University (China), 1995; M.A., Ibid., 2001; M.A., Bowling Green State University, 2004; Ph.D., Arizona State University, 2009

the courses

COMM 100: 3 s.h.

Fundamentals of Speech

Required fundamentals course in general education. An introductory study of the principles of public speaking with particular emphasis upon the selection and organization of information for persuasive purposes. Satisfies competency requirement.

COMM 100H: 3 s.h.

Hrs: Fundamentals of Speech

Required fundamentals course in general education. An introductory study of the principles of public speaking with particular emphasis upon the selection and organization of information for persuasive purposes. Satisfies competency requirement. Offered in fall, spring

COMM 101: 3 s.h.

Introduction to Communication (G1)

Focuses on the role of communication in everyday life. Emphasis on how communication shapes the construction of meaning, the maintenance of community and relationships, and various means of interconnection. Offered in fall, spring.

COMM 121: 3 s.h.**Intro to Media Arts Production**

Audio and video production fundamentals, techniques and uses. Includes study of the production process and hands-on production assignments in both audio and video. Laboratory work required. Offered in fall, winter, spring.

COMM 179: 3 s.h.**Experimental**

Experimental

COMM 201: 3 s.h.**Theory of Communication (G1)**

Focuses on the different approaches to the study of communication as a discipline. Emphasis on both historical and current scholarship in the field through diverse means of inquiry. Prereq: C- or better in COMM 100 and COMM 101

COMM 203: 3 s.h.**Small Group Communication (D, G1, W)**

Emphasis on the theory and practice of small group communication and problem solving. Group formation, teamwork, leadership, decision making in groups, group conflict, digital collaboration, and other concepts will be explored. A collaborative group service learning project and course activities will reinforce course concepts. Offered periodically. Prereq: ENGL 110.

COMM 206: 3 s.h.**Communication and Media Law (G1)**

The legal parameters of freedom of expression under the U.S. legal system. Students explore legal and ethical issues related to media systems, organizational communication, public relations and theatre. Offered in fall or spring.

COMM 217: 3 s.h.**Interpersonal Communication (G1)**

Combines theory and experiential application of interpersonal communication in face-to-face and digital contexts. Provide students with a means to analyze interpersonal relationships and skills to integrate more effective communication strategies in their lives both online and offline. Offered periodically. Prereq: COMM 100.

COMM 220: 3 s.h.**Survey of Media (G1)**

A review of media in America and discussion of the historical, social, cultural, and technological forces that shape them and an evaluation of media criticisms.

COMM 224: 3 s.h.**Organizational Communication 1**

A survey of the major theoretical approaches to the field and applications to specific organizational issues. Explores the scope and history of organizational communication. Offered in fall. Prereq: COMM 201.

COMM 225: 3 s.h.**Nonprofit Sector Communication (G1)**

Explores the design, management and functioning of nonprofit/civil society organizations, with an emphasis on communication theories and processes. Highlights practices unique to these organizations, with an emphasis on enabling students to establish, run and support them. Offered periodically.

COMM 227: 3 s.h.**Movements & Digital Activism (D, G1, W)**

Focuses on the role of digital communication in understanding how commitment and participation, otherness and identity, conflict and cohesiveness intersect in social movement activism. This course surveys the major social movements of the 20th and 21st Century with special attention to their use of communication technologies. Students will research and/or participate in specific social movement organizations of their choosing.

COMM 230: 3 s.h.**International Broadcasting (W)**

Devoted to the cross-cultural study of the World Broadcasting Systems as an introduction to international electronic media. The course compares the ways in which the media are organized in other countries with that of the United States of America. Offered periodically. Prereq: ENGL 110; COMM majors; INTL majors, minors; or permission of instructor.

COMM 251: 3 s.h.**Public Relations I: Intro to Principles & Theory (G1)**

This first of a 4-course sequence covers the history, principles and current practices of public relations. Series must be taken sequentially. Offered in fall, spring.

COMM 279: 3 s.h.**Experimental**

Experimental

COMM 300: 3-12 s.h.**Co-Op Ed Experience in Comm**

Coop/ Internship in Communication

COMM 301: 3 s.h.**Communication Research (W)**

A survey of research methods for the study of problems in communication. Students define a research problem, survey and critique relevant literature, and design a research strategy using various research paradigms. Majors should take this course in the junior year. Prereq: ENGL 110, COMM 201. COMM 201 and COMM 301 may be taken concurrently. However, if COMM 301 is taken after taking COMM 201, a grade of C- or higher is required in COMM 201.

COMM 301H: 3 s.h.**H:Communication Research (W)**

H:Communication Research

COMM 305: 3 s.h.**Business and Professional Communication**

Advanced principles of public speaking in a professional setting. Covers organization and adaptation of speech materials, effective presentation styles, forms of proof. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

COMM 317: 3 s.h.**Intercultural Communication (D, P)**

Explores the possibilities of communication between and among diverse cultures. Close study of cultural codes, symbolic interaction, nonverbal behavior and contexts of intercultural contact. Develops an understanding and appreciation of human diversity and competence in intercultural communication practices. Offered periodically. Prereq: COMM 100, ENGL 110 and junior standing.

COMM 317H: 3 s.h.

Hon: Intercultural Communication (D, P)

COMM 320: 3 s.h.**Radio Production**

Theory and production of various types of audio production using basic studio equipment. Laboratory work required. Offered in fall, spring.

Prereq: COMM 121.

COMM 320H: 3 s.h.**H:Radio Production**

H:Radio Production

COMM 321: 3 s.h.**Television Production**

Theory and application of various phases of studio operation and editing in television production. Laboratory work required. Offered in fall, spring.

Prereq: COMM 121.

COMM 321H: 3 s.h.**Hhrs: TV Production 1****COMM 322: 3 s.h.****Media Aesthetics & Criticism**

Examination and analysis of the processes and products of various media industries, theories, methodologies, and aesthetics, with a focus on understanding and learning to critique the ways in which the media, their texts, and audiences exist within a set of increasingly complex relationships. Prereq: COMM 220, COMM 101, or JRNL 250 (formerly ENGL 250).

COMM 323: 3 s.h.**Producing for Digital Media**

Producing For Digital Media is designed to provide career-ready digital media producing experiences, practicing the many facets of digital content creation for the converged environment including producing in the live television studio, shooting and editing on location, creating in the media production workspace, and publishing to the web. Prereqs: COMM 121 and COMM 321 or COMM 325.

COMM 326: 3 s.h.**Media Writing: News (W)**

Basic news writing and reporting, stressing electronic media. Offered in fall. Prereq: ENGL 110 or permission of instructor.

COMM 327: 3 s.h.**Media Writing: Fiction (W)**

Emphasis on the writing of dramatic scripts with selective production. Offered in spring. Prereq: ENGL 110

COMM 330: 3 s.h.**Media and Women's Culture (D, P)**

The course focuses on the role of the media in the creation and reproduction of culture. It examines how gender, race and class are constructed in media texts, and how women in various social and cultural positions negotiate their own meanings in relation to media portrayals. Offered periodically. Prereq: junior status, COMM 100, ENGL 110.

COMM 333: 3 s.h.**Gender and Communication (D)**

Examines theoretical explanations for the social construction of gendered identity. Considers everyday communication practices and contexts to identify how gender, communication and culture intersect to form the complex matrix of meaning which impacts individuals and society. Prereq: COMM 100, ENGL 110 and junior standing.

COMM 335: 3 s.h.**Comm & Emerging Technologies (G1, W)**

This course focuses on the implications, for individuals and for society as a whole, of the most important new information and communication technologies. Students will acquire an understanding of the role technologies have played in their lives and the impact they have in their future careers.

COMM 337: 3 s.h.**Documentary Film I: Concepts (D)**

Focuses on the history and theory of documentary films. Through readings, screenings, and discussions, the course will provide students with a historical and theoretical understanding of documentary filmmaking and prepare them for more advanced production courses. The students will also explore their own documentary ideas and develop an outline and treatment.

COMM 351: 3 s.h.**Public Relations II: Public Relations Writing (W)**

Hands-on practice in writing news releases for print and broadcast, brochure and newsletter copy, and pitching story ideas to trade editors. Offered in fall, spring. Prereq: COMM 251, ENGL 110.

COMM 371: 3 s.h.**Crisis Emergency & Risk Comm (P)**

This course examines communication challenges faced by public relations practitioners, public information officers, first responders, public health officials, business, government and community benefit leaders, as well as others involved in local, state, and national crisis, emergency, disaster and risk situations. With a focus on appropriate communication message/response strategies and effective use of various communication channels, the course covers theoretical foundations helpful for developing communication plans for pre-, current-, and post-event communication.

COMM 371H: 3 s.h.**Hon: Crisis Emerg & Risk Comm (P)****COMM 379: 3 s.h.****Experimental**

Experimental

COMM 380: 3 s.h.**Digital Media Writing (W)**

Writing and design course focusing on construction of promotional messages for digital media. Students will complete several projects, including critique of publication and web designs; planning and production of print and electronic publications; website writing and layout. Offered in fall, spring. Prereq: ENGL 110 and junior standing.

COMM 390: 3 s.h.**Social Media Campaigns (G1)**

This course emphasizes theory and practice in the strategic planning, writing, communication design, management and analysis of social media campaigns for mobile communications, social media, and online social networking. Prereq: ENGL 110, COMM 100, Junior status (60 credits earned)

COMM 400: 3-12 s.h.**Co-Op Ed Experience in Comm**

Coop/ Internship in Communication

COMM 400H: 3-12 s.h.**Co-Op Ed Experience in Comm**

Honors Co-op/Internship in Communication

COMM 401: 3 s.h.**Critical-Cultural Studies in Communication**

Reciprocal influences of communication on culture and culture on communication. Messages, meanings and culture are approached from several critical standpoints. Prereq: C- or higher in COMM 101, 201 and 301. C- or higher in COMM 401 to count toward fulfilling graduation requirements in the major.

COMM 401H: 3 s.h.**Hnrs: Critical-Cultural Studies in Communication**

Honors Critical-Cultural Studies in Communication

COMM 403: 3 s.h.**Persuasion & Social Media Infl**

Persuasive speaking from both the modern and classical points of view. Introduces students to classic forms and elements of persuasion as well as the latest research in persuasive communication and social media influence, including such issues as digital communication and algorithmic persuasion, celebrity culture, and emotional labor. Examines the function of persuasion in a variety of contexts and analyzes a series of recent public communication events for both their persuasive efficacy and ethics. Offered in fall or spring. Prereq: COMM 301.

COMM 421: 3 s.h.**Advanced Television Production**

An advanced lecture-demonstration-laboratory application of the various phases of electronic field production, with special attention to directing and advanced editing techniques. Offered in spring. Prereq: COMM 321.

COMM 421H: 3 s.h.**Hnrs: TV Production 2****COMM 422: 3 s.h.****Adv Radio Prod: Podcasting**

Provides students with a comprehensive background in all aspects of podcast production. Promotes critical thinking/listening skills and emphasizes advanced level storytelling mechanics. Analysis of best practices for distribution, marketing, monetization, and audience analytics. Lecture/lab course design. Offered periodically. Prereq: COMM 121

COMM 425: 3 s.h.**Broadcast News Reporting**

Style and other basics of radio and television news. Includes collecting data, writing stories, editing and producing video for campus cable TV station. Laboratory work required. Offered in fall. Prereq: COMM 321

COMM 429: 3 s.h.**Topics in Communication**

Content varies. Selected communication perspectives on relevant academic and professional topics examined in depth. Potential topics include: sports communication, argumentation and debate, media entrepreneurship, international public relations, philosophies of communication, new media and culture, power, ideology and discourse. Prereq: Junior status or permission of instructor.

COMM 429H: 3 s.h.**Hon: Special Topics:****COMM 431: 3 s.h.****The Body in Communication (P)**

Focuses on the ways that bodies communicate other than verbally, and how this process of embodied communication plays an active role in our sense of belonging and difference as well as gives shape to the ongoing negotiations between culture and nature. Offered periodically. Prereq: COMM 100, ENGL 110 and junior standing.

COMM 431H: 3 s.h.**HNRS:Body in Communication (P)****COMM 437: 3 s.h.****Documentary Filmmaking II**

This course focuses on the practical and technical aspects of documentary filmmaking. Students will produce their own documentaries that incorporate appropriate approaches and styles as well as advanced storytelling techniques.

COMM 440: 3 s.h.**Leadership and Media**

An introduction to the study and practice of leadership from a media perspective. Particular focus on the relationship between communicating and leading. Examination of leadership concepts and theories in organizational, group and public contexts. Students will analyze their personal leadership styles and develop leadership communication skills through team projects and classroom exercises. Offered periodically. Prereq: junior standing.

COMM 441: 3 s.h.**Political Communication (G1, W)**

Contemporary American political rhetoric focusing on national politics. Content varies. During election years, content includes campaign rhetoric, advertising and debates. In other years, the focus is administrative rhetoric and the interaction of Congress with the President on domestic and foreign affairs. Offered periodically. Prereq: COMM 100, ENGL 110; junior status or permission of instructor.

COMM 450: 3 s.h.**Communication and Conflict (D, P)**

Explores the communicative processes inherent in the development and management of conflict at various social levels. Highlights the various influences on how people manage conflicts at the interpersonal, intercultural, organizational and societal levels with face-to-face and mediated modes of communication. Focuses on specific approaches to managing and resolving conflict, including mediation, negotiation, arbitration, facilitation, and peacebuilding. Offered infrequently. Prereq: COMM 100, ENGL 110, junior standing.

COMM 450H: 3 s.h.**Hnrs: Communication and Conflict (D, P)**

Honors Communication and Conflict

COMM 451: 3 s.h.**Public Relations Issues**

Analysis of various organizations' public relations problems and communicative responses. Third in a 4-course sequence. Offered in fall, spring. Prereq: C or higher in COMM 301, COMM 351 or permission of instructor.

COMM 451H: 3 s.h.**H:Public Relations Issues****COMM 452: 3 s.h.****Public Relations Campaigns**

Hands-on practice in public relations problem solving. Involves work in student-run "agencies" to develop and implement a public relations campaign for a nonprofit organization. Capstone course in public relations. Offered in fall, spring. Prereq: COMM 451.

COMM 461: 3 s.h.**Health Communication (P)**

Focuses on the forms and functions of human interaction in a variety of health care settings, and on the ways that mediated messages promote and reinforce certain health values, beliefs, practices and products. Emphasizes the role of cultural context on the construction and interpretation of health-related messages. Offered periodically. Prereq: COMM 100, ENGL 110, junior standing.

COMM 479: 3 s.h.**Experimental**

Experimental

COMM 480: 3 s.h.**Topics in Media:**

Advanced, innovative or exploratory work in media production or a detailed investigation on a topic of current interest in digital media and broadcasting. Investigation of one or more topics that vary according to needs and interests of students and staff. Offered periodically. May be taken for credit more than once as the topics change. Prereq: COMM 121 and Junior Standing or Instructor Permission.

COMM 489: 1-4 s.h.**Honors Course**

Honors Course

COMM 498: 1-4 s.h.**Independent Study**

For the definition of independent study and student eligibility, refer to the Academic Policies section of this catalog.

COMM 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

COMM 499H: 1-4 s.h.**Hon: Dept Honors****COMM 500: 3-12 s.h.****Co-Op Ed Experience in Comm**

Coop/ Internship in Communication

ENTC 208: 1-3 s.h.**Production Practicum**

Experiential learning through production of entertainment and events. A practical course for live entertainment technicians and designers: Scenic/ Carpentry, Costume/Wardrobe, Properties, Lighting/Electric, Sound/Audio, Video, and other entertainment technology areas. Open to all majors. 1, 2, and 3 credit sections offered regularly. Pre/Co-Req: THEA 120 – Stagecraft. Requires permission of instructor through application or interview.

ENTC 220: 3 s.h.**Theatrical Lighting & Sound**

An introduction to the process of designing lighting and sound for theatre and live entertainment; develops intermediate knowledge, skills, and abilities in related entertainment technologies/equipment through practice. Students are expected to already have a foundational knowledge of entertainment/theatre technology. Prerequisite: THEA 120 - Stagecraft

ENTC 222: 3 s.h.**Vectorworks**

An introduction to the use of Vectorworks software for entertainment and theatre drafting/modeling, and design documentation.

ENTC 300: 3-6 s.h.**Co-op Ed Experience in ENTC**

Co-op/Internship Experience in Entertainment Technology

ENTC 300H: 3-6 s.h.**Hon: Co-op Exp in ENTC****ENTC 313: 3 s.h.****Adv Prod for Live Entertainment**

An advanced study of entertainment rigging, power/data distribution, and specialty systems in entertainment technology. Students develop an understanding of higher-level creative solutions to production in entertainment. Students are expected to have a strong knowledge of entertainment technology and technical theatre. Prerequisites: THEA 120 Stagecraft and THEA/ENTC 220 Lighting & Sound.

ENTC 320: 3 s.h.**Scenic Painting**

The study, exploration and practice of the materials and techniques of applying finishes, textures, decorative painting, and faux finishes as used in theatre, motion pictures, media, productions and architectural applications. Previous art experience is not required

ENTC 400: 3-12 s.h.**Co-op Ed Experience in ENTC**

Co-op/Internship Experience in Entertainment Technology

ENTC 489: 1-4 s.h.**Honors Course**

Honors course for Entertainment Technology

ENTC 495: 3 s.h.**Topics in ENTC**

Advanced and Special Topics in Entertainment Technologies. Topics vary, course may be repeated up to four times under different titles.

ENTC 498: 1-4 s.h.**Independent Study**

Independent Study

ENTC 499: 1-4 s.h.**Thesis Entertainment Technolog**

Thesis in Entertainment Technology

JRNL 250: 3 s.h.**Journalism & Society (G1, W)**

Explores journalism's role in American society by analyzing the problems facing journalists in the realms of politics, law, corporate power and ethics. Prereq: ENGL 110

JRNL 313: 3 s.h.**Fundamentals of Journalism (G1, W)**

Introduction to the craft of journalism and the nuts and bolts of news writing, including story structures, leads, nut graphs, kickers, finding sources and conducting interviews.

JRNL 315: 3 s.h.**Advanced Reporting in a Diverse World (D, W)**

Building on journalism fundamentals, this course calls for students to tackle more in-depth and lengthier reporting projects. The class delves into a wider range of reporting "beats," and places an emphasis on the importance of representation of diverse groups both in stories and in the newsroom.

JRNL 327: 3 s.h.**Feature Writing and Magazine Journalism**

Writing long-form features and enterprise stories, including photography, video and audio content to enhance story presentation on the internet. All original work. Prereq: ENGL 313 or JRNL 313

JRNL 328: 3 s.h.**Ethics in Digital Media Journalism**

Covers ethics of print-media publication. Focuses on the development of ethics in writing and changes in journalistic standards. May include case-study analysis.

JRNL 430: 3 s.h.**Investigative and Computer Assisted Reporting**

Data-driven journalism, looking at the collection of data, analysis in software such as SPSS and the writing of longer-form articles about research. Prereq: ENGL 313 or JRNL 313

THEA 120: 3 s.h.**Stagecraft (G1)**

An introduction to technical theatre. Topics include the construction and handling of scenery, scenic painting, stage lighting, and the proper, safe use of tools and equipment. Offered annually.

THEA 130: 3 s.h.**Acting 1 (G1)**

Training in the art and craft of acting. Emphasis on developing basic skills and exploring the creative process. Elementary scene and monologue work. Offered in fall.

THEA 179: 3 s.h.**Experimental**

Experimental

THEA 208: 1-3 s.h.**Theatre Practicum**

Experiential learning through performance and practice in a mainstage production. A practical course for student actors, performers, directors, choreographers, writers, and stage managers. Open to all majors. 1, 2, & 3 credit sections offered regularly. Pre-req: Permission of instructor through audition or interview.

THEA 217: 3 s.h.**Theatre Appreciation (G1)**

A discussion of the theatre experience for the student with an interest in theatre, including audience perspective, historical influences, and contemporary performance and technical theatre practices. Offered in annually.

THEA 230: 3 s.h.**Acting 2 (G1)**

Further explores the purpose of acting and underlying principles, as well as training voice and body to project characterization. Offered biannually in spring. Prereq: THEA 130 or permission of instructor.

THEA 240: 3 s.h.**Script Analysis (G1)**

The techniques and methodology of script analysis with an emphasis on those aspects useful to the production staff in preparation of plays for production. Offered biannually in the spring.

THEA 279: 3 s.h.**Experimental**

Experimental

THEA 300: 3-12 s.h.**Co-Op Ed Experience in Thea**

Co-Op Experience in Theatre

THEA 310: 3 s.h.**Costume for Stage & Media**

A survey of the process and techniques of designing and accomplishing costuming for theatre and other media. Script and character analysis, costume period styles, and basic construction techniques will be studied. The course is valuable for Actors and Directors as well as Designers and Technicians. Previous experience in art and sewing are not required.

THEA 312: 3 s.h.**Hist/Princpls of Stage Design (G1)**

Scenic, costume and lighting design aesthetics throughout history and as they apply to today's theatre. Art experience is not required. Offered infrequently.

THEA 315: 3 s.h.**Directing**

Practical experience in both directing and coaching actors. An overview of directing process and directing style. Offered biannually in spring. Prereq: THEA 130 or permission of instructor.

THEA 317: 3 s.h.**London Theatre Tour (P)**

Theatre as it developed in London, England. The course, in conjunction with the London Metropolitan University, requires attendance at four contrasting professional theatre performances in London as well as backstage tours of the Globe Theatre, the National Theatre and the Royal Theatre Drury Lane. Offered in summer of even years. Prereq: junior status, COMM 100, ENGL 110.

THEA 340: 3 s.h.**History of Theatre 1 (G1, W)**

Detailed study of development of all phases of theatre art and dramatic literature from its origin to 1850. Offered in rotation with THEA 341. Prereq: ENGL 110, COMM 100.

THEA 341: 3 s.h.**History of Theatre 2 (G1, W)**

Survey of European and American drama from the time of Ibsen to the present, tracing development of dramatic literature from the rise of realism to contemporary experimentalism; emphasis on plays illustrating significant trends and movements. Offered in rotation with THEA 340. Prereq: ENGL 110, COMM 100.

THEA 350: 3 s.h.**Theatre Management**

Introductory survey of theatre management, which addresses concerns related to theatre. An overview of the theatre manager's role, focus on strategic planning, organizational design, economics and the theatre, unions; and financial concerns which affect the success of theatre organizations. Offered infrequently. Prereq: COMM 100 and ENGL 110.

THEA 400: 3-12 s.h.**Co-Op Ed Experience in Thea**

Co-Op Ed Experience in Thea

THEA 412: 3 s.h.**Topics in Theatre**

Advanced work in the area of theatre production. May be taken more than one semester for credit as topic varies. Topics include stage management, costume and make-up, scenic painting, stage voice, careers in theatre. Offered annually with different topics. Prereq: THEA 120.

THEA 479: 3 s.h.**Experimental**

Experimental

THEA 498: 1-3 s.h.

Independent Study

For further information on independent study, see the Special Academic Opportunities section.

THEA 499: 1-4 s.h.

Departmental Honors

Departmental Honors

THEA 500: 3-12 s.h.

Co-Op Ed Experience in Thea

Co-Op Ed Experience in Thea

Communication, B.S. - Digital Communication and Cultural Studies Concentration

Students who pursue the Digital Communication and Cultural Studies concentration will increase their understanding of communication theory and practice, the communicative processes that form meaning, and communication's involvement in sustaining society. Communication plays a pivotal role in every aspect of personal, social, and work life. Students will receive practical and theoretical preparation necessary for achieving their potential. Critical and analytical studies focus on the circulation of meaning, distributions of power, and everyday ethical practices. Courses include interpersonal and small group communication, organizational communication, persuasion and public advocacy, race and gender studies, and theory integrated with research.

Communication, B.S. - Journalism Concentration

The journalism concentration in the Department of Communication & Theatre has a five-point curricular approach. Students will master the craft of journalistic writing across all media platforms. Along with this skillset, they should be able to articulate the responsibilities journalism has to society at the local, state, national, and international levels. An essential part of that education is in ethics. All courses have elements to help students recognize the ethical challenges journalists face and articulate a range of solutions to those challenges. Student journalists are taught to employ thorough research methods, a basic understanding of statistical concepts, and the verification of facts, for accurate reporting. Finally, the concentration helps students gain professional experience through service in internships and student media.

Major in Communication

Code	Title	Hours
CORE COMMUNICATION COURSES (C- OR BETTER)		12
COMM 101	Introduction to Communication	
COMM 201	Theory of Communication	
COMM 301	Communication Research	
COMM 401	Critical-Cultural Studies in Communication	
OPTION DECLARED		
Option in Journalism - See separate block		
Total Hours		12

Option in Journalism

Code	Title	Hours
FOUNDATIONS IN JOURNALISM		
JRNL 250	Journalism & Society	3
JRNL 313	Fundamentals of Journalism	3
JRNL 315	Advanced Reporting in a Diverse World	3
JRNL 430	Investigative and Computer Assisted Reporting	3
PROFESSIONAL EMPHASIS		
COMM 121	Intro to Media Arts Production	3
Editing, Desktop Publishing or Digital Media - Choose 1 of the following:		3
WRIT 317	Editing for Publication	
AENG 356	Desktop Publishing	
COMM 380	Digital Media Writing	
Ethics or Communication and Media Law - Choose 1 of the following:		3
JRNL 328	Ethics in Digital Media Journalism	
COMM 206	Communication and Media Law	
Internship or Independent Study - Choose 1 of the following:		4-12
COMM 300	Co-Op Ed Experience in Comm	
COMM 498	Independent Study	
ELECTIVES FOR JOURNALISM		
undefined - Choose 12 hours from:		12
COMM 251	Public Relations I: Intro to Principles & Theory	
COMM 320	Radio Production	
COMM 321	Television Production	
COMM 322	Media Aesthetics & Criticism	
COMM 323	Producing for Digital Media	
COMM 326	Media Writing: News	
COMM 330	Media and Women's Culture	
COMM 333	Gender and Communication	
COMM 337	Documentary Film I: Concepts	
COMM 351	Public Relations II: Public Relations Writing	
COMM 380	Digital Media Writing	
COMM 390	Social Media Campaigns	
COMM 300	Co-Op Ed Experience in Comm	
COMM 400	Co-Op Ed Experience in Comm	
COMM 421	Advanced Television Production	
COMM 425	Broadcast News Reporting	
COMM 429	Topics in Communication	
COMM 437	Documentary Filmmaking II	
COMM 440	Leadership and Media	
COMM 441	Political Communication	
WRIT 318	Web Writing	
WRIT 340	Rhetorical Analysis	
ENTR 370	Media Entrepreneurship	
JRNL 327	Feature Writing and Magazine Journalism	
Choose either 12 credits of electives or a minor. Journalism students are advised to give consideration to a minor in Media Arts Production, a double concentration in Strategic Public Relations, or a minor in Sports Studies.		
Total Hours		37-45

Communication, B.S. - Public Relations Concentration

The departmental major in speech communication is grounded in the liberal arts and allows students to concentrate in one of three options: communication studies, public relations, or theatre. Students take a common core of required courses in the major and in specific options, with electives chosen in consultation with an advisor.

The Public Relations concentration provides students with both a social science and humanistic approaches to this field. The relationship of organizations to their various publics is studied scientifically and as an art, with emphasis on writing and critical thinking as the basis for communicating. Students will study both the theory and practice of this major, while also having opportunities outside of the classroom to build their skills. Millersville's curriculum follows Public Relations Society of America (PRSA) guidelines, engages students in social media and prepares them to anticipate crisis communication situations.

Upon acceptance into the speech communication program, the following academic requirements must be maintained in order to graduate: a C or higher is required in each core course before taking the next higher core course; student progress in the major is reviewed no later than the semester following completion of 60 hours. Students in the major must attain a 2.5 GPA in the major in order to be retained in the major.

Major in Communication

Code	Title	Hours
CORE COMMUNICATION COURSES (C- OR BETTER)		12
COMM 101	Introduction to Communication	
COMM 201	Theory of Communication	
COMM 301	Communication Research	
COMM 401	Critical-Cultural Studies in Communication	
OPTION DECLARED		
Option in Public Relations - See separate block		
Total Hours		12

Option in Public Relations

Code	Title	Hours
REQUIRED PUBLIC RELATIONS COURSES		
COMM 251	Public Relations I: Intro to Principles & Theory	3
COMM 351	Public Relations II: Public Relations Writing	3
COMM 451	Public Relations Issues	3
COMM 452	Public Relations Campaigns	3
MEDIA FOUNDATION COURSES		
COMM 121	Intro to Media Arts Production	3
COMM 206	Communication and Media Law	3
Survey of Mass Media		3
COMM 220	Survey of Media	
JRNL 313	Fundamentals of Journalism	3
ELECTIVES A: PROFESSIONAL COMMUNICATION		
undefined - Choose 3 hours from:		3
COMM 224	Organizational Communication 1	
COMM 225	Nonprofit Sector Communication	
COMM 305	Business and Professional Communication	
COMM 300	Co-Op Ed Experience in Comm	

COMM 400	Co-Op Ed Experience in Comm	
ELECTIVES B: PERSUASIVE MESSAGING		
undefined - Choose 3 hours from:		3
COMM 371	Crisis Emergency & Risk Comm	
COMM 403	Persuasion & Social Media Infl	
COMM 441	Political Communication	
COMM 429	Topics in Communication	
COMM 461	Health Communication	
WRIT 343	Theories of Rhetoric	
ELECTIVES C: DIGITAL MESSAGING		
undefined - Choose 6 hours from:		6
COMM 380	Digital Media Writing	
COMM 390	Social Media Campaigns	
JRNL 327	Feature Writing and Magazine Journalism	
WRIT 317	Editing for Publication	
AENG 356	Desktop Publishing	
Students in the PR concentration are recommended to take BUAD 101 or ENTR 201 for G3 and ENGL 316 or ENGL 318 for Advanced Writing (AW) in General Education.		

Total Hours **36**

Communication, B.S. - Theatre Concentration

Enriching the liberal arts mission of both the department and the University, the Theatre program contributes in a number of significant ways to the "creative campus" atmosphere encouraged at Millersville. The goal of the program is to provide undergraduate preparation that balances academic training in theatre fundamentals with production work in a variety of styles in order to equip students with a broad background in the arts.

We have successful graduates working as: Account executives, editors, radio D.J.s, social media specialists, reporters and news directors, content creators, small business owners, actors, directors, producers, special event planners, fundraising and development specialists. We also have several students who have gone on to be accepted into some of the top communications graduate programs in the country.

Major in Communication

Code	Title	Hours
CORE COMMUNICATION COURSES (C- OR BETTER)		12
COMM 101	Introduction to Communication	
COMM 201	Theory of Communication	
COMM 301	Communication Research	
COMM 401	Critical-Cultural Studies in Communication	
OPTION DECLARED		
Option in Theatre - See separate block		
Total Hours		12

Option in Theatre

Code	Title	Hours
REQUIRED THEATRE COURSES		33
THEA 120	Stagecraft	
THEA 130	Acting 1	

THEA 217	Theatre Appreciation	
THEA 240	Script Analysis	
THEA 300	Co-Op Ed Experience in Thea	
THEA 340	History of Theatre 1	
THEA 341	History of Theatre 2	
THEA 412	Topics in Theatre	
THEATRE ELECTIVES - Choose 4 of the following:		12-30
THEA 208	Theatre Practicum	
THEA 230	Acting 2	
THEA 300	Co-Op Ed Experience in Thea	
THEA 310	Costume for Stage & Media	
THEA 312	Hist/Princpls of Stage Design	
THEA 315	Directing	
THEA 317	London Theatre Tour	
THEA 350	Theatre Management	
THEA 400	Co-Op Ed Experience in Thea	
THEA 412	Topics in Theatre	
ENTC 208	Production Practicum	
ENTC 220	Theatrical Lighting & Sound	
ENTC 495	Topics in ENTC	

Total Hours 45-63

Entertainment Technology, B.A.

The B.A. in entertainment technology combines training in live entertainment, art and design, computer and technology disciplines with courses that offer theory and practice in creative vision and technological insights into live event production, including lighting, scenic design, video and sound.

Persons considering the B.A. in entertainment technology program should consult with the department about options and requirements, as these programs undergo periodic revision.

Entertainment Technology

Code	Title	Hours
CORE REQUIREMENTS		
THEA 120	Stagecraft	3
ENTC 222	Vectorworks	3
ENTC 220	Theatrical Lighting & Sound	3
THEA 312	Hist/Princpls of Stage Design	3
Adv Prod for Live Entertainment		3
ENTC 313	Adv Prod for Live Entertainmnt	
ENTC 300	Co-op Ed Experience in ENTC	6
ENTC 498	Independent Study	4
ENTC 208	Production Practicum	3
ADVANCED REQUIREMENTS - ELECTIVES		
undefined - Choose 15 hours from:		15
COMM 121	Intro to Media Arts Production	
COMM 320	Radio Production	
COMM 321	Television Production	
COMM 323	Producing for Digital Media	
COMM 421	Advanced Television Production	
COMM 440	Leadership and Media	

COMM 422	Adv Radio Prod: Podcasting	
ENTC 208	Production Practicum	
ENTC 320	Scenic Painting	
ENTC 400	Co-op Ed Experience in ENTC	
ENTC 495	Topics in ENTC	
ENTC 498	Independent Study	
INTE 120	Integrated Information Technology Application Projects	
INTE 130	Fundamentals of Information Technology	
INTE 230	Network Concepts, Security and Administration	
INTE 360	IT Risk Management and Security	
THEA 208	Theatre Practicum	
THEA 217	Theatre Appreciation	
THEA 310	Costume for Stage & Media	
THEA 350	Theatre Management	
THEA 400	Co-Op Ed Experience in Thea	
THEA 412	Topics in Theatre (Topics: Stage Voice)	
THEA 412	Topics in Theatre (Topics: Devised Theatre)	
THEA 412	Topics in Theatre	
AENG 110	Communication and Information Systems	
AENG 241	Drafting Communications	
AENG 243	Technical Sketching, Design & Rendering	
AENG 261	Electronic Systems	
AENG 351	Digital Imaging	

Total Hours 43

Journalism Minor

The journalism minor at Millersville introduces students to the craft of creating content for news media. The program focuses on strengthening students' writing and presentation skills, teaching journalism through the lens of social responsibility, and installing the importance of the ethics of verification and professionalism. The curriculum is designed to open up potential career options in the field of journalism and news media while completing a different degree program. The journalism minor pairs especially well with degree programs in media arts production, sociology and government and political affairs.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Journalism

Code	Title	Hours
FOUNDATIONS IN JOURNALISM		
JRNL 250	Journalism & Society	3
JRNL 313	Fundamentals of Journalism	3
JRNL 328	Ethics in Digital Media Journalism	3
Advanced Reporting in a Diverse World or Investigative and Computer Assisted Reporting - Choose 1 of the following:		
JRNL 315	Advanced Reporting in a Diverse World	3
JRNL 430	Investigative and Computer Assisted Reporting	3
ELECTIVES (6 CREDITS)		
undefined - Choose 2 of the following:		6-24
ART 376	Intro to Photo: Digital	
COMM 121	Intro to Media Arts Production	
COMM 251	Public Relations I: Intro to Principles & Theory	
COMM 320	Radio Production	
COMM 321	Television Production	
COMM 322	Media Aesthetics & Criticism	
COMM 323	Producing for Digital Media	
COMM 326	Media Writing: News	
COMM 330	Media and Women's Culture	
COMM 333	Gender and Communication	
COMM 337	Documentary Film I: Concepts	
COMM 351	Public Relations II: Public Relations Writing	
COMM 380	Digital Media Writing	
COMM 390	Social Media Campaigns	
COMM 300	Co-Op Ed Experience in Comm	
COMM 400	Co-Op Ed Experience in Comm	
COMM 421	Advanced Television Production	
COMM 425	Broadcast News Reporting	
COMM 429	Topics in Communication	
COMM 437	Documentary Filmmaking II	
COMM 440	Leadership and Media	
COMM 441	Political Communication	
WRIT 318	Web Writing	
WRIT 340	Rhetorical Analysis	
ENGL 435	Journlsm Thru Women's Prspctvs	
ENTR 370	Media Entrepreneurship	
JRNL 315	Advanced Reporting in a Diverse World	
JRNL 327	Feature Writing and Magazine Journalism	
JRNL 430	Investigative and Computer Assisted Reporting	
Total Hours		18-36

Media Arts Production Minor

The minor in Media Arts Production helps students learn to create original content across genres to inform, entertain, persuade and enlighten audiences by learning creative, management and production processes and hands-on experiences to build your portfolio of digital content. The curriculum is designed to help students practice and reinforce industry specific skills and standards in a professional media workflow while juggling projects, meeting tight deadlines, and collaborating with production teams.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Media Arts Production

Code	Title	Hours
COMM 121	Intro to Media Arts Production	3
COMM 220	Survey of Media	3
COMM 320	Radio Production	3
COMM 321	Television Production	3
Required Writing Course - Choose 1 of the following:		
COMM 326	Media Writing: News	3
COMM 327	Media Writing: Fiction	3
Advanced Elective - Choose 3 hours from:		
ESCI 348	Broadcast Meteorology	3
COMM 323	Producing for Digital Media	
COMM 421	Advanced Television Production	
COMM 422	Adv Radio Prod: Podcasting	
COMM 425	Broadcast News Reporting	
COMM 437	Documentary Filmmaking II	
Total Hours		18

Media Arts Production, B.S.

The B.S. in Media Arts Production focuses on creation of original content across genres to inform, entertain, persuade and enlighten audiences. Students learn industry specific skills and standards, managing projects, meeting tight deadlines, and collaborating in production teams. Persons considering the B.S. in Media Arts Production should consult with the department about requirements, as these programs undergo periodic revision.

Major in Media Arts Production

Code	Title	Hours
CORE REQUIREMENTS (C- or better required)		
COMM 101	Introduction to Communication (C- or better)	3
COMM 201	Theory of Communication (C- or better)	3
COMM 301	Communication Research (C- or better)	3
COMM 401	Critical-Cultural Studies in Communication (C- or better)	3
PRODUCTION CORE		
COMM 121	Intro to Media Arts Production	3
Survey of Mass Media		3
COMM 220	Survey of Media	

COMM 320	Radio Production	3
COMM 321	Television Production	3
Media Writing: News or Media Writing: Fiction - Choose 1 of the following:		3
COMM 326	Media Writing: News	
COMM 327	Media Writing: Fiction	

ADVANCED PRODUCTION CORE

undefined - Choose 9 hours from:		9
COMM 421	Advanced Television Production	
COMM 422	Adv Radio Prod: Podcasting	
COMM 437	Documentary Filmmaking II	
COMM 323	Producing for Digital Media	
COMM 425	Broadcast News Reporting	

ELECTIVES GROUP A - Choose 6-9 Credits

undefined - Choose 6 hours from:		6
COMM 300	Co-Op Ed Experience in Comm	
COMM 400	Co-Op Ed Experience in Comm	
COMM 206	Communication and Media Law	
COMM 230	International Broadcasting	
COMM 322	Media Aesthetics & Criticism	
COMM 327	Media Writing: Fiction	
COMM 330	Media and Women's Culture	
COMM 335	Comm & Emerging Technologies	
COMM 337	Documentary Film I: Concepts	
COMM 380	Digital Media Writing	
COMM 390	Social Media Campaigns	
COMM 440	Leadership and Media	
COMM 480	Topics in Media:	

ELECTIVES GROUP B - Choose 0-3 Credits

9 credits of elective are required to meet the minimum of 45 credits in the major. You may take all electives from group A or 6 credits from group A and 3 credits from Group B. Additional electives taken that are not required but would qualify for the major will count in Group B electives per the major GPA policy of the University.

Total Hours 42

Req Related for Media Arts Production

Code	Title	Hours
Art, Technology or Film Courses - Choose 9 hours from:		9
Any ART course(s)		
Any DESN course(s)		
Any ITEC course(s)		
Any AENG course(s)		
ANTH 227	Culture Through Film	
ECON 305	Economics in Film	
ENGL 240	The Art of Film	
ENGL 347	Ethnicity in Film	
ENGL 481	History Of Film	
ENGL 482	Film and American Society	
ENGL 483	Politics, Film & Electronic Media	
PHIL 327	Philosophy in Film	
Total Hours		9

Media Studies Minor

The aim of the Media Studies minor is to complement and enhance students existing major programs in their understanding of the foundational, conceptual and theoretical study of media, through analyzing and critiquing media messages, emerging technological trends, and law and ethics. This curriculum can help students better examine the contemporary media landscape of our increasingly diverse world, increase digital, informational and media literacy, and complement their major curricula. The minor is especially designed for programs where students may have a related interest in this complimentary area of study, like anthropology, business, criminology, English, government, public relations, and sociology. This Media Studies minor does not overlap our other program's minor in Media Arts Production because the Media Studies minor has no production courses in the curriculum, and no aim for content creation as part of the program.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Media Studies

Code	Title	Hours
Survey of Media or Press Society - Choose 1 of the following:		3
COMM 220	Survey of Media	
JRNL 250	Journalism & Society	
COMM and Media Law or Journalism Ethics - Choose 1 of the following:		3
COMM 206	Communication and Media Law	
JRNL 328	Ethics in Digital Media Journalism	
Electives for Media Studies - Choose 12 hours from:		12
COMM 203	Small Group Communication	
COMM 206	Communication and Media Law	
COMM 322	Media Aesthetics & Criticism	
COMM 326	Media Writing: News	
COMM 327	Media Writing: Fiction	
COMM 330	Media and Women's Culture	
COMM 337	Documentary Film I: Concepts	
COMM 401	Critical-Cultural Studies in Communication	
COMM 403	Persuasion & Social Media Infl	
COMM 441	Political Communication	
COMM 480	Topics in Media:	
JRNL 328	Ethics in Digital Media Journalism	
Total Hours		18

Strategic Public Relations Minor

Millersville University's Strategic Public Relations minor balances study of the discipline in classroom and applied settings. The foundation of effective strategic communication and public relations consists of communication and public relations theory, social science research, media studies, digital communication, cultural studies and more.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Strategic Public Relations

Code	Title	Hours
Intro to Communication or Communication Theory (C- Minimum) - Choose 1 of the following:		
COMM 101	Introduction to Communication	
COMM 201	Theory of Communication	
COMM 251	Public Relations I: Intro to Principles & Theory	3
COMM 351	Public Relations II: Public Relations Writing	3
ELECTIVES		
9 credits of elective are required, minimum of 6 credits at the 300/400 level, 3 credits from Group A and 3 credits from Group B.		
Group A Electives - Choose 3 hours from:		
COMM 224	Organizational Communication 1	
COMM 225	Nonprofit Sector Communication	
COMM 335	Comm & Emerging Technologies	
COMM 461	Health Communication	
Group B Electives - Choose 3 hours from:		
WRIT 343	Theories of Rhetoric	
COMM 371	Crisis Emergency & Risk Comm	
COMM 380	Digital Media Writing	
COMM 390	Social Media Campaigns	
COMM 403	Persuasion & Social Media Infl	
COMM 441	Political Communication	
Open Elective - Choose 3 hours from:		
COMM 224	Organizational Communication 1	
COMM 225	Nonprofit Sector Communication	
COMM 335	Comm & Emerging Technologies	
COMM 461	Health Communication	
WRIT 343	Theories of Rhetoric	
COMM 371	Crisis Emergency & Risk Comm	
COMM 380	Digital Media Writing	
COMM 390	Social Media Campaigns	

COMM 403 Persuasion & Social Media Infl

COMM 441 Political Communication

Total Hours

18

Theatre Minor

The minor in Theatre combines traditional academic coursework in the classroom with practical experience through participation in productions on campus. Students receive academic preparation and training in theatre fundamentals, such as performance and production work including acting, directing, scenic design, costume, makeup, lighting and sound.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Theatre

Code	Title	Hours
Stagecraft or Acting I - Choose 1 of the following:		
THEA 120	Stagecraft	
THEA 130	Acting 1	
Theatre Appreciation or Script Analysis - Choose 1 of the following:		
THEA 217	Theatre Appreciation	
THEA 240	Script Analysis	
THEA 340	History of Theatre 1	3
THEA 341	History of Theatre 2	3
Theatre Elective - Choose 1 of the following:		
THEA 120	Stagecraft	
THEA 130	Acting 1	
THEA 230	Acting 2	
Additional Theatre Elective - Choose 1 of the following:		
THEA 312	Hist/Princpls of Stage Design	
THEA 315	Directing	
THEA 317	London Theatre Tour	
THEA 350	Theatre Management	
THEA 412	Topics in Theatre	

Total Hours

18

Criminology, Sociology and Anthropology

The Department of Criminology, Sociology and Anthropology offers both a major and minor in sociology, a major and minor in anthropology, an option in archaeology and a minor and option in criminology. Many

departmental faculty teach in the women's studies, African-American studies and Latina(o) studies programs.

Department Options and Minors

For sociology majors wishing to concentrate their studies in the areas of criminal behavior and criminal justice, the department has a criminology option within the sociology major. This program provides the student not only with a thorough knowledge of the American criminal justice system, but combines that knowledge with a broad understanding of American society and the principles of sociological method and theory.

The archaeology option within the anthropology major offers students a broad view of contemporary archaeology, with emphasis on contract archaeology, artifact analysis, current method and theory, field experience and independent research.

The department strongly encourages all of its majors to acquire practical experience as part of their degree program. This experience may take a variety of forms, depending on the student's major or minor. Along with other activities, the department recommends participating in faculty-supervised research (ongoing research projects are conducted out of both the archaeology and social research labs), internships (see Internships in the Special Academic Opportunities section), studying abroad for a semester or summer term, or becoming a departmental tutor.

There is an honors program for superior students. Further information may be obtained from the department or the Departmental Honors section of this catalog.

The department offers three minors: one in criminology, one in sociology and one in anthropology. These minors provide the student with insight into the principles governing human interaction and social organization. The criminology minor is the most specific of the three, focusing exclusively on the American criminal justice system. The sociology minor, in broad terms, examines American society, while the student minoring in anthropology can focus on either archaeology or cultural anthropology. All of these minors should facilitate career advancement and intellectual breadth, regardless of the student's major field of study.

For the most recent career information, students should consult the criminology, sociology and anthropology department website.

The programs

- Anthropology Minor (p. 85)
- Anthropology, B.A. (p. 86)
- Anthropology, B.A. - Archaeology Option (p. 87)
- Archaeology Minor (p. 87)
- Criminology Minor (p. 87)
- Cultural Anthropology Minor (p. 88)
- Sociology Minor (p. 88)
- Sociology, B.A. (p. 89)
- Sociology, B.A. - Criminology Option (p. 89)

the faculty

Arnold, Marlene; Professor

College of Arts, Humanities and Social Sciences

B.A., Macalester College, 1974; Ph.D., University of Pennsylvania, 1985

Garcia, Justin; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Millersville University, 2001; M.A., Temple University, 2008; Ph.D., Ibid., 2011

Jerstad, Stephanie; Assistant Professor

College of Arts, Humanities and Social Sciences

A.A.S., Harrison College, 2012; B.S., Ibid., 2014; M.S., University of Cincinnati, 2016; Ph.D., Southern Illinois University Carbondale, 2021

Mahaffy, Kimberly; Professor

College of Arts, Humanities and Social Sciences

B.S., Gordon College, 1987; M.S., Northeastern University, 1993; M.A., University of New Hampshire, 1995

Orr, Ryan; Associate Professor

College of Arts, Humanities and Social Sciences

B.G.S., University of Kansas, 2001; M.A., DePaul University, 2004; Ph.D., Iowa State University, 2009

Porter, Aaron; Assistant Professor

College of Arts, Humanities and Social Sciences

B.A., Bloomsburg University, 1985; M.A., University of Pennsylvania, 1987; Ph.D., Ibid., 1993

Schmitt, Frederika; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Bucknell University, 1990; M.A., University of Delaware, 1994; Ph.D., Ibid., 1998

Smith, Carrie; Associate Professor

College of Arts, Humanities and Social Sciences

B.S., University of California, 1996; M.A., Vanderbilt University, 1998; Ph.D., Ibid., 2004

Trussell, Timothy; Associate Professor

College of Arts, Humanities and Social Sciences

B.S., Oregon State University, 1991; M.S., Ibid., 1997; Ph.D., Texas A&M University, 2004

the courses

ANTH 121: 3 s.h.

Cultural Anthropology (G3)

Introduces basic concepts and topics: culture, fieldwork, communication, sex roles, social organization, politics, economics, belief systems, culture change and applied anthropology.

ANTH 121H: 3 s.h.

Hnrs:Cultural Anthropology (G3)

ANTH 122: 3 s.h.

Physical Anthropology (G3)

The anthropological study of human evolution: paleoanthropology, primatology and human population genetics, and the study of human variation— the ways humans adapt biologically to their environments. Offered annually.

ANTH 123: 3 s.h.

Introduction To Archeology (G3)

Introduces methods and theory of contemporary archaeology using examples from Old and New World prehistory. The relationship of archaeology to anthropology is emphasized. Offered annually.

ANTH 179: 1-3 s.h.

Experimental

Experimental

ANTH 220: 3 s.h.**Ethnographic Methods (W)**

Introduces ethnographic research methods through individual or group fieldwork, emphasizing the ethnographic interview and participant observation. Prereq: ENGL 110 or permission of instructor.

ANTH 222: 3 s.h.**American Indian (G3, W)**

Examination of past and present cultures of the native peoples of North America. Offered periodically. Prereq: ENGL 110.

ANTH 223: 3 s.h.**People and Cultures Of Mediter (G3)**

Comparison and contrast of the history and culture of rural and urban society in the Mediterranean region. Focus is on topics and themes of importance to the circum-Mediterranean culture area. Offered periodically.

ANTH 226: 3,6 s.h.**Compar Societs: (G3, W)**

Comparative investigations of a topic or region of current interest in the field of anthropology. Offered annually. Prereq: ENGL 110.

ANTH 227: 3 s.h.**Culture Through Film (G3, W)**

Comparative study of cultures through the medium of film using anthropological theories, perspectives and texts. Offered annually. Prereq: ENGL 110.

ANTH 227H: 3 s.h.**Culture Through Film (G3, W)**

Comparative study of cultures through the medium of film using anthropological theories, perspectives and texts. Offered annually. Prereq: ENGL 110.

ANTH 233: 3 s.h.**Topics In Archaeology (G3)**

Examines human cultural evolution before and after the advent of writing, using archaeological and related records. Topics vary from the rise of civilization to the decline of local communities. Offered annually.

ANTH 233H: 3 s.h.**Hon: Topics in Archaeology (G3)****ANTH 235: 3 s.h.****Historical Archaeology (G3)**

A comparative study of methods and aims in the discipline of historical archaeology (the excavation of sites dating post-1500), including excavation and analysis techniques, approaches to archaeological research, and case studies of specific excavations.

ANTH 279: 3 s.h.**Experimental**

Experimental

ANTH 300: 3-12 s.h.**Co-Op Ed Experience in Anthro**

Co-Op Ed Experience in Anthro

ANTH 320: 3 s.h.**Archeological Method and Theory**

Focus on current developments in archaeological method and theory, with specific emphasis on contract archaeology, survey methods, artifact analysis and contemporary theoretical approaches. Offered annually. Prereq: ANTH 123 plus 3 additional hours of anthropology or permission of instructor.

ANTH 320H: 3 s.h.**Hon: Arch Method and Theory****ANTH 325: 3 s.h.****Medical Anthropology**

Cross-cultural study of health and healing, including comparative medical systems, theories of disease, patients/healers in the context of culture, mental health, bioethics, interaction of culture, biology and environment, and the effects of cultural change. Offered periodically.

ANTH 326: 3 s.h.**Anthropology of Religion (G3)**

A cross-cultural examination of religious diversity. Primary emphasis will be placed on the five major world religions, although other religious traditions may also be considered. The course examines religion as a form of cultural practice, how people utilize religion to orient themselves to the social worlds in which they live, and the ways in which religion shapes peoples' lives. Pre-req: C- or higher in ANTH 121, restricted to Juniors and Seniors, Majors and Minors in the Sociology/Anthropology department, or instructor permission.

ANTH 327: 3 s.h.**Urban Anthropology (G3)**

This course focuses on urbanism (the social and cultural dynamics of humans living within a large, dense city environment). Various topics to be examined in this course include the rise of urbanism, globalization, the dynamic nature of ethnic and class relations within urban communities, social and political activism among urban populations, migration, and settlement. 3 credits. Pre-requisite: ANTH 121

ANTH 336: 3 s.h.**Language & Communication (G3)**

A Comparative Course that examines language as humans' primary means of communication. Although virtually all animals communicate in some form, language is considered distinctly human as a result of cognitive, cultural, and physiologically distinct features of our species. The course examines language as both a system and performance. The systematic approach towards language study examines the structural components of language: phonemes, morphemes, syntax, grammar, etc., while a performance approach towards language study examines the art and style of communication (regional accents and dialects, slang, etc.). Anthropologists widely consider language to be the single most important aspect of human culture, as language is the means by which culture is transmitted to others. Other key topics to be examined in the course include language and identity, bilingualism, the critical age of language development, language shift vs. language maintenance, the development of pidgins and Creole languages (with a particular focus on Black English Vernacular, Spang/ish, and the Ca/6 dialect of the Southwestern United States), the prescriptive vs. descriptive debate within linguistics, linguistic profile, language prejudice, and the rise of linguistic nationalism (as seen in cases such as the situation in Quebec among Franco-Canadian nationalists and the "English as the Official Language" debate in the United States. Pre-req: ANTH 121 and Junior class standing.

ANTH 344: 3 s.h.**Gender, Race, and Class (P)**

The intersecting role of gender, race and class on human social life in the U.S. and other cultures. An interdisciplinary and comparative examination of the ways social categories define, limit and liberate human potential. Offered annually. Prereq: COMM 100, ENGL 110, junior status and at least two social science courses.

ANTH 344H: 3 s.h.**Hnrs:Gender, Race, and Class (P)**

Hnrs:Gender, Race, and Class

ANTH 379: 3 s.h.

Experimental
Experimental

ANTH 400: 3-12 s.h.

Co-Op Ed Experience in Anthro
Co-Op Ed Experience in Anthro

ANTH 422: 3 s.h.**History of Anthropological Theory**

Examines, in a developmental fashion, the attempts made by anthropologists to explain human similarities and differences, and the dynamics of culture change. Offered annually. Prereq: junior/senior status and a minimum of 9 s.h. in anthropology.

ANTH 425: 1-6 s.h.**Field Study**

Individual or group research in any of the subdisciplines of anthropology, including archaeological field school and ethnographic field projects. Offered periodically. Prereq: permission of instructor.

ANTH 458: 3-6 s.h.**Seminar In Anthropology**

Research and group discussions for advanced students on various topics of interest. A total of 6 s.h. may be taken. Offered in alternate years. Prereq: permission of instructor.

ANTH 479: 3 s.h.

Experimental
Experimental

ANTH 489: 1-4 s.h.**Honors Course**

Two to four semesters of supervised research by highly motivated students capable of conducting independent research projects. Prereq: 3.0 GPA and recommendation by faculty mentor. For further information, see the Special Academic Opportunities section.

ANTH 498: 1-6 s.h.**Independent Study**

For further information, see the Special Academic Opportunities section.

ANTH 499: 1-4 s.h.**Departmental Honors**

Two to four semesters of supervised research by highly motivated students capable of conducting independent research projects. Prereq: 3.0 GPA and recommendation by faculty mentor. For further information, see the Special Academic Opportunities section.

ANTH 500: 3-12 s.h.

Co-Op Ed Experience in Anthro
Co-Op Ed Experience in Anthro

SOCY 101: 3 s.h.**Introduction to Sociology (G3)**

Introduction to the scientific study of human groups, organizations and societies. Examination of major sociological questions and approaches to studying them.

SOCY 101H: 3 s.h.**Introduction to Sociology (G3)**

Introduction to the scientific study of human groups, organizations and societies. Examination of major sociological questions and approaches to studying them.

SOCY 179: 1-3 s.h.

Experimental
Experimental

SOCY 210: 3 s.h.**Sociology of the Family (G3)**

The family as a social institution. Topics include the family in mass society, diverse family forms, human sexuality, typologies of love, mate selection, husband-wife interaction, parent-child interaction, family disorganization and American ethnic families. Specific topics may vary.

SOCY 211: 3 s.h.**Social Problems (G3, W)**

A sociological examination of problem areas or human concerns such as poverty, labor issues, substance abuse, domestic violence, crime and justice, health, the environment, discrimination and globalization. Topics may vary. Prereq: ENGL 110.

SOCY 211H: 3 s.h.**H:Social Problems (G3, W)**

H:Social Problems

SOCY 216: 3 s.h.**Human Population (G3)**

Analysis of population processes such as fertility, mortality, composition, distribution and migration patterns; relationship of population processes to social, economic and political development; effects of status differences; trends in population change. Offered periodically.

SOCY 230: 3 s.h.**Criminology (G3, W)**

The nature and causes of criminal behavior and the types of social response to law violation. Offered in fall, spring. Prereq: SOCY 101, ENGL 110.

SOCY 230H: 3 s.h.**Hon: Criminology (G3, W)****SOCY 300: 3-12 s.h.****Co-Op Ed Experience in Soc**

Co-Op Ed Experience in Soc

SOCY 301: 3 s.h.**Craft of Sociology (W)**

Exploration of the technical and analytical skills of sociology, including locating sociological resources, citing sociological materials, writing literature reviews and understanding links between sociological knowledge and public policy. Prerequisites: SOCY 101, ENGL 110 and 6 credits of SOCY courses.

SOCY 302: 4 s.h.**Social Statistics**

Emphasis on learning and presenting findings from applied statistical techniques, including frequency tables and graphs, contingency tables, measures of central tendency and dispersion, hypothesis testing, confidence intervals, analysis of variance, correlation, and linear regression (bivariate and multiple). SPSS software package used. Offered in fall, spring. Prereq: C- or higher in Math 130 and 9 s.h. in sociology/ anthropology.

SOCY 303: 3 s.h.**Sociological Theory**

Examination of classical and contemporary theoretical traditions; relevance of sociology to everyday life; works of selected theorists such as Durkheim, Marx, Weber, Merton. Offered fall, spring. Prereq: SOCY 101 and 9 s.h. of sociology at the 200 level or higher.

SOCY 305: 3 s.h.**Social Research Methods (W)**

Overview of major research methods: survey analysis, interviewing, participant observation, content analysis and experimental design. Each student designs and completes a research project. Offered fall, spring. Prereq: C- or higher in ENGL 110, SOCY 301, SOCY 303 and SOCY 302.

SOCY 307: 3 s.h.**African-American Social Thought (G3)**

Examination of the development of African-American social theory through the history of the American republic. Looks at the relationship between African-American social thought, civil rights movements and the larger Afro-Caribbean diaspora. Offered infrequently. Prereq: 9 s.h. in African- American Studies or SOCY 101 and 9 s.h. in sociology (SOCY 303 recommended) or permission of instructor.

SOCY 308: 3 s.h.**Soc of Afr-Amer and Lat Educ (D)**

Social and historical analysis of the secondary and postsecondary experiences of African-American and Latino/a youth in the U.S. informed by critical race, feminist and stratification theories. Offered periodically. Prereq: SOCY 101 or LATS 201.

SOCY 310: 3 s.h.**Sociology of Religion**

Sociological understanding and interpreting religious phenomena including insight regarding the place of religion in society; the functional and conflict orientation to religion; religion and the individual; institutionalization of religion; religion and social change; and the secularization of religion. Offered periodically.

SOCY 313: 3 s.h.**Sociology of Disaster (G3)**

Behavioral and organizational response to environmental hazards and disasters. Case studies of major natural disasters and hazardous-materials incidents illustrate individual, group and societal challenges faced in such events. Issues include building a disaster-resistant community, the impact of the media, and governmental successes and failures. Offered annually. Prereq: SOCY 101 or SOCY 211. A required course for the EHEM minor.

SOCY 313H: 3 s.h.**H: Sociology of Disaster (G3)****SOCY 315: 3 s.h.****Race and Ethnic Relations (G3)**

Study of racial and ethnic relations, modes of adaptation of minorities and cross-cultural examinations of dominant-minority relations. Offered annually. Prereq: 3 s.h. of sociology or junior/senior status.

SOCY 316: 3 s.h.**Social Psychology (G3, W)**

Introduction to sociological social psychology; how social interactions are created, become patterned and susceptible to change; how society is structured through social interaction; and how social identities are formed. Specific topics may vary. Offered periodically. Prereq: ENGL 110, 3 s.h. of sociology or junior/senior status.

SOCY 317: 3 s.h.**Medical Sociology (G3)**

Social and cultural factors in health and illness; social organization of the medical care system; structural and interactional aspects of healthcare. Prereq: 3 s.h. sociology or junior/senior status. Offered periodically.

SOCY 318: 3 s.h.**Soc Of Complex Organizations**

Social-interaction processes in business and industry; nature and effects of complex industrial organization; interrelationships among industry and other social subsystems. Offered periodically. Prereq: 3 s.h. sociology or junior/senior status.

SOCY 319: 3 s.h.**Social Stratification (G3)**

The development of social inequality by race, ethnicity, class, gender and nationality. The social construction of race and gender; various theories of class distribution. Inequality in education, housing and the workplace are discussed. Global instances of inequalities are also discussed. Offered periodically. Prereq: 3 s.h. of sociology and junior/senior status.

SOCY 320: 3 s.h.**Sociology of Education (G3)**

Analysis of education as a social institution and its relationship to other institutions; the roles of educator, administrator, student and parent; implications of subcultures, social stratification and social change. Offered infrequently.

SOCY 329: 1-6 s.h.**Topics in Sociology**

Offered periodically.

SOCY 329H: 1-6 s.h.**Hrs: Topics in Sociology****SOCY 331: 3 s.h.****Sociology of Policing & Courts (G3)**

Overview of the American system for the administration of justice focused on the apprehension, prosecution and adjudication of criminal defendants. Offered in fall. Prereq: SOCY 101, 230.

SOCY 332: 3 s.h.**Modern Corrections (G3)**

Contemporary American responses to crime. Concentrates on the origins, nature, functions and limitations of American correctional modalities. Offered in spring. Prereq: SOCY 101, 230.

SOCY 332H: 3 s.h.**H:Modern Corrections (G3)****SOCY 334: 3 s.h.****Juvenile Delinquency (G3)**

Nature and extent of juvenile crime; theories of causation; techniques of control and prevention. Offered annually. Prereq: SOCY 101, 230.

SOCY 335: 3 s.h.**Ethics in Criminal Justice**

Examines numerous ethical theories and their application to policing, courts and corrections in the United States. A global analysis of current research, theories and case studies on human trafficking will also be a focus. Prerequisites: SOCY 101 and SOCY 230.

SOCY 335H: 3 s.h.**Hon: Ethics in Crim Justice****SOCY 337: 3 s.h.****Gender and the Law (G3)**

Analyze how the courts and the law construct gender and how these social constructions of gender in the law impact individuals, families, groups, and institutions. Examine the lives of women & girls as offenders, prisoners, victims/survivors and workers in the criminal justice system from a variety of perspectives and disciplines. Analyze how the intersections of sexism, racism, heterosexism, and classism impact the lives of individuals and communities in regard to criminality.

SOCY 337H: 3 s.h.

Hon: Gender and the Law (G3)

SOCY 338: 3 s.h.

Sociology of Deviance

Deviance as a social phenomenon. Discusses how definitions of deviance have changed over time, how people become labeled “deviant” and the utility of various theories of deviance. Offered annually. Prereq: SOCY 101.

SOCY 338H: 3 s.h.

H:Sociology of Deviance

SOCY 339: 3 s.h.

Topics In Criminology

The nature, extent, origins and possible “solutions” to select problems in contemporary criminology. Offered periodically. Prereq: SOCY 101 and 230 or permission of instructor.

SOCY 339H: 3 s.h.

Hon: Topics in Criminology

SOCY 379: 1-3 s.h.

Experimental

Experimental

SOCY 400: 3-12 s.h.

Co-Op Ed Experience in Soc

Co-Op Ed Experience in Soc

SOCY 441: 3 s.h.

Urban Society

Historical and postmodern analysis of urban development, in particular the impact of demographic, political and socioeconomic structural changes on the social fabric of U.S. metropolitan cities. Topics include inner-city life and culture, race, gender, class relations and policy implications. Offered periodically. Prereq: SOCY 101.

SOCY 441H: 3 s.h.

Hnrs: Urban Society

SOCY 448: 3 s.h.

Seminar In Sociology

Research and group discussion for advanced students on various topics of interest. A total of 6 s.h. may be taken. Offered in fall, spring. Prereq: permission of instructor.

SOCY 479: 3 s.h.

Experimental

Experimental

SOCY 489: 1-4 s.h.

Honors Course

Two to four semesters of supervised research through independent projects. Prereq: 3.0 GPA and recommendation by a faculty mentor. For further information, see the Special Academic Opportunities section.

SOCY 498: 1-6 s.h.

Independent Study in Sociology

For further information, see the Special Academic Opportunities section. Prereq: 3.0 GPA and permission of faculty member.

SOCY 499: 1-4 s.h.

Departmental Honors

Two to four semesters of supervised research through independent projects. Prereq: 3.0 GPA and recommendation by a faculty mentor. For further information, see the Special Academic Opportunities section.

SOCY 500: 3-12 s.h.

Co-Op Ed Experience in Soc

Co-Op Ed Experience in Soc

DEPARTMENTAL POLICIES

The policies for admission to the major and retention in the major apply to the B.A. sociology major and the B.A. sociology/criminology option major.

POLICIES FOR ADMISSION TO THE MAJOR

1. New First Year students must have the required SAT I scores or class rank as determined by the University administration.
2. All other students (internal and external transfers) must:
 - Complete SOCY 101 Introduction to Sociology (or equivalent course) with a C or higher.
 - Complete MATH 130 Elements of Statistics 1 (or equivalent course) with a C- or higher.
 - Obtain a minimum GPA of 2.0 and a GPA of at least 2.0 in courses required for the major. Internal transfers must have completed 15 semester hours at Millersville University.
3. Students who meet the above criteria may apply for admission to the sociology or sociology/criminology major and will be admitted if space is available.

POLICIES FOR RETENTION IN THE MAJOR

1. University requirements for retention.
2. Majors must maintain a minimum GPA of 2.0 overall and in the major. If either GPA falls below 2.0, the student has one semester to reestablish a 2.0, after which time the student will be dismissed from the major if either GPA remains below 2.0. A student who has been dismissed may petition the department to be readmitted after she/he has satisfied the minimum retention requirements. Students will be readmitted on a space-available basis.
3. A student must earn a minimum grade of C in SOCY 101 Introduction to Sociology; a minimum grade of C- in MATH 130 Elements of Statistics 1; a minimum grade of C in SOCY 230 Criminology; and a minimum grade of C- in SOCY 302 Social Statistics before taking courses for which these are prerequisites. A student who does not earn the necessary grade in these prerequisite courses by the second attempt will be dismissed from the sociology or sociology/criminology major.
4. The sophomore review is a mandatory, nongraded activity designed to enhance departmental advising. It will take place after the completion of 45 semester hours but no later than the semester following the completion of 60 semester hours. If the student fails to participate in the review, she/he will be placed on probation in the major for one semester, during which time she/he will be given a final opportunity to complete the departmental academic review. Failure to complete the review during the probationary period will result in the student being dismissed from the major.

Anthropology Minor

The minor in anthropology fits well with social science and humanities majors. Graduates are employed in the area of human services, entry-level work with local or federal government agencies and employment in the business community. Our program also prepares students for more advanced study which leads to careers in teaching and research at colleges, universities or museums or other not-for-profit organizations.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville GPA of 2.0.

- Only one course which counts toward your major may be counted toward your minor.
- Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
- At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
- No course needed for the minor may be taken Pass-Fail.
- One-half or more of the work required for the minor must be completed at Millersville University.
- No student may minor in his or her major.

Minor in Anthropology

Code	Title	Hours
ANTH 121	Cultural Anthropology	3
ANTH 122	Physical Anthropology	3
ANTH 123	Introduction To Archeology	3
Ethnographic Methods or History of Anthropological Theory - Choose 1 of the following:		3
ANTH 220	Ethnographic Methods	
ANTH 422	History of Anthropological Theory	
Anthropology Electives (300-400 level)		
Choose Anthropology electives at the 300 or 400 level in consultation with your advisor. If you select ANTH 422 above, you may take 3 credits of elective at a lower level.		
Total Hours		12

Anthropology, B.A.

The departmental major in anthropology emphasizes a holistic approach to the study of humans, located in all parts of the world, through all periods of time. Anthropology consists of four separate but interrelated subdisciplines:

- cultural anthropology
- physical anthropology
- archaeology
- anthropological linguistics

This program focuses primarily on the subdisciplines of archaeology and cultural anthropology. The department encourages its majors to undertake field study in one or more of the subdisciplines of anthropology. A major in anthropology provides the student with a holistic and comparative perspective on problems and situations, which employers find very valuable. An undergraduate degree prepares the student for employment in the area of human services, entry-level work with local or federal government agencies, and employment in the business community. Our program also prepares students for more advanced study leading to careers in teaching and research at colleges, universities or museums, or research/consultative careers with local, national or international organizations.

Major in Anthropology

Code	Title	Hours
FOUNDATION COURSES		
ANTH 121	Cultural Anthropology	3
ANTH 122	Physical Anthropology	3
ANTH 123	Introduction To Archeology	3

ETHNOGRAPHIC COURSES

ANTH 220	Ethnographic Methods	3
Ethnographic Elective - Choose 1 of the following:		3-6
ANTH 222	American Indian	
ANTH 223	People and Cultures Of Mediter	
ANTH 226	Compar Societs:	
ANTH 227	Culture Through Film	

COMPARATIVE COURSE

undefined - Choose 1 of the following:		3
ANTH 325	Medical Anthropology	
ANTH 326	Anthropology of Religion	
ANTH 327	Urban Anthropology	
ANTH 336	Language & Communication	
ANTH 344	Gender, Race, and Class	

THEORETICAL AND METHODOLOGICAL COURSES

ANTH 422	History of Anthropological Theory	3
Additional Theoretical and Methodological Course		3
3 credits of Anthropology coursework at the 300-level or above, in consultation with your advisor. No single course may be counted twice as both the Comparative Course requirement and the Theoretical Methodological Course requirement.		

ANTHROPOLOGY ELECTIVES

undefined - Choose 6 hours from:		6
Any ANTH course(s)		
ANTH 235	Historical Archaeology	
ANTH 320	Archeological Method and Theory	
ENGL 462	Dialects of American English	
SOCY 216	Human Population	
SOCY 302	Social Statistics	
SOCY 303	Sociological Theory	
SOCY 305	Social Research Methods	
SOCY 315	Race and Ethnic Relations	

Note: This requirement may not be satisfied with ANTH 148.

Choose electives in consultation with your advisor. Sociology courses may be counted here toward the Anthropology degree if they are not used to meet requirements in the G3 block of General Education.

DEPARTMENTAL ACADEMIC REVIEW

After completion of 45 credits and no more than 60 credits students will complete this mandatory non-graded activity designed to enhance dept. advising.

Total Hours **30-33**

Req Related for Anthropology, BA

Code	Title	Hours
Required Related for this degree may be fulfilled by completing a second major or a minor. To declare a second major or a minor, you must submit the paperwork through Academic Advisement. Otherwise, one of the options below must be chosen.		
REQUIRED RELATED - Choose 1 of the following options 1-2:		6-9
Option 1. FOREIGN LANGUAGE COURSES		
Complete at least 6 credits in one Foreign Language at the University level. See advisor for options.		

Option 2. 9-12 CREDITS IN RELATED AREA APPROVED BY FACULTY

Please have your advisor submit a list of approved courses to degreeaudit@millersville.edu for inclusion.

Total Hours 6-9

Anthropology, B.A. - Archaeology Option

The Archaeology option, housed within the Anthropology department, at Millersville University is dedicated to learning and understanding the role that Lancaster County and Colonial Pennsylvania played in the context of the larger colonial Atlantic World by way of ethical archaeological excavation, historical analysis and documentary research. Students may complete either a major or a minor in this field.

Major in Anthropology, Archaeology Option

Code	Title	Hours
REQUIRED ANTHROPOLOGY COURSES		
ANTH 121	Cultural Anthropology	3
ANTH 122	Physical Anthropology	3
Introduction to Archaeology 3		
ANTH 123	Introduction To Archeology	3
ANTH 220	Ethnographic Methods	3
ANTH 422	History of Anthropological Theory	3
REQUIRED ARCHAEOLOGY		
ANTH 233	Topics In Archaeology	3
Archaeological Method and Theory 3		
ANTH 320	Archeological Method and Theory	3
Field Study - Choose 3 hours from: 3		
ANTH 425	Field Study	3
ANTHROPOLOGY ELECTIVES		
undefined - Choose 6 hours from: 6		
Any 2-level ANTH course(s)		
Any 3-level ANTH course(s)		
Any 4-level ANTH course(s)		
ANTH 222	American Indian	
ANTH 227	Culture Through Film	
ANTH 235	Historical Archaeology	
ANTH 489	Honors Course	
ANTH 498	Independent Study	
ANTH 499	Departmental Honors	

Note: This requirement may not be satisfied with ANTH 201.

DEPARTMENTAL ACADEMIC REVIEW

After completion of 45 credits and no more than 60 credits students will complete this mandatory non-graded activity designed to enhance dept. advising.

Total Hours 30

Req Related for Anthropology, BA

Code Title Hours
 Required Related for this degree may be fulfilled by completing a second major or a minor. To declare a second major or a minor, you must submit the paperwork through Academic Advisement. Otherwise, one of the options below must be chosen.

REQUIRED RELATED - Choose 1 of the following options 1-2: 6-9

Option 1. FOREIGN LANGUAGE COURSES

Complete at least 6 credits in one Foreign Language at the University level. See advisor for options.

Option 2. 9-12 CREDITS IN RELATED AREA APPROVED BY FACULTY

Please have your advisor submit a list of approved courses to degreeaudit@millersville.edu for inclusion.

Total Hours 6-9

Archaeology Minor

The Archaeology option, housed within the Anthropology program at Millersville University, is dedicated to learning and understanding the role that Lancaster County and Colonial Pennsylvania played in the context of the larger colonial Atlantic World by way of ethical archaeological excavation, historical analysis and documentary research. Students may complete either a major or a minor in this field.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Archaeology

Code	Title	Hours
ANTH 121	Cultural Anthropology	3
Introduction to Archaeology 3		
ANTH 123	Introduction To Archeology	3
Archaeological Method and Theory 3		
ANTH 320	Archeological Method and Theory	3
ANTH 425	Field Study	6
Anthropology Elective		
Choose one 3 credit hour Anthropology elective in consultation with your adviser.		

Total Hours 15

Criminology Minor

The Millersville University criminology program provides students with an opportunity to study criminal behavior and the operation of the criminal

justice system within a broad sociological context. The combination of a criminology focus with the development of sociological research skills provides excellent preparation for a wide range of criminal justice careers as well as for graduate and professional school. The minor courses cover theories of criminal behavior, policing, the courts, corrections, and other crime related topics. Students who minor in Criminology may also complete an internship in a criminal justice setting as part of their course work for the minor.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Criminology

Code	Title	Hours
SOCY 101	Introduction to Sociology	3
SOCY 230	Criminology	3
SOCY 331	Sociology of Policing & Courts	3
SOCY 332	Modern Corrections	3
Electives - Choose 6 hours from:		6
Any 33-level SOCY course(s)		
SOCY 300	Co-Op Ed Experience in Soc	
SOCY 400	Co-Op Ed Experience in Soc	
SOCY 500	Co-Op Ed Experience in Soc	
Choose 6 credits from Sociology courses numbered 330-339 and/or Sociology Co-op 300/400/500. A maximum of 3 credits in Co-op can be applied toward the minor.		
Total Hours		18

Cultural Anthropology Minor

Millersville University's minor in Cultural Anthropology is a valuable complement to a major in any social science or humanities discipline. With a broad perspective on issues and problems regarding the human race, students are able to pair this minor with the major of their choosing in order to prepare for employment in fields such as not-for-profit organizations, entry-level work with local, state or federal government agencies, and employment in the business community. Students can also move into advanced study, which leads to careers in teaching and research at colleges, universities or museums, and careers within local, national or international business.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.

3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Cultural Anthropology

Code	Title	Hours
ANTH 121	Cultural Anthropology	3
ANTH 220	Ethnographic Methods	3
Anthropological Theory or Seminar in Anthropology - Choose 1 of the 3-6 following:		
ANTH 422	History of Anthropological Theory	
ANTH 458	Seminar In Anthropology	
Anthropology Electives		9
Choose 9 credits of Anthropology electives in consultation with your adviser. At least 3 credits must be at the 300 level or higher, and no more than 3 credits may be at the 100 level.		
Total Hours		18-21

Sociology Minor

The Millersville University Sociology minor enables students to develop a sociological imagination with which they can understand their place in and responsibility for the world around them. The Sociology minor can be combined with any major area of study to give students an important sociological context to their chosen careers. These 18 credit minors offer enough flexibility to be tailored to the individual student's interests.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Sociology

Code	Title	Hours
SOCY 101	Introduction to Sociology	3
200 Level Sociology Elective - Choose 1 class from:		
SOCY 210	Sociology of the Family	
SOCY 211	Social Problems	
SOCY 216	Human Population	
SOCY 230	Criminology	
Any 2-level SOCY course(s)		

300-400 Level Sociology Electives - Choose 4 classes from:
Any 3-level SOCY course(s)
Any 4-level SOCY course(s)

Total Hours **3**

Sociology, B.A.

Sociology is the scientific study of human interaction and social organization. The sociologist is primarily interested in discovering the social patterns affecting and resulting from human group behavior. Sociologists focus on the influences of the social as well as the physical and biological environment on individual behavior and personality formation, on group interaction and on social organization and institutions. Within this general framework, sociological interests are extremely varied. The subject matter of sociology includes crime and its causation, family problems and interaction patterns, variations in the aging process, the impact of social class on life chances, the influence of mass media on human behavior, the social construction of gender and the transition from adolescence to adulthood. The sociology major is selected by those students primarily interested in pursuing careers in the following areas:

- college/university teaching and research
- research in a public or private organization or business
- employment in community agencies or in local, state or federal government

Major in Sociology, BA

Code	Title	Hours
DEPARTMENTAL ACADEMIC REVIEW		

After completion of 45 credits and no more than 60 credits students will complete this mandatory non-graded activity designed to enhance dept. advising.

REQUIRED SOCIOLOGY COURSES

SOCY 101	Introduction to Sociology (with Grade >= 2.0; C or higher)	3
SOCY 302	Social Statistics	4
SOCY 303	Sociological Theory	3
SOCY 305	Social Research Methods	3
Capstone Experience - Choose 3 hours from:		
SOCY 300	Co-Op Ed Experience in Soc	
SOCY 448	Seminar In Sociology	
SOCY 499	Departmental Honors	

INSTITUTIONS AND SOCIAL LIFE BLOCK

undefined - Choose 6 hours from:		
SOCY 317	Medical Sociology	6
SOCY 318	Soc Of Complex Organizations	
SOCY 319	Social Stratification	
SOCY 320	Sociology of Education	
SOCY 329	Topics in Sociology	

INDIVIDUAL AND SOCIETY BLOCK

undefined - Choose 6 hours from:		
SOCY 210	Sociology of the Family	6
SOCY 211	Social Problems	
SOCY 216	Human Population	
SOCY 313	Sociology of Disaster	

SOCY 316	Social Psychology	
SOCY 329	Topics in Sociology	
SOCY 441	Urban Society	

INEQUALITY AND DIFFERENCE BLOCK

undefined - Choose 3 hours from:		
SOCY 307	African-American Social Thought	3
SOCY 308	Soc of Afr-Amer and Lat Educ	
SOCY 315	Race and Ethnic Relations	
SOCY 319	Social Stratification	
SOCY 329	Topics in Sociology (Topics: Feminist Theory)	
SOCY 329	Topics in Sociology (Topics: Gender)	

Total Hours **31**

Req Related for Sociology

Code	Title	Hours
Elements of Statistics I (C- or higher)		
MATH 130	Elements of Statistics 1	3
MATH 130 or another advanced mathematical statistics course is a prerequisite for SOCY 302, Social Statistics.		

Total Hours **3**

Sociology, B.A. - Criminology Option

The Millersville University Sociology program enables students to develop a sociological imagination with which they can understand their place in and responsibility for the world around them. Students seeking a Bachelor of Arts (B.A.) in Sociology develop a specialized skill set that allows them to investigate and comprehend the social world, in addition to acquiring knowledge on various sociological topics such as families, social class, gender and race. This skill set includes theoretical understandings, statistical techniques, data analysis and research methods. Students who select the Criminology option within the Sociology major also develop a specialized skill set with which they can investigate and comprehend the social world. This option encourages students to focus specifically on criminological topics, which include courts and policing, corrections and juvenile delinquency.

Economics

The flexible nature of Economics, and the fact that it overlaps with diverse areas such as Business, Law, Politics, Health Care, and the Environment, makes Economics a dynamic and marketable area of study. Today's educators, government officials, and business leaders are aware of the crucial role economics plays in building of a more productive and equitable world. Economists are at the center of power all over the world. Within the last few decades, the economist has become a central figure helping corporations reach their goals. The economist can be found advising governments on urban problems, unemployment, inflation, and financial markets. Recently, economics has been introduced into the K-12 curricula creating a higher demand for economics graduates who wish to teach at all levels.

The Department of Economics at Millersville University able to offer students a diverse curriculum to fit their needs, prepare them to pursue further studies, or to enter a variety of careers. Millersville economics students receive personalized instruction in the classroom, individualized counsel outside of class, opportunities for hands-on experience, and counsel in career pursuits.

the programs

- Economics Minor (p. 92)
- Economics, B.A. (p. 92)

the faculty

Baker, Ronald; Associate Professor

College of Arts, Humanities and Social Sciences

B.S., St. Vincent College, 1981; M.A., Indiana University, 2000; Ph.D., Ibid., 2005

Gumpper, Michael; Professor

College of Arts, Humanities and Social Sciences

B.A., SUNY at Geneseo, 1987; M.A., University of Kentucky, 1993; Ph.D., Ibid., 1998

Madden, Kirsten; Associate Professor

College of Arts, Humanities and Social Sciences

B.A. University of Alabama at Tuscaloosa, 1986; Ph.D., University of North Carolina- Chapel Hill, 1995

McPherson, Sandra; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Bemidji State University, 1991; M.A., Indiana University, 1993; Ph.D., Ibid., 1998

Smith, Kenneth; Associate Professor

College of Arts, Humanities and Social Sciences

B.S., University of Minnesota, 1986; M.S., University of Wisconsin-Madison, 1989; Ph.D., Ibid., 1993

Suliman, Osman; Professor

College of Arts, Humanities and Social Sciences

B.S., University of Khartoum (Sudan), 1977; M.A., Indiana University, 1979; Ph.D., Ibid., 1984

the courses

ECON 100: 3 s.h.

Introductory Economics (G3)

Introduction to economics as a social science for nonmajors or students interested in taking ECON 101 or 102 who would like a preparatory course. Introduction to fundamental economic concepts, economic policy and global markets. Class activities and simulations complement an emphasis on current events. No credit towards an economics major or minor or BSE social studies major. Offered periodically.

ECON 101: 3 s.h.

Principles of Macroeconomics (G3)

Introduction to macroeconomic analysis concentrating on national income, price levels, employment, monetary policy and fiscal policy with introductory analysis of the global economy. To be successful, it is recommended that students be proficient in algebra (the equivalent of successfully completing MATH 101 or MPT equivalent); however MATH 101 is not a pre-requisite. Offered in fall, spring.

ECON 101H: 3 s.h.

Hnrs:Prin of Macroeconomics (G3)

Hnrs:Prin of Macroeconomics

ECON 102: 3 s.h.

Principles of Microeconomics (G3)

Introduction to microeconomic analysis concentrating on consumer and producer behavior, competitive and other markets, public policy and government regulation. To be successful, it is recommended that students be proficient in algebra (the equivalent of successfully completing MATH 101 or MPT equivalent); however MATH 101 is not a pre-requisite. Offered in fall, spring.

ECON 102H: 3 s.h.

Hnrs:Prin of Microeconomics (G3)

Hnrs:Prin of Microeconomics

ECON 179: 3 s.h.

Experimental

Experimental

ECON 203: 3 s.h.

Introduction to World Economy (G3)

An introductory course analyzing and comparing global economies, trade and economic development. This course does not count toward the major, but qualifies for BSE social studies major and for the minor. MATH 101 or MPT equivalent is highly recommended prior to taking this course. Offered in fall, spring. Prereq: ECON 100, 101 or 102.

ECON 215: 3 s.h.

Money, Credit, and Banking (G3)

Survey of monetary and banking institutions, policies and practices, including study of monetary theory. Offered in fall, occasionally in spring. Prereq: ECON 101.

ECON 225: 3 s.h.

Comparative Economic Systems (G3, W)

Analysis of economic systems in France, the former Yugoslavia, China, Japan, the United Kingdom, the former Soviet Union and the United States. Emphasis varies with each offering at the discretion of the instructor. Offered in spring. Prereq: ECON 101, ENGL 110.

ECON 226: 3 s.h.

Area Studies (G3)

Analysis of regional economies such as Africa, Asia or Latin America. The area of study will be specified by the instructor expected to teach the course. Offered periodically. Prereq: ECON 101 or 102.

ECON 231: 3 s.h.

Applied Statistics 1 (G3)

Presentations of data, measures of central tendency and variation, and index numbers. Introduction to probability theory, sampling and inference and regression and time series analysis. Offered in fall, spring.

ECON 231H: 3 s.h.

Hon: Applied Statistics 1 (G3)

ECON 235: 3 s.h.

Mathematical Economics

Static analysis in economics, consumer and firm equilibrium, marginal analysis, optimization problems. Preliminary use of algebra and calculus for business and economic applications. Offered infrequently. Prereq: ECON 101, 102; MATH 101 or equivalent.

ECON 246: 3 s.h.

Econ Health and Welfare Prgm (G3)

Analysis of consumer theory, firm theory and market failure within the context of health economics. Emphasis on the institutions involved in health care provision, labor markets for health care professionals and market structure and government regulation. Offered in fall. Prereq: ECON 102.

ECON 300: 3-12 s.h.**Co-Op Ed Experience in Econ**

Co-Op Ed Experience in Econ

ECON 305: 3 s.h.**Economics in Film (D, W)**

This course utilizes film as a bridge between real economic life and scholarly treatment of the relevant issues. The course emphasizes critical thinking and synthesis of economic ideas. Students must also engage in questioning the obvious, exploring meaning, and writing about issues from films incisively and analytically following the scientific method. While maintaining rigor in their writing, students must state clearly their hypothesis and empirical methodology. Data collection includes primary data, surveys, personal interviews, and focus groups (culturally diverse groups related to the underlying socioeconomic issue). Prereq: ECON 100 or 101 or 102; COMM 100; ENGL 110 and junior status.

ECON 307: 3 s.h.**Environmental Economics (G3, W)**

Microeconomic theory applied to the problems of pollution control, sustainability, and valuation of environmental goods and services. Topics include economic efficiency, externalities, public goods, benefit-cost analysis and environmental policy. Content includes economic theory, critical analysis, and problem solving applied to applications of economic efficiency, welfare analysis, and optimal pollution abatement policy. Offered in spring. Prereq: ECON 102, ENGL 110, and Math 101 or MATH placement beyond MATH 101 (MATH 151, 155H, 160, 161, 163H)

ECON 310: 3 s.h.**Economics of Justice (P)**

Economic concepts and models are used to explain laws and legal situations. Economics is applied in some of the principal areas of the law: property, contracts, torts and crime. Offered infrequently. Prereq: ENGL 110, COMM 100, junior status, ECON 102, BUAD 202, or permission of instructor.

ECON 316: 3 s.h.**Public Finance (G3)**

Economic aspects of governmental budgeting emphasizing fiscal policy including impact of taxation and expenditures. Topics include the allocation, distribution and stabilization effects of the public household. Offered in spring. Prereq: ECON 101, 102.

ECON 318: 3 s.h.**Intermediate Microeconomics (G3)**

Similar in scope to ECON 102 with major emphasis on the further development and refinement of tools of economic analysis. Offered in spring. Prereq: ECON 101, 102 and MATH 151 or 161.

ECON 318H: 3 s.h.**H:Intermediate Microeconomics (G3)****ECON 319: 3 s.h.****Intermediate Macroeconomics (G3)**

Similar in scope to 101, with major emphasis on the determination of the economy's total output, the price level and the level of employment. The course incorporates the interaction of the market for goods and services, the assets market and the labor market. Offered in fall. Prereq: ECON 101.

ECON 323: 3 s.h.**Games and Experiments in Econ (G3)**

This course presents how economic theory is used to explain decisions of economic agents (e.g., consumers, firms or the government) in markets and strategic environments where the outcomes depend on the interaction of the decisions of the agents. Tests of economic theory predictions in the form of laboratory experiments will also be discussed and implemented. The areas of study include market behavior under various institutional settings, allocation decisions in settings with externalities, and individual choice and uncertainty. Offered annually. Prereq: ECON 102 or 102H, and ENGL 110.

ECON 325: 3 s.h.**International Economics (G3)**

Theory of international trade, commercial policy and trade in relation to economic development, balance of payments and the foreign exchange market, international monetary developments, foreign aid and economic growth. Offered in spring. Prereq: ECON 101, 102.

ECON 325H: 3 s.h.**Hon: Intl Economics (G3)****ECON 326: 3 s.h.****Economic Growth and Development (G3)**

Introduction to economic characteristics and problems of less developed countries and to associated theories and policies. Offered annually. Prereq: ECON 101, 102; ENGL 110.

ECON 327: 3 s.h.**Women and Global Econ Develop (D, P)**

Theoretical and case-based examination of women in the political economy of "less developed" economies. Issues covered include women's experiences with economic development; effects of economic development on women's status, roles, workloads and resource access; effective methods of empowerment for women experiencing contemporary economic development; and targeting gender in development, particularly through grassroots efforts. Offered annually. Prereq: ECON 101 or 102, COMM 100, ENGL 110, junior status.

ECON 333: 3 s.h.**Econometrics**

The estimation and hypothesis-testing of economic models, principally using regression techniques. Topics include linear models, time series analysis and simultaneous equations models. The uses and limitations of these models for economic forecasting are examined with the aid of computers. Offered in spring. Prereq: ECON 101, 102 and either 231 or 332.

ECON 333H: 3 s.h.**H:Econometrics****ECON 335: 3 s.h.****Forecasting and Analytics (G3)**

Emphasis is on authentic learning of the forecasting and analytics methods that practitioners have found most useful. Prereq: ECON 231 or MATH 235, and ECON 101.

ECON 345: 3 s.h.**Labor Economics (G3)**

The labor market and labor forces, theories of wages and employment, security, determinants of trade union policy and governmental manpower policies. Offered in spring. Prereq: ECON 101, 102.

ECON 345H: 3 s.h.**HNRS:Labor Economics (G3)**

ECON 355: 3 s.h.**Econ of Sex, Drugs, & Religion (G3, P)**

This course applies consumer theory, firm theory, and market failure to the economics of social issues via the broad, and often controversial, topics of sex, drugs, and religion. Emphasis is placed on the current economic, political, and legal aspects of these issues and therefore specific topics may change depending on current events. Students will explore these topics and lessons via research articles published in academic journals and by research published by the top economic research organizations. Prerequisites: ECON 102 and MATH 101 or math placement beyond 101, MATH 130 or equivalent.

ECON 365: 3 s.h.**History of Economic Thought (G3)**

Examination of a variety of theoretical and philosophical perspectives in economics developed during the past few hundred years. The ideas of well-known economists such as Adam Smith and Karl Marx are typically analyzed, as is the thought of a selection of lesser known contributors to the discipline. Offered once every two years. Prereq: ECON 101, 102.

ECON 375: 3 s.h.**Econ of Industrial Organization (G3)**

The study of (1) how enterprises function within a variety of market structures and (2) how well the outcomes fit the public interest. Specific topics include market share, barriers, concentration, vertical power, economies of scale, pricing behavior, mergers and efficiency. Offered in spring. Prereq: ECON 101 and 102.

ECON 379: 3 s.h.**Experimental**

Experimental

ECON 400: 3-12 s.h.**Co-Op Ed Experience in Econ**

Co-Op Ed Experience in Econ

ECON 479: 3 s.h.**Experimental**

Experimental

ECON 488: 3 s.h.**Seminar in Economics (W)**

Students participate in the process of knowledge creation by generating a research question in economics and undertaking in-depth analysis of that question. The course is structured to support student development and application of critical analytical skills through theoretical and/or empirical methods, research and information management skills, and writing and presentation skills. The course emphasizes the process of research and writing, culminating in three final products: the paper, the poster and the presentation. Majors only. Offered annually. Prereq: ENGL 110, minimum 12 hours of economics or permission of instructor.

ECON 489: 1-4 s.h.**Honors Course**

Honors Courses/Thesis

ECON 498: 1-3 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

ECON 499: 1-4 s.h.**Departmental Honors**

Honors Courses/Thesis

ECON 500: 3-12 s.h.**Co-Op Ed Experience in Econ**

Co-Op Ed Experience in Econ

Economics Minor

The 18-credit Economics Minor provides training in core economics principles and theory and depth in applied economic analysis. The Economics Minor provides an excellent complementary program to a wide variety of majors including those in Business, Mathematics, and Government.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Economics

Code	Title	Hours
ECON 101	Principles of Macroeconomics	3
ECON 102	Principles of Microeconomics	3
Intermediate Microeconomics or Intermediate Macroeconomics - Choose 1 of the following:		3
ECON 318	Intermediate Microeconomics	
ECON 319	Intermediate Macroeconomics	
300/400 Level Economics Electives - Choose 6 hours from:		6
Any 3-level ECON course(s)		
Any 4-level ECON course(s)		
BUAD 310	Economics of Justice	
Economics Elective - Choose 3 hours from:		3
Any ECON course(s)		
Choose economics electives in consultation with your advisor. 2 of your electives must be at the 300-level or above.		
Total Hours		18

Economics, B.A.

The Economics Department expects all students graduating with an Economics degree to have a sound understanding of economic principles and theory and demonstrate the ability to apply principles and theory to issues of everyday life and analysis of important policy issues. The Economics B.A. Program provides training in economic principles and theory, quantitative analysis, and research and presentation skills. The Economics curriculum emphasizes critical-thinking and problem-solving skills appropriate to a variety of careers.

The United States Bureau of Labor Statistics estimates that employment for Economists will grow six percent over the next decade – somewhat faster than overall national employment. According to the National

Association of Colleges and Employers, starting salaries for Economists with bachelor's degrees are the highest among social science and humanities graduate

Major in Economics, BA

Code	Title	Hours
ECON 101	Principles of Macroeconomics	3
ECON 102	Principles of Microeconomics	3
Applied Statistics 1		3
ECON 231	Applied Statistics 1	
ECON 318	Intermediate Microeconomics	3
ECON 319	Intermediate Macroeconomics	3
ECON 333	Econometrics	3
ECON 488	Seminar in Economics	3
Economics Electives - Choose 15 hours from:		15
ECON 215	Money, Credit, and Banking	
ECON 225	Comparative Economic Systems	
ECON 226	Area Studies	
ECON 235	Mathematical Economics	
ECON 246	Econ Health and Welfare Prgm	
ECON 305	Economics in Film	
ECON 307	Environmental Economics	
ECON 310	Economics of Justice	
ECON 316	Public Finance	
ECON 323	Games and Experiments in Econ	
ECON 325	International Economics	
ECON 326	Economic Growth and Developmnt	
ECON 327	Women and Global Econ Develop	
ECON 335	Forecasting and Analytics	
ECON 345	Labor Economics	
ECON 355	Econ of Sex, Drugs, & Religion	
ECON 375	Econ of Industrial Orgnization	
ECON 379	Experimental	
ECON 498	Independent Study	
Total Hours		36

Req Related for Economics, BA

Code	Title	Hours
MATHEMATICS		
Calculus for Management or Calculus I - Choose 1 of the following:		4
MATH 151	Calculus for Management	
MATH 161	Calculus 1	
Total Hours		4

Social Studies, B.S.Ed. - Economics Advised

Major in Social Studies Economics, BSE

Code	Title	Hours
MAJOR REQUIRED CORE FOUNDATION		
ECON 100	Introductory Economics	3
ECON 203	Introduction to World Economy	3
GEOG 120	Human Geography	3

Geography Course - Choose 1 of the following:		3
GEOG 141	World Regional Geography	
GEOG 226	Political Geography	
GEOG 248	Geography of Africa	
GEOG 342	Europe	
GEOG 343	Latin America & the Caribbean	
GEOG 344	North America	
GEOG 281	Maps and GIS	3
GOVT 111	Introduction to American Government	3
GOVT 221	Introduction to Comparative Political Systems	3
GOVT 251	Introduction to Global Politics	3
History Electives - Choose 2 of the following:		6
HIST 101	Europe and the World 1350-1789	
HIST 102	Europe and World 1789-Present	
HIST 206	World Culture & Religion to 1500	
HIST 280	Pre-Colonial Africa	
HIST 105	History Matters	3
HIST 106	Contours of US History	3
HIST 205	The Art & Craft of History	3
PSYC 100	General Psychology	3
SOCY 210	Sociology of the Family	3
Total Hours		45

BSE SST Concentration Courses

Code	Title	Hours
Due to the interdisciplinary nature of the social studies major, please work closely with your advisor to select courses appropriate to your plan. You must take 15 total credits to complete the concentration.		
Geography		0
You may take up to 9 credits of Geography (GEOG) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Government		0
You may take up to 9 credits of Government (GOVT) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
History		0
You may take up to 9 credits of History (HIST) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Anthropology		0
You may take up to 6 credits of Anthropology (ANTH) courses toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Psychology		0
You may take up to 6 credits of Psychology (PSYC) at the 200-level or higher toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Sociology		0

You may take up to 6 credits of Sociology (SOCY) courses toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Total Hours 0

Professional Education

Code	Title	Hours
EDUCATIONAL FOUNDATIONS		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
REQUIRED EDUCATION COURSES		
EDSE 321	Issues in Secondary Education	3
EDFN 330	Instructional Technology, Design & Assessment	3
EDSE 433	Teaching of Secondary Social Studies	3
ACCOMMODATIONS AND ADAPTATIONS		
EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3
STUDENT TEACHING		
EDSE 471	Student Teaching Seminar	3
EDSS 461	Student Teaching in Soc Sci	9
Total Hours		33

Advanced Professional Studies, BSE

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		
APS REQUIREMENTS		
English Composition - Choose 1 of the following:		3
ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211 Foundations Modern Education 6
& EDFN 241 and Psychological Foundations of Teaching

48 earned (transcript) credit hours are required

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours 12

English & World Languages

ENGLISH

English majors may pursue a B.A. or B.S.Ed. degree. With planning, either degree may include an optional concentration in a specialized area (ESL/ Linguistics, film, or writing studies) if desired.

English majors should take the ENGL 220 Introduction to Language Study and ENGL 237 Literary Research and Analysis in their first year. Forty-five credit hours in English (which includes Advanced Writing) are required for graduation.

Students should consult regularly with their advisors about their academic goals as revisions do occur to update and improve English's programs of study. Advisors and the Degree Audit Reporting system can provide up-to-date information in between catalog releases.

WORLD LANGUAGES

Our program in Language and Culture Studies is designed to help students acquire a high level of proficiency in a specific language and deep knowledge about the cultures related to the language. Students develop skills in linguistic, cultural, and literary analysis to be prepared for careers in a field where they can use their second language at a professional level. We offer the following languages:

- Spanish
- Italian (elementary level)
- Japanese (elementary and intermediate levels)

Our teacher education program in Spanish is recognized for excellence by the American Council on the Teaching of Foreign Languages.

Multidisciplinary Studies (MDST) and PreLaw Connections

The English Department houses courses for various MDSTs, including science writing. If you are interested in majoring or double majoring in any of these fields, talk to Dr. Craven or Dr. Corkery. English majors planning to pursue a career in law should speak to the department's prelaw advisor, Dr. Craven, to select courses.

the programs

- American Literature Minor (p. 106)
- British Literature Minor (p. 106)
- Creative Writing & Publishing Minor (p. 107)
- Culture Studies Minor (p. 107)
- English as a Second Language/Linguistics Minor (p. 107)
- English Minor (p. 107)
- English, B.A. (p. 107)
- English, B.A. - English as a Second Language/Linguistics (p. 105)
- English, B.A. - Film Studies Option (p. 109)
- English, B.A. - Writing Studies (p. 110)
- English, B.S.Ed. (p. 110)
- English, B.S.Ed. - Film Studies Option (p. 110)
- English, B.S.Ed. - Writing Studies Option (p. 111)
- Film Studies Minor (p. 111)
- Language & Culture Studies, B.A. - Culture Studies - Spanish (p. 111)

- Language & Culture Studies, B.A. - Language Studies - Spanish (p. 112)
- Language & Culture Studies, B.A. - Teacher Education - Spanish (p. 112)
- Language Studies Minor (p. 112)
- Writing Studies Minor (p. 113)

the faculty

Anderson, Joyce; Instructor
College of Arts, Humanities and Social Sciences
B.A., Eastern College, 1978; M.A., Millersville University, 1984

Antolin, Marco; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., University of Valladolid (Spain), 1996; M.A., Ibid., 2000; Ph.D., Ibid., 2002

Baldys, Emily; Assistant Professor
College of Arts, Humanities and Social Sciences
B.A., Bryn Mawr College, 2005; M.A., The Pennsylvania State University, 2009; Ph.D., Ibid., 2017

Corkery, Caleb; Professor
College of Arts, Humanities and Social Sciences
B.A., Carnegie Mellon University, 1985; M.F.A., Brooklyn College, 1994; M.A., University of Maryland, 1999; Ph.D., Ibid., 2004

Craven, Roberta; Professor
College of Arts, Humanities and Social Sciences
B.S., University of North Carolina-Chapel Hill, 1984; Ph.D., Ibid., 1999.

Farkas, Kerrie; Professor
College of Arts, Humanities and Social Sciences
B.A., The College of New Jersey, 1992; M.A., Ibid., 1994; Ph.D., Ken State University, 2003

Jakubiak, Katarzyna; Associate Professor
College of Arts, Humanities and Social Sciences
M.A., Jagiellonian University (Poland), 1997; M.A., University of Northern Iowa, 1999; Ph.D., Illinois State University, 2006

Mando, Justin; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., University of Vermont, 2004; M.A., Carnegie Mellon University, 2011; Ph.D. Ibid., 2016

Mayers, Timothy; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., University of Scranton, 1988.; M.A., SUNY at Binghamton, 1990; Ph.D., University of Rhode Island, 1998

McCollum-Clark, Kim; Associate Professor
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B.A., Guilford College, 1988; M.A., The Pennsylvania State University, 1992; Ph.D., Ibid., 1995

Miller, Timothy; Professor
College of Arts, Humanities and Social Sciences
B.A., State University of New York at Binghamton, 1976; M.A., Ibid., 1979; Ph.D., Ibid., 1982

Mondello, Kaitlin; Assistant Professor
College of Arts, Humanities and Social Sciences

B.A., Stetson University, 2004; M.A., *Ibid.*, 2008; Ph.D., The Graduate Center, CUNY, 2018

Ording, Dominic; Assistant Professor

College of Arts, Humanities and Social Sciences

B.A., Michigan State University, 1985; M.A., *Ibid.*, 1989; M.A., *Ibid.*, 1997; Ph.D., *Ibid.*, 2003

Pfannenstiel, A Nicole; Associate Professor

College of Arts, Humanities and Social Sciences

B.S., Northern Arizona University, 2003; M.A., Arizona State University (2008); Ph.D., *Ibid.*, 2013

Rea, Joshua; Assistant Professor

College of Arts, Humanities and Social Sciences

B.A., University of Mount Union, 2012; M.A., University of Louisville, 2015; Ph.D., University of South Florida, 2020

Shin, Duckhee; Assistant Professor

College of Arts, Humanities and Social Sciences

B.A., Sogang University (South Korea), 1978; M.A., *Ibid.*, 1981; Ph.D., Indiana University, 1991

Zhang, Yufeng; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Shanghai International Studies University (China), 1994; M.A., University of Toledo, 2001; Ph.D., Purdue University

the courses

ENGL 110: 3 s.h.

English Composition

Required course in general education. Introduces strategies of expository and argumentative writing and provides practice in standard written English. Individual instructors use print or nonprint media to achieve this goal. Evaluations based on competency, not on progress. Minimum grade of C- designates competency.

ENGL 110H: 3 s.h.

Hnrs:English Composition

Develops research and analytical skills; presumes basic writing competence. Students who demonstrate competency in ENGL 110 may be exempt from this requirement with written approval of the honors program director.

ENGL 111: 1 s.h.

English Composition Lab

Assists students through workshop/lab format with assignments in accompanying English Composition course. Co-requisite ENGL 110.

ENGL 179: 3 s.h.

Experimental

Experimental

ENGL 220: 3 s.h.

Introduction to Language Study (G1)

Study of the historical development and present characteristics of the English language, the process of language learning, social and geographical dialects and semantics. An overview of linguistic investigation.

ENGL 221: 3 s.h.

Intro to Linguistic Analysis (G1)

Investigates sounds, word structure, syntax and semantics of American English from the point of view of modern linguistics. Prereq: ENGL 110.

ENGL 221H: 3 s.h.

Hon: Intro to Linguistic Analy (G1)

Honors Introduction to Linguistic Analysis

ENGL 230: 3 s.h.

Introduction to Literature (G1)

Reading, analysis and interpretation of various literary genres (poetry, fiction and drama) selected from different periods with emphasis on cultural contexts. Not for English major credit.

ENGL 231: 3 s.h.

World Literature 1 (G1)

Survey of literary development from earliest records to 1650. Emphasis on historical, aesthetic and philosophical aspects of world literature.

ENGL 232: 3 s.h.

World Literature 2 (G1)

Continuation of ENGL 231 from 1650 to present.

ENGL 232H: 3 s.h.

Hnrs: World Literature 2 (G1, W)

ENGL 233: 3 s.h.

Early British Literature (G1)

Survey of British literature from Anglo-Saxon times to 1800. Texts studied span early tales like Beowulf and King Arthur legends through Shakespeare's plays up to the rise of the novel in the 18th century. Students will examine historical context and thematic connections as they observe authors wrestling with social problems and larger questions about the nature of faith and heroism, love and life, the monstrous and magical. Readings selected to include works by women writers, writers of color, and writers speaking from the margins of British society.

ENGL 234: 3 s.h.

Later British Literature (G1)

Survey of British literature including works from the early Romantic period through the early 21st century. Explores historical context and thematic connections as students examine how authors such as Jane Austen, Charles Dickens, Virginia Woolf, and Zadie Smith respond and contribute to the vast social changes attending a period that spans the industrial revolution, two world wars, the expansion of civil liberties, and the rise of postmodernism. Readings selected to include works by women writers, writers of color, and writers speaking from the margins of British society. ENGL 233 is not a prerequisite.

ENGL 235: 3 s.h.

American Literary Tradition I (G1)

This survey-style course looks to the literary foundations of America from Native American oral literatures to early Americans' various writings through the 1860s and explores issues, conflicts, preoccupations, and themes during this period.

ENGL 236: 3 s.h.

American Literary Tradition II (G1)

Survey of American literature from 1865 to present. ENGL 235 is not a prerequisite.

ENGL 237: 3 s.h.

Literary Research and Analysis

Textual, critical and rhetorical analyses of literary genres. Designed to familiarize the student with literary theory and interpretation of genres through research and analytical writing. Prereq: ENGL 110.

ENGL 240: 3 s.h.

The Art of Film (G1)

Interpretation of film as an art form, including technical and artistic aspects of film making. Explores theoretical approaches to cinema.

ENGL 240H: 3 s.h.**Hnrs:Introduction to Film (G1, W)**

Honors Introduction to Film

ENGL 241H: 3 s.h.**H:Explorations in World Lit (D, G1, W)**

Investigates connections among a selection of representative literary works from at least three different linguistic traditions and various historical periods in both Western and non-Western cultures. Prereq: ENGL 110, Member University Honors College or 3.35 GPA.

ENGL 242: 3 s.h.**Reading Our World: (G1, W)**

Applies critical lenses from fields of English Studies to a selection of texts on a particular theme. Engages students in interpreting current themes across cultures and/or time periods. Students will explore the topic from different perspectives by learning methods for critiquing texts, including new media. Themes/topics determined by instructor.

ENGL 242H: 3 s.h.**Hnrs: Reading our World (G1, W)****ENGL 250H: 3 s.h.****Hon: Press & Society (G1, W)****ENGL 279: 3 s.h.****Experimental**

Experimental

ENGL 292: 3 s.h.**Science Fiction (G1, W)**

The nature and development of science fiction from Jules Verne and H. G. Wells to major writers of the present, with emphasis on methods of extrapolation - descriptions of consistent, altered frames of references based on scientific knowledge and historical, social or cultural patterns. Emphasis on multiple lines of inquiry or analysis. Prereq: ENGL 110.

ENGL 292H: 3 s.h.**Hon: Science Fiction (G1, W)****ENGL 300: 3-12 s.h.****English Internship**

A variety of options are available for English majors to apply their fields of study in professional contexts. Prereq: ENGL 110, 24 s.h. and permission of COOP coordinator. An (AW) indicates that the course counts toward the advanced writing part of the general education requirements.

ENGL 315: 3 s.h.**Advanced Reporting (W)**

A course in reporting news and features that emphasizes experience in the field completing authentic journalistic assignments. Includes the study of traditional and nontraditional journalistic forms. Prereq: ENGL 313.

ENGL 321: 3 s.h.**Modern Syntax (G1)**

Analysis of the syntax of American English. Prereq: ENGL 110 and 220 or 221 or permission of instructor.

ENGL 322: 3 s.h.**History of English (G1, W)**

Examines language change and its effects on the development of English phonology, morphology, syntax and semantics. Prereq: ENGL 110.

ENGL 322H: 3 s.h.**Hon: History of English (G1, W)****ENGL 331: 3 s.h.****Special Topics in Literature**

Thematic investigation of a significant literary topic, major author, or literary style. May be taken more than once for credit since the topic varies. Prereq: ENGL 110.

ENGL 333: 3 s.h.**African-American Literature 1 (D, G1, W)**

Major writers and genres to circa 1935, with emphasis on the cultural roots and aesthetics within the American literary tradition. Prereq: ENGL 110.

ENGL 333H: 3 s.h.**Hnrs:African American Lit 1 (D, G1, W)**

Honors African American Literature 1

ENGL 334: 3 s.h.**African American Literature 2 (D, G1, W)**

Major writers from circa 1935 to the present, with emphasis on literary movements, critical discourses and the relationship between literature and its historical contexts. May use thematic approach. Covers various genres, including oral tradition. Considers the black experience in the U.S. in an interdisciplinary context that analyzes cultural production. Prereq: ENGL 110.

ENGL 334H: 3 s.h.**Hnrs:African American Lit 2 (D, G1, W)**

Honors African American Literature 2

ENGL 336: 3 s.h.**New Dimensions to World Lit (D, G1, W)**

Introduces students to non-Western literary traditions through a theme selected by the instructor. Students will increase their awareness and appreciation of cultural differences and the art of literature. ENGL 110.

ENGL 337: 3 s.h.**Women Writers in Middle Ages (P)**

Investigates the work of women who lived and wrote in the medieval period, primarily (though not entirely) in Europe. Prereq: COMM 100, ENGL 110, junior status.

ENGL 338: 3 s.h.**Folklore and Literature (G1)**

Folklore, with emphasis on literature, history, region, gender and class. Ballads, tales, riddles, legends, proverbs and other forms from American, English and international sources. Includes field collection projects. Prereq: ENGL 110.

ENGL 338H: 3 s.h.**H:Folklore and Literature (G1, W)****ENGL 343: 3 s.h.****Fiction Seminar (D, G1, W)**

Seminar with emphasis on fiction as a literary genre. Examines fictional narratives, including the novel, creative nonfiction, novella and short story. Reflects comparative and/or transnational perspectives. Prereq: ENGL 110.

ENGL 347: 3 s.h.**Ethnicity in Film (D, G1)**

Examines issues of ethnicity in cinema. Designed to enhance understanding of the relationships between the ethnic experience and film's representations of it. Studied ethnicities (African Americans, Latinx, etc.) vary by semester. Prereq: COMM 100, ENGL 110.

ENGL 379: 3 s.h.**Experimental**

Experimental

ENGL 400: 3-9 s.h.**English Internship**

A variety of options are available for English majors to apply their fields of study in professional contexts. Prereq: ENGL 110, 24 s.h. and permission of COOP coordinator. An (AW) indicates that the course counts toward the advanced writing part of the general education requirements.

ENGL 401: 3 s.h.**Old Eng Lang and Literature (G1, W)**

An introduction to the structure of the Old English language and to Old English prose and poetry. Prereq: ENGL 110.

ENGL 402: 3 s.h.**Middle Eng Lang and Literature (W)**

An introduction to the structure of the Middle English language and to Middle English prose and poetry exclusive of Chaucer. Prereq: ENGL 110, 237.

ENGL 403: 3 s.h.**Chaucer**

Chaucer's life, times and important works; study of the language and pronunciation. Prereq: ENGL 110, 237.

ENGL 404: 3 s.h.**The English Renaissance**

Nondramatic literature during the late 15th and 16th centuries from "Morte d'Arthur" through the early 17th century, prose and verse during threigns of Lancaster, York, Tudor. Prereq: ENGL 110, 237.

ENGL 405: 3 s.h.**Shakespeare (G1, W)**

A study of several of Shakespeare's plays and some of his non-dramatic poetry, set in the historical, cultural, social, and literary context of the Renaissance, with special attention to the enduring, abiding concerns of human nature. Prereq: ENGL 110.

ENGL 405H: 3 s.h.**Hhrs:Shakespeare (G1, W)**

Shakespeare's life, works and times; detailed consideration of major plays. Prereq: ENGL 110.

ENGL 406: 3 s.h.**17th Cen Lit Prior Restoration**

Metaphysical and cavalier poetry and other nondramatic literature from 1600 to 1660, exclusive of Milton's poetry. Prereq: ENGL 110, 237.

ENGL 407: 3 s.h.**Milton**

A study of Milton's major poetry and selected prose works against the background of the Puritan Revolution. Prereq: ENGL 110.

ENGL 407H: 3 s.h.**Hhrs:Milton**

A study of Milton's major poetry and selected prose works against the background of the Puritan Revolution. Prereq: ENGL 110.

ENGL 411: 3 s.h.**Romantic Literature**

Rise of romanticism in later 18th century to the beginning of Victorianism. Emphasis on poetry and criticism between 1798 and 1832. Prereq: ENGL 110, 237.

ENGL 412: 3 s.h.**Victorian Literature: Madwomen & Decadent Men (G1, W)**

Literary figures and their works against social and political backgrounds from the start of Victoria's reign through the start of World War I, a period marked by rapid social change impelled by industrialism and imperial expansion. Examines canonical authors (e.g. the Brontës, Charles Darwin, Christina Rossetti, and Oscar Wilde) as well as lesser-known writers (e.g. the early feminist "new women" and writers who documented the consequences of colonialism). Explores how authors negotiate nineteenth-century anxieties regarding class conflict and the industrial "condition of England"; shifting conceptions of gender and sexuality; tensions between science and religion; the ethics of imperialism; and evolving theories of the modern arts. Prereq ENGL 110.

ENGL 413: 3 s.h.**British Literature Since 1914**

Literary figures and works against the background of crisis in the 20th century from the onset of World War I to the present. New movements, attitudes and experimental techniques. Prereq: ENGL 110, 237.

ENGL 414: 3 s.h.**The British Novel (G1, W)**

Studies in the British novel. The course emphasis will vary from semester to semester, focusing on 18th-, 19th- 20th- and/or 21st-century novels. May be taken more than once for credit since the content of the course varies. Prereq: ENGL 110.

ENGL 415: 3 s.h.**Seminar of British Writers**

Intensive study of the works of selected British writers. May be taken more than once for credit since the content varies. Prereq: ENGL 110.

ENGL 416: 3 s.h.**The Woman Writer (G1, W)**

Chronological study of British women writers of poetry, prose, criticism and/or drama. Authors studied varies. Prereq: ENGL 110.

ENGL 421: 3 s.h.**Early American Literature**

Examination of colonial and federal literature, with some discussion of the beginnings of Romanticism. Special attention to Bradstreet, Taylor, Edwards, Franklin, Wheatley, Brockden Brown, Irving and Cooper. Prereq: ENGL 110, 237.

ENGL 422: 3 s.h.**The American Renaissance**

Focuses on Transcendentalism and authors including Hawthorne, Poe, Thoreau, Melville, Emerson, Whitman and Dickinson. Prereq: ENGL 110, 237.

ENGL 423: 3 s.h.**Development of the Amer Novel**

Narrative fiction from early and middle parts of 19th century to "fin de siècle." Emphasizes the Romance, the Gothic tale and the rise of the novel. Prereq: ENGL 110, 237.

ENGL 424: 3 s.h.**Realism and Naturalism to 1920**

Studies stylistic, thematic and philosophic issues relating to literary realism and naturalism. Selections from writers including Twain, Howells, James, Crane, Norris, London and Dreiser. Prereq: ENGL 110, 237.

ENGL 425: 3 s.h.**Modern Amer Fiction, 1920-1945**

Important American fiction writers of the twentieth century with emphasis on major developments in ideas and techniques. Special attention to Anderson, Fitzgerald, Hemingway, Faulkner, Steinbeck and others. Prereq: ENGL 110, 237.

ENGL 426: 3 s.h.**Modern American Drama (G1, W)**

American drama from World War I to the present, with emphasis on significant developments in styles and techniques explored by such dramatists as O'Neill, Hellman, Williams, Miller, Albee and others. Prereq: ENGL 110.

ENGL 427: 3 s.h.**Modern American Poetry**

Study of major American poets, including Eliot, Pound, Frost, Stevens, Williams and others; or of a school such as the Imagists, the Fugitives and others. Prereq: ENGL 110, 237.

ENGL 428: 3 s.h.**Contemporary Amer Lit: 1945-P**

Major trends in poetry, fiction and drama since World War II. Emphasizes prominent authors including Barth, Bellow, Mailer, Oates, Updike, Plath, Olson, Shepard, Mamet and others. Prereq: ENGL 110, 237.

ENGL 429: 3 s.h.**Semr Sel Am Auth:**

Intensive study of the works of selected American authors. May be taken more than once for credit. Prereq: ENGL 110, 237.

ENGL 429H: 3 s.h.**Hnrs:Sem in Select Amer Authrs**

Hnrs:Sem in Select Amer Authrs

ENGL 430: 3 s.h.**Ethnic American Lit Since 1945 (D, P)**

Examines representative works of various ethnic groups in contemporary America. Develops an appreciation for and a critical understanding of multiculturalism and social tension reflected in contemporary ethnic literature. Discusses complex issues, such as race, ethnicity, power, gender and identity, that are involved in the process of Americanization. Prereq: COMM 100, ENGL 110 and junior status.

ENGL 430H: 3 s.h.**Hon: Ethnic Am Lit Since 1945 (D, P)****ENGL 431: 3 s.h.****Comparative Literature (P)**

Explores works from several literary traditions in world literature, using comparative and/or transnational perspectives. Examines correspondences between literary works in their historical and cultural contexts. May focus on a theme, a historical period or an aesthetic movement.

ENGL 431H: 3 s.h.**Hnrs: Comparative Lit 1: 1850-****ENGL 435: 3 s.h.****Journalism Thru Women's Prspctvs (P)**

Literary journalism, a genre that combines literary techniques with journalistic techniques, that focuses on the circumstances of women from a variety of cultures as writers and subjects of the genre. Offered infrequently. Prereq: COMM 100, ENGL 110 and junior status.

ENGL 441: 3 s.h.**Poetry (D, W)**

Seminar with emphasis on poetry as a genre. Topics may include prosody, poetry in translation, contemporary trends in verse and schools of poetry. Reflects comparative and/or transnational perspectives. Prereq: ENGL 110.

ENGL 441H: 3 s.h.**Hnrs:Poetry**

Seminar with emphasis on poetry as a genre. Topics may include prosody, poetry in translation, contemporary trends in verse and schools of poetry. Reflects comparative perspective. Prereq: ENGL 110, 237.

ENGL 442: 3 s.h.**Drama**

Seminar with emphasis on drama as a literary genre. Emphasis on masterpieces of drama in the Western world. Prereq: ENGL 110, 237.

ENGL 445: 3 s.h.**Short Story:Hist,Devel,Genres (G1)**

Covers history, development and genres of the short story, with a focus on matters of style, interdisciplinary dimensions, historico-cultural context and critical approaches. Offered annually. Prereq: ENGL 110, 237.

ENGL 445H: 3 s.h.**Hnrs: Short Story (G1)****ENGL 451: 3 s.h.****Literary Criticism (P)**

Seminar on major critics and theorists from Plato and Aristotle to selected modern critics. Explores representative critical trends and controversies. Prereq: ENGL 110, 237.

ENGL 460: 3 s.h.**Teach ESL Listening/Speaking**

Gain a deeper understanding of the nature of spoken English and investigate current approaches to the teaching of ESL listening and speaking skills. Learn effective techniques and ideas for teaching ESL listening and speaking; also learn to integrate listening and speaking with other language skills in ESL teaching. Prereq: ENGL 110.

ENGL 462: 3 s.h.**Dialects of American English (P)**

Study of the origin and the features of the regional and social dialects of American English. Prereq: COMM 100, ENGL 110 and junior status, and one course in linguistics or permission of instructor.

ENGL 462H: 3 s.h.**Hnrs:Dialects of American English (P)**

Honors Dialects of American English

ENGL 463: 3 s.h.**Applied Linguistics (G1, W)**

Application of linguistic theory to selected problems of language teaching and research. Prereq: ENGL 110 and one course in linguistics or permission of instructor.

ENGL 463H: 3 s.h.**H:Applied Linguistics****ENGL 464: 3 s.h.****Teaching Eng as Second Lang**

Approaches, methods and techniques appropriate to teaching standard English to speakers of other languages. Includes international tutoring opportunities. Prereq: ENGL 110 and permission of instructor.

ENGL 465: 3 s.h.**Special Topics in Lang: Sem**

Investigation of topics in linguistic science, may include generative metrics, morphophonics, tagmemic analysis; investigation of English language problems selected by students in conference with instructor. May be taken more than once for credit as topic varies. Prereq: ENGL 110 and 3 hours in English language study or permission of instructor.

ENGL 471H: 3 s.h.**Hon: Creative Writing****ENGL 473: 3 s.h.****Special Topics in Journalism**

Techniques and problems in journalism. Offered in spring. Prereq: ENGL 313.

ENGL 479: 1-3 s.h.**Experimental**

Experimental

ENGL 481: 3 s.h.**History Of Film (D, G1, W)**

Viewing/discussion of influential narrative films from early silents to recent independents. Technology-intensive course. Prereq: ENGL 110.

ENGL 482: 3 s.h.**Film and American Society (G1)**

Viewing/discussion of significant American films in relation to social and historical context. Technology-intensive course. Prereq: ENGL 110.

ENGL 483: 3 s.h.**Politics, Film & Electronic Media (P)**

Exploration of the relationships between media, history, politics and people during the 20th and 21st centuries. Prereq: COMM 100, ENGL 110 and junior status.

ENGL 483H: 3 s.h.**H:Politics,Film,Electrnc Media (P)**

Honors Politics, Film and Electronic Media

ENGL 484: 3 s.h.**Sci Fiction, Technology & Film (G1, W)**

Explores the relationships between film, technology, the environment, and society during the twentieth and twenty-first centuries. Discusses technological changes and human reactions to them, including the shifting relationships between technology, race, class, gender, and power. Prereq: COMM 100 and ENGL 110.

ENGL 486: 3 s.h.**Teaching Reading & Literature to Young Adults**

Inquiries into reading and literature in middle and high school classrooms. Special emphases on strategies for motivation, engagement and support in reading; creating appropriate learning contexts; expanding student choice and book selection; and alternative methods of assessing reading/ literature achievement. Required for B.S.Ed. in English. Course should be taken prior to Advanced Professional Studies block (preferably as juniors or seniors). Prereq: ENGL 110.

ENGL 487: 3 s.h.**Seminar in Teaching Writing (W)**

Explores the nature of writing instruction by balancing three stances: that of the writer, teacher and researcher. Engages students in a writers' workshop, developing inquiry through thoughtful discussions about writing pedagogy and by exploring new teaching processes in a case study of an adolescent writer. Must be taken prior to APS semester. Prereq or Coreq: ENGL 110, 311.

ENGL 487H: 3 s.h.**Hon: Seminar in Teaching Wrtg (W)**

Honors Seminar in Teaching Writing

ENGL 488: 3 s.h.**Teaching Secondary School English**

Specialized problems of English instruction. Required for B.S.Ed. in English. Prereq: ENGL 486, 487, successful completion of the social and psychological foundations block and admission to Advanced Professional Studies. Must be taken during semester immediately prior to EDSE 461, Student Teaching and Seminar. Must be taken concurrently with EDSE 321.

ENGL 488H: 3 s.h.**H: Teaching Sec School English****ENGL 489: 1-4 s.h.****Honors Course**

For information on independent study and departmental honors, see your adviser.

ENGL 498: 1-6 s.h.**Independent Study in English**

For information on independent study and departmental honors, see your adviser.

ENGL 499: 1-4 s.h.**Departmental Honors**

For information on independent study and departmental honors, see your adviser.

ENGL 500: 3-12 s.h.**Co-Op Ed Experience in English**

Co-Op Ed Experience in English

JAPN 101: 3 s.h.**Elementary Japanese 1 (G1)**

Introduction to language and culture. Fundamentals of grammar and syntax. Oral practice, short readings and practice in aural comprehension. Emphasis on learning useful everyday phrases and working toward accuracy in pronunciation. Offered infrequently.

JAPN 102: 3 s.h.**Elementary Japanese 2 (G1)**

Continuation of JAPN 101; emphasis on more complex syntactical structures while working toward greater proficiency in both productive (speaking and writing) and receptive (reading and listening) skills. Prereq: JAPN 101 or equivalent.

JAPN 179: 3 s.h.**Experimental**

Experimental

JAPN 201: 3 s.h.**Intermediate Japanese 1 (G1)**

Continuation of JAPN 102. Further development of syntactical and phonological structures. Thematic basis for oral and written communication. Builds on proficiency attained in 101-102 sequence. Prereq: JAPN 102.

JAPN 202: 3 s.h.**Intermediate Japanese 2 (G1)**

Continuation of JAPN 201. Further development of syntactical and phonological structures. Thematic basis for oral and written communication. Builds on proficiency attained in JAPN 201. Prereq: JAPN 201.

LANC 490: 3 s.h.**Sr Seminar: Lang & Cult Study**

The Language and Culture Studies Senior Seminar gives senior French, German, and Spanish majors with the Culture Studies option the opportunity to compare and contrast various cultural topics from multiple interdisciplinary perspectives. Students from the various majors will research, discuss, and compare specific cultural topics germane to one or more of the countries in which their target language is spoken. The course will be taught in English and at the end of the course each student will submit a research paper and present their findings orally to a general audience. Prerequisite is 24 credits in the major. For FORL majors only.

SPAN 101: 3 s.h.**Elementary Spanish 1 (G1)**

Introduction to language and culture. Fundamentals of grammar and syntax. Oral and written practice, short readings and practice in aural comprehension. Emphasis is placed on learning useful everyday phrases and working toward accuracy in pronunciation.

SPAN 102: 3 s.h.**Elementary Spanish 2 (G1)**

Continuation of SPAN 101; emphasis on more complex syntactical structures while working toward greater proficiency in both productive (speaking and writing) and receptive (reading and listening) skills. Prereq: SPAN 101 or 2 years of high school Spanish.

SPAN 179: 3 s.h.**Experimental**

Experimental

SPAN 201: 3 s.h.**Intermediate Spanish 1 (D, G1)**

Emphasis is placed on further developing receptive and productive skills through varied realistic exercises and in authentic real-life situations. Contemporary cultural and literary texts provide the thematic basis for oral and written communication. Systematic treatment of grammar. Prereq: SPAN 102 or placement exam.

SPAN 202: 3 s.h.**Intermediate Spanish 2 (D, G1)**

Continuation of SPAN 201. Communication in speech and writing; grammar and vocabulary are studied in greater depth and breadth. Increased emphasis on developing a cross-cultural perspective. Treatment of grammar and reading comprehension. Prereq: SPAN 201 or placement exam.

SPAN 211: 3 s.h.**Spanish for Business 1 (G1)**

The Spanish language and culture needed to perform basic business transactions in Spanish-speaking countries. Prereq: SPAN 102 or placement exam.

SPAN 212: 3 s.h.**Spanish for Business 2 (G1)**

Continuation of SPAN 211. Emphasis on business terminology, commercial correspondence, similarities and differences in business transactions and international procedures. Prereq: SPAN 201 or 211, or placement exam.

SPAN 279: 3 s.h.**Experimental**

Experimental

SPAN 300: 3-12 s.h.**Co-Op Ed Experience in Spanish**

Co-Op Ed Experience in Spanish

SPAN 301: 3 s.h.**Commercial Spanish**

Commercial vocabulary and stylistics. Presentation of the parts of the business letter. General types of business correspondence such as letters requesting and offering information, mail orders, sales letters, applications for employment, complaints, claims, collection, credit, etc. Prereq: SPAN 202 or 351, or placement exam.

SPAN 303: 3 s.h.**Spanish for Heritage Speakers (G1)**

This course is for students who were raised speaking Spanish, but who have not studied Spanish formally and are unsure of grammar and spelling, but would like to perfect their command of the language. The course will prepare the students to be able to continue successfully their Spanish studies at the 300-level and so more easily get a minor or major in Spanish, or simply to be ready to use Spanish on the job or in any formal context. It is different from courses like SPAN 101-202 where much of the focus is on building basic vocabulary for non-Spanish speakers and on encouraging students to speak, as well as teaching correct pronunciation. Students in SPAN 203 already know how to speak and pronounce Spanish; this course concentrates on grammar, writing, stylistics, and reading, as well as advanced vocabulary building. This will be done through reading, writing, and discussing such topics as customs peculiar to Spanish-speaking countries, the experiences of Hispanic immigrants to the United States, traditional and modern art and architecture in Spain and Latin American countries, global warming and conservation, and coming-of-age experiences. Focus is on being able to describe places, people and events, narrating a past event, stating an opinion and defending it. In larger terms, the class will: 1. examine, analyze, and critically evaluate the Spanish spoken by each member of the class and the heritage that that Spanish reflects and 2. compare and contrast it with what is considered "standard" Spanish; 3. express orally and in writing the differences and similarities between formal and informal speech and among Latin American, Latino, Spanish, and Anglo-American speech and customs; 4. increase critical thinking, oral and written communication skills; 5. describe orally and in writing the content of Spanish newspaper articles, short stories, films and a novel; 6. express orally and in writing opinions about the content of Spanish newspaper articles, short stories, films and a novel.

SPAN 311: 3 s.h.**Survey of Literature 1**

Life and works of outstanding literary figures and movements in Spain through the 17th century. Lectures, outside readings and reports. Prereq: SPAN 351 or 352.

SPAN 312: 3 s.h.**Survey of Literature 2**

Life and works of outstanding literary figures and movements in Spain from 1700 forward. Lectures, outside readings and reports. Prereq: SPAN 351 or 352.

SPAN 313: 3 s.h.**Survey of Span American Lit 1**

Life and works of outstanding literary figures and movements in Spanish America from its discovery and colonization to the present. Emphasis given to the Latin American contribution to universal literature. Prereq: SPAN 351 or 352.

SPAN 314: 3 s.h.**Srvy of Span-Amer Lit 2**

A panoramic journey through Latin American literature from the beginning of the 20th century to the present. Attention will be given to the development of cultural and aesthetic movements in the socio-historical contexts of Spanish America. Prereq: SPAN 351 or 352.

SPAN 331: 3 s.h.**Spanish Civilization 1**

History and development of Spain from prehistoric times to 1700. Includes the civilization, art and influence of the Romans, Visigoths and Moslems; unification of the country and the Hapsburgs. A study of the art of each period. Considerable use of slides and films. Prereq: SPAN 202 or 351.

SPAN 332: 3 s.h.**Spanish Civilization & Culture 2 (D)**

Spanish history and culture from 1700 forward from the beginning of the Bourbon dynasty through the present. Emphasis on the intellectual, social, cultural and political aspects of life in Spain. Outside readings, class reports. Considerable use of slides and films. Prereq: SPAN 202 or 351.

SPAN 333: 3 s.h.**Spanish American Civilization 1**

History of pre-Columbian Americans; the conquest, exploration and colonization of the New World to the Wars of Independence. Includes a history of Spanish American cultures, societies and institutions. Use of audiovisual material to emphasize the differences among pre-Columbian civilizations. Prereq: SPAN 202 or 351.

SPAN 334: 3 s.h.**Spanish American Civilization 2**

History and culture of the Spanish Americas from 1824 to contemporary times. The formation and development of the new Spanish American countries once they reached their independence from Spain will be explored and analyzed. Emphasis will be given to the traits that make each one of these countries unique as well as part of the Spanish American world. Prereq: SPAN 202 or 351.

SPAN 351: 3 s.h.**Composition and Oral Expression 1 (G1, W)**

Systematic practice in the language, designed to hone students' grammar, oral and written skills to a level of proficiency enabling them to express themselves with accuracy and fluency. Extensive grammar review. Prereq for SPAN 351: SPAN 202 or placement exam. Prereq for SPAN 352: SPAN 351, ENGL 110.

SPAN 352: 3 s.h.**Composition and Oral Expression 2 (G1, W)**

Systematic practice in the language, designed to hone students' grammar, oral and written skills to a level of proficiency enabling them to express themselves with accuracy and fluency. Extensive grammar review. Prereq for SPAN 351: SPAN 202 or placement exam. Prereq for SPAN 352: SPAN 351, ENGL 110.

SPAN 361: 3 s.h.**Oral Spanish 1**

Intensive experience with the spoken language. Taped exercises in comprehension. Conversations concerning everyday life, with emphasis on appropriate vocabulary. Emphasis on modern society and customs: schools, sports, holidays, literature, etc. Remedial treatment of phonetics and grammar. Prereq: SPAN 351, 352, or equivalent.

SPAN 361H: 3,4 s.h.**Hon: Oral Spanish 1****SPAN 362: 3,4 s.h.****Oral Spanish 2**

Intensive experience with the spoken language. Taped exercises in comprehension. Conversations concerning everyday life, with emphasis on appropriate vocabulary. Emphasis on modern society and customs: schools, sports, holidays, literature, etc. Remedial treatment of phonetics and grammar. Prereq: SPAN 351 or equivalent.

SPAN 371: 3 s.h.**Spanish in the US (D)**

The history and sociolinguistic aspects of the use of Spanish in the United States, analyzing issues related to language maintenance and loss, contact with English and the identification of varieties of Spanish in the U.S. Emphasis will be given to language attitudes and implications for identity and interethnic relations. Prereq: SPAN 352 or permission of instructor.

SPAN 379: 3 s.h.**Experimental**

Experimental

SPAN 400: 3-12 s.h.**Co-Op Ed Experience in Spanish**

Co-Op Ed Experience in Spanish

SPAN 409: 1,3 s.h.**Applied Linguistics**

CR. Applied Linguistics

SPAN 411: 3 s.h.**Spanish Poetry 1**

Development of principal types of Spanish or Spanish American poetry from the early Kharjas and Cantar de Mio Cid to the Renaissance. Study of the main works of representative poets. Class discussions, lectures, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 412: 3 s.h.**Spanish Poetry 2**

Continuing development of Spanish or Spanish American poetry from the Golden Age to the end of the 19th century. Main works of representative poets are studied. Class discussions, lectures, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 421: 3 s.h.**Spanish Drama 1**

Traces the development of Spanish drama from its beginnings, with a study of representative plays of Spain's Golden Age. Lectures, discussions, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 422: 3 s.h.**Spanish Drama 2**

A study of the Spanish theatre from 1700 through the 19th century. Includes the neoclassic, romantic and realist dramatists such as Echegaray, Tamayo y Baus and Zomilla. Lectures, discussions, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 431: 3 s.h.**Spanish Prose 1**

Development of narrative in Spain from the 13th-century origins of these forms to the end of the 17th century. Includes historical, didactic, narrative, pastoral, picaresque, mystic and novels of chivalry. Lectures, discussions, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 432: 3 s.h.**Spanish Prose 2**

Study of Spanish narrative forms from the 18th century to the present day. Lectures, discussions, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 433: 3 s.h.**Latin American Prose**

A study of Spanish American prose forms— history of discovery, conquest, exploration and colonization, romanticism, realism, naturalism, the essay and fiction to the present day. Lectures, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 443: 1-3 s.h.**Composition and Stylistics**

CR. Composition and Stylistics

SPAN 444: 1-3 s.h.**Translation and Interpretation**

CR. Translation and Interpretation

SPAN 445: 1,3 s.h.**Adv Oral Practice and Self-Exp**

CR. Advanced Oral Practice and Self- Expression

SPAN 446: 1-3 s.h.**History of Spanish Civilization**

CR. History of Spanish Civilization

SPAN 447: 1-3 s.h.**Hist Spanish Amer Civilization**

CR. History of Spanish- American Civilization

SPAN 451: 1,3 s.h.**Geography of Spain**

CR. Geography of Spain, Physical and Economic

SPAN 460: 3 s.h.**Translation and Interpretation**

Intended for students with a firm oral and written command of Spanish who need expert guidance for avoiding the pitfalls inherent in transposing thought from one language to another. Emphasis on idiomatic translation of newspaper and magazine articles. Prereq: SPAN 351 and 352.

SPAN 461: 1-3 s.h.**History of Hispanic Art**

CR. History of Hispanic Art

SPAN 462: 1,3 s.h.**Evolution of Spanish Language**

CR. Evolution of the Spanish Language

SPAN 470: 3 s.h.**Spanish Linguistics**

Introduction to Spanish phonetics. Comparative study of the morphology and the syntactic structures of Spanish and English. To be taken before FORL 480. Prereq: SPAN 351 and 352. Recommended: SPAN 361.

SPAN 470H: 3 s.h.**H:Spanish Linguistics****SPAN 471: 1-3 s.h.****Contemporary Spain**

CR. Aspects of Contemporary Spain

SPAN 472: 1-3 s.h.**Contemporary Latin America**

CR. Aspects of Contemporary Latin America

SPAN 479: 1-3 s.h.**Experimental**

Experimental

SPAN 481: 1-3 s.h.**Medieval Spanish Literature**

CR. Seminar in Medieval Spanish Literature

SPAN 482: 1-3 s.h.**Renaissance Literature**

CR. Seminar in Renaissance Literature

SPAN 482H: 3 s.h.**H:Renaissance Literature****SPAN 485: 1,3 s.h.****19th Century Literature**

CR. Seminar in Nineteenth- Century Literature

SPAN 486: 1-3 s.h.**20th Century Literature**

CR. Seminar in Twentieth- Century Literature

SPAN 487: 1,3 s.h.**Spanish-American Literature**

CR. Seminar in Spanish- American Literature

SPAN 489: 1-4 s.h.**Honors Course**

Honors Course

SPAN 491: 1,3 s.h.**Current Topics**

CR. Current Topics

SPAN 498: 1-3 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

SPAN 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

SPAN 500: 3-12 s.h.**Co-Op Ed Experience in Spanish**

Co-Op Ed Experience in Spanish

WRIT 272: 3 s.h.**Introduction to Writing Studies (G1, W)**

Focuses on some of the major areas of scholarship related to the practice of writing: literacy practices; historical accounts of writing instruction; the relationship of classical rhetoric to contemporary writing; writing across the curriculum; studies of professional and workplace writing; computers and writing; social, political and economic dimensions of writing; and others. Prereq: ENGL 110.

WRIT 273: 3 s.h.**Writing in the Disciplines (G1, W)**

Examines writing across three major academic domains: sciences, social sciences and humanities. Explores how disciplinary conventions and rhetorical contexts call for different writing strategies, particularly different choices in purpose, content, language, style, voice, tone and organization.

WRIT 274: 3 s.h.**The Craft of Writing (G1, W)**

Explores writing as a varied set of deliberate, artful choices in regard to designing and stylizing diverse persuasive texts, all crafted for specific audiences-emphasizing a mindful focus upon language for students at all levels of preparation. The course invites students to experience, in texts of all kinds, the interplay of argumentative structure and style that impacts readers: both rhetorical awareness and stylistic agility. As a topics course, ENGL 274 will permit instructors to select various genres of writing and styles to challenge students' practice. Prereq ENGL 110, repeatable up to 6 credits.

WRIT 280: 3 s.h.**Intro to Rhetoric for Writers (G1, W)**

Introduces students to rhetorical theory and concepts useful to their lives as writers broadly defined. We will explore how people argue, persuade and identify with one another by analyzing texts across genres and historical periods. Prereq: ENGL 110, 30 credit hours

WRIT 311: 3 s.h.**Advanced Composition (AW)**

Exploration, evaluation and writing across diverse and dynamic writing contexts to create rhetorically sophisticated texts, such as memoirs, socially expressive essays or other varieties of creative nonfiction; Classical and/or Rogerian arguments; ethnographic studies; varieties of public discourses; innovative, multigenre researched writing; summaries, abstracts and literature reviews; and texts designed for websites, wikis and blogs. Prereq: ENGL 110 or equivalent, 60 s.h.

WRIT 312: 3 s.h.**Technical Writing (AW)**

Writing of scientific and technical reports, manuals, technical articles and correspondence. Emphasis on data collection and analysis. Prereq: ENGL 110 or equivalent, 60 s.h.

WRIT 316: 3 s.h.**Business Writing (AW)**

Informative and persuasive writing in business and industry. Extensive practice in writing letters, memorandums, proposals and reports. Emphasis on business writing strategies and processes. Prereq: ENGL 110 or equivalent, 60 s.h.

WRIT 317: 3 s.h.**Editing for Publication (G1, W)**

Focuses on the role of the editor in publishing. Developing skills to improve copy for publication, designing content for websites and blogs as well as creating photographic, audio and video material for use on the web. Prereq: ENGL 110 or equivalent

WRIT 318: 3 s.h.**Web Writing (AW)**

Explores concepts, techniques and strategies for authoring, managing and publishing reusable web content. Covers content strategy frameworks and writing techniques used in interactive experience projects. Prerequisite: ENGL 110, 60 credit hours.

WRIT 318H: 3 s.h.**Hon: Web Writing (AW)****WRIT 319: 3 s.h.****Science Writing (AW)**

This course will teach aspiring science writers and/ or scientists to effectively write about research for audiences both inside and outside of the sciences. The course will establish the premise that science is a social enterprise that, in addition to research acumen, requires rhetorical skill. Focusing on rhetorical skill, this class will analyze the communication strategies scientists and science writers use to argue for research findings, advocate public policy positions, and communicate risk. Students will consider how scientific texts address audiences, use key terms, and argue for their validity with quantitative and visual evidence. Students will also investigate how such specialized knowledge can be effectively and ethically accommodated for non-specialist audiences. Students will be encouraged to bring their own research interests into class projects to draw from and develop their voice as an expert. Students will engage these topical interests in assignments in which they write for disciplinary and interdisciplinary audiences as well as for non-academic audiences. Each context will require careful analysis and strategy to effectively meet audience expectations, which this course will cultivate through readings, sample analyses, and Writing exercises. In this class, students will develop a rhetorical approach to planning and producing scientific writing. This means that students will learn to analyze an audience, the purpose of the document, and the context of the document. Students will use those insights to plan, create, and revise documents that effectively communicate your message. This course will emphasize precision of language necessary to effectively communicate science from the sentence-level up to the whole document. Students will develop skills in inventing ideas, drafting, revising and in peer review. Peer review will be an especially important skill in this class as it models the professional behavior of scientists. Prereq: ENGL 110 and 60 credit hours (Jr Status)

WRIT 319H: 3 s.h.**Hon: Science Writing (AW)****WRIT 340: 3 s.h.****Rhetorical Analysis (G1, W)**

Analyze the rhetorical strategies of public writing, argument, and textual production. Students will apply theories of rhetoric and use rhetorical analysis to investigate genres of writing.

WRIT 342: 3 s.h.**Reading/Writing for Civic Change (W)**

An introduction to the theory and practice of public discourse, with emphasis on civic discourse. Focuses on exploring the nature and function of being a citizen within a community and developing discourse skills to effect change in communities. Prereq: ENGL 311 or 312 or 313 or 316 or 318 or 319.

WRIT 343: 3 s.h.**Theories of Rhetoric**

Principal figures, theories, and movements in rhetoric from the classical period to the present. The relationships between rhetoric and political, social and personal decisions are explored. Prereq: COMM 100.

WRIT 466: 3 s.h.**Sp Top Writing: (W)**

In-depth investigation of topics in writing studies theory. May be taken more than once for credit with varied topic. Prereq: ENGL 311 or 312 or 313 or 316 or 318 or 319 or WRIT 311 or 312 or 316 or 318 or 319..

WRIT 471: 3 s.h.**Creative Writing**

Extensive practice in writing fiction and poetry. Inquiry into the social functions and purposes of fictional and poetic writing. Prereq: ENGL 110.

WRIT 472: 3 s.h.

Digital Portfolio

Extensive written work focused on the creation of a professional, digital portfolio to showcase interests, experience and accomplishments to be used for application to graduate school or future employment. Critiques and considerable discussion of other student papers. Prereq: ENGL 311 or permission of instructor.

English, B.A. - English as a Second Language/Linguistics

English as a Second Language students experience the breadth of the English field while dedicating themselves to the specific study of ESL. You will explore the history of language, practice literary analysis, develop an understanding of world literature and more through a diverse selection of English electives. ESL courses at Millersville University include Introduction to Language Study; Transformational Grammar; Applied Linguistics; and Teaching English to Speakers of Other Languages.

Major in English, BA

Code	Title	Hours
Option in English as a Second Language/Linguistics - See separate block		
ENGLISH CORE COURSES		
ENGL 220	Introduction to Language Study	3
ENGL 237	Literary Research and Analysis	3
ENGL 242	Reading Our World:	3
BA ENGLISH REQUIREMENTS		
Any additional English courses taken above the minimum will be included here for major GPA per University policy		
DEVELOPING LEVEL COURSES - See Appendix 1		9
EARLY PERIOD DEVELOPING LEVEL		
One course from the Developing Level area must be from the earlier period.		
ADVANCED STUDY - See Appendix 2		21
ELECTIVES - See Appendix 3		
BA ENGLISH CAPSTONE COURSE - Choose 1 of the following:		3-9
ENGL 400	English Internship	
ENGL 499	Departmental Honors	
WRIT 472	Digital Portfolio	
Total Hours		42-48

Appendix 1. DEVELOPING LEVEL COURSES

Code	Title	Hours
World Lit I or World Lit II - Choose 1 of the following:		
ENGL 231	World Literature 1	3
ENGL 232	World Literature 2	
ENGL 241H	H:Explorations in World Lit	
Early English or Later English - Choose 1 of the following:		
ENGL 233	Early British Literature	3
ENGL 234	Later British Literature	
Early American or Later American - Choose 1 of the following:		
ENGL 235	American Literary Tradition I	3
ENGL 236	American Literary Tradition II	

Appendix 2. ADVANCED STUDY

Code	Title	Hours
Pre-1800 Literature - Choose 1 of the following:		
ENGL 401	Old Eng Lang and Literature	3
ENGL 402	Middle Eng Lang and Literature	
ENGL 403	Chaucer	
ENGL 404	The English Renaissance	
ENGL 405	Shakespeare	
ENGL 406	17th Cen Lit Prior Restoration	
ENGL 407	Milton	
ENGL 411	Romantic Literature	
ENGL 414	The British Novel (18C English Novel)	
ENGL 414	The British Novel (The English Novel: 18C)	
ENGL 421	Early American Literature	
American Literature - Choose 1 of the following:		
ENGL 421	Early American Literature	3
ENGL 422	The American Renaissance	
ENGL 423	Development of the Amer Novel	
ENGL 424	Realism and Naturalism to 1920	
ENGL 425	Modern Amer Fiction, 1920-1945	
ENGL 426	Modern American Drama	
ENGL 427	Modern American Poetry	
ENGL 428	Contemporary Amer Lit: 1945-P	
ENGL 429	Smnr Sel Am Auth:	
ENGL 430	Ethnic American Lit Since 1945	
British Literature - Choose 1 of the following:		
ENGL 403	Chaucer	3
ENGL 404	The English Renaissance	
ENGL 405	Shakespeare	
ENGL 406	17th Cen Lit Prior Restoration	
ENGL 407	Milton	
ENGL 411	Romantic Literature	
ENGL 412	Victorian Literature: Madwomen & Decadent Men	
ENGL 413	British Literature Since 1914	
ENGL 414	The British Novel	
ENGL 415	Seminar of British Writers	
ENGL 416	The Woman Writer	
ENGL 300	English Internship	12

Appendix 3. ELECTIVES

Code	Title	Hours
Writing Studies Elective (1 required) - Choose 1 class from:		
WRIT 280	Intro to Rhetoric for Writers	
WRIT 312	Technical Writing	
JRNL 313	Fundamentals of Journalism	
JRNL 315	Advanced Reporting in a Diverse World	
WRIT 316	Business Writing	
JRNL 327	Feature Writing and Magazine Journalism	
WRIT 340	Rhetorical Analysis	
WRIT 342	Reading/Writing for Civic Chng	
WRIT 466	Sp Top Writing:	
WRIT 471	Creative Writing	

WRIT 472	Digital Portfolio	
Any WRIT course(s)		
Media Elective (1 required) - Choose 1 of the following:		3
ENGL 240	The Art of Film	
ENGL 481	History Of Film	
ENGL 482	Film and American Society	
ENGL 483	Politics, Film & Electronic Media	
ENGL 484	Sci Fiction, Technology & Film	
English Elective (1 required) - Choose 1 class from:		
Any ENGL course(s)		
Any WRIT course(s)		

Option in ESL/Linguistics

Code	Title	Hours
Electives for ESL/Linguistics Concentration - Choose 12 hours from:		
ENGL 221	Intro to Linguistic Analysis	12
ENGL 321	Modern Syntax	
ENGL 322	History of English	
ENGL 460	Teach ESL Listening/Speaking	
ENGL 462	Dialects of American English	
ENGL 463	Applied Linguistics	
ENGL 464	Teaching Eng as Second Lang	
ENGL 465	Special Topics in Lang: Sem	

Total Hours 12

American Literature Minor

A minor in American Literature gives you the opportunity to explore early, modern and contemporary American literature, the American Renaissance, realism, naturalism, American authors and more. While studying literature, you will also be introduced to literary theories and the development of languages. This minor is housed within the English and World Languages department, and is available to both English and non-English majors.

Regulations Governing Minor Course Work

- There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
- Only one course which counts toward your major may be counted toward your minor.
- Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
- At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
- No course needed for the minor may be taken Pass-Fail.
- One-half or more of the work required for the minor must be completed at Millersville University.
- No student may minor in his or her major.

Minor in American Literature

Code	Title	Hours
ENGL 237	Literary Research and Analysis	3
ENGL 235	American Literary Tradition I	3
Later American Literature		3
ENGL 236	American Literary Tradition II	

English Electives in American Literature - Choose 3 of the following: 9

ENGL 421	Early American Literature	
ENGL 422	The American Renaissance	
ENGL 423	Development of the Amer Novel	
ENGL 424	Realism and Naturalism to 1920	
ENGL 425	Modern Amer Fiction, 1920-1945	
ENGL 426	Modern American Drama	
ENGL 427	Modern American Poetry	
ENGL 428	Contemporary Amer Lit: 1945-P	
ENGL 429	Smnr Sel Am Auth:	
ENGL 331	Special Topics in Literature (Afro-Amer Lit)	
ENGL 331	Special Topics in Literature (Am Ethnic Lit)	
ENGL 331	Special Topics in Literature (Am Landscape)	
ENGL 331	Special Topics in Literature (Amer Wmn Wrtrs)	
ENGL 331	Special Topics in Literature (Ethnic Lit)	
ENGL 331	Special Topics in Literature (Lit of 1890'S America)	
ENGL 331	Special Topics in Literature (Special Topics:Amer Womn Wrtr)	
ENGL 331 may be included when the primary focus is American Literature.		

Total Hours 18

British Literature Minor

A minor in British Literature allows students to explore the evolution of British literature, facilitates a well-rounded study of various texts and encourages students to gain a global perspective. A minor in British Literature offers a focus for your study and a specialization to your growing expertise in your chosen major.

Regulations Governing Minor Course Work

- There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
- Only one course which counts toward your major may be counted toward your minor.
- Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
- At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
- No course needed for the minor may be taken Pass-Fail.
- One-half or more of the work required for the minor must be completed at Millersville University.
- No student may minor in his or her major.

Minor in British Literature

Code	Title	Hours
ENGL 233	Early British Literature	3
ENGL 234	Later British Literature	3
ENGL 237	Literary Research and Analysis	3
ENGL 405	Shakespeare	3
English Electives in British Literature - Choose 2 of the following:		6
ENGL 403	Chaucer	
ENGL 404	The English Renaissance	
ENGL 406	17th Cen Lit Prior Restoration	

ENGL 411	Romantic Literature
ENGL 412	Victorian Literature: Madwomen & Decadent Men
ENGL 413	British Literature Since 1914
ENGL 414	The British Novel
ENGL 415	Seminar of British Writers
ENGL 331 and HUMN 401 may be included when the primary focus is British Literature.	
Total Hours	18

Creative Writing & Publishing Minor

This minor provides students a focused path towards success as a creative writer by emphasizing the steps that effective writers take on their journey to publication. While similar to the Writing Studies minor, this option should be selected by students who primarily want to focus on their development as creative writers.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Culture Studies Minor

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

The minor in Culture Studies requires declaration of a specific language, we offer French, German, Spanish and Japanese.

FORL 101 Elementary Language 1

FORL 102 Elementary Language 2

FORL 201 Intermediate Language 1

FORL 202 Intermediate Language 2

6:9 Credits in Culture Electives at the 300 or 400 level

Humanities (HUMN) courses in the respective language subject may be counted as culture electives.

English as a Second Language/ Linguistics Minor

English as a Second Language/Linguistics minors experience the breadth of the English field while dedicating themselves to the specific study of ESL and/or Linguistics. ESL/Linguistics courses at Millersville University include Introduction to Language Study, Introduction to Linguistic Analysis, Modern Syntax, Applied Linguistics, Teaching English as a Second Language, Teaching ESL Listening and Speaking, and History of the English Language.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

English Minor

This minor with its humanistic focus gives students of all disciplines a background in linguistics, literature, rhetoric, and writing. One of the major aims of the program is to assist students in communicating effectively in any choice of profession or vocation.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

English, B.A.

Our liberal arts-based English program, with its humanistic focus, is designed to give B.A. students a background in literature, language, writing, and related fields of study, as well as knowledge of themselves. Students are exposed to both the rich cultural heritage of the past and the most promising creative work of the present. One of the major aims

of the program is to assist students in communicating effectively and logically in any choice of profession or vocation. Upon completion of this course of study, English majors from Millersville should be qualified for admission to graduate schools and other professional training programs, and they should be well prepared for careers that require writing and research skills.

Major in English, BA

Code	Title	Hours
ENGLISH CORE COURSES		
ENGL 220	Introduction to Language Study	3
ENGL 237	Literary Research and Analysis	3
ENGL 242	Reading Our World:	3
BA ENGLISH REQUIREMENTS - NO OPTION		
Any additional English courses taken above the minimum will be included here for major GPA per University policy		
DEVELOPING LEVEL COURSES - See Appendix 1		9
EARLY PERIOD DEVELOPING LEVEL		
One course from the Developing Level area must be from the earlier period, ENGL 231, 233 or 235.		
ADVANCED STUDY - See Appendix 2		21
ELECTIVES - See Appendix 3		
BA ENGLISH CAPSTONE COURSE - Choose 1 of the following:		3-4
ENGL 499	Departmental Honors	
WRIT 472	Digital Portfolio	
Total Hours		42-43

Appendix 1. DEVELOPING LEVEL COURSES

Code	Title	Hours
World Lit I or World Lit II - Choose 1 of the following:		3
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
Early British or Later British - Choose 1 of the following:		3
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
American Literary Tradition I or Later American - Choose 1 of the following:		3
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	

Appendix 2. ADVANCED STUDY

Code	Title	Hours
Pre-1800 Literature - Choose 1 of the following:		3
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	
ENGL 403	Chaucer	
ENGL 404	The English Renaissance	
ENGL 405	Shakespeare	
ENGL 406	17th Cen Lit Prior Restoration	
ENGL 407	Milton	
ENGL 411	Romantic Literature	
ENGL 414	The British Novel (18C English Novel)	
ENGL 414	The British Novel (The English Novel: 18C)	
ENGL 421	Early American Literature	

American Literature - Choose 1 of the following:		3
ENGL 421	Early American Literature	
ENGL 422	The American Renaissance	
ENGL 423	Development of the Amer Novel	
ENGL 424	Realism and Naturalism to 1920	
ENGL 425	Modern Amer Fiction, 1920-1945	
ENGL 426	Modern American Drama	
ENGL 427	Modern American Poetry	
ENGL 428	Contemporary Amer Lit: 1945-P	
ENGL 429	Smnr Sel Am Auth:	
ENGL 430	Ethnic American Lit Since 1945	
British Literature - Choose 1 of the following:		3
ENGL 403	Chaucer	
ENGL 404	The English Renaissance	
ENGL 405	Shakespeare	
ENGL 406	17th Cen Lit Prior Restoration	
ENGL 407	Milton	
ENGL 411	Romantic Literature	
ENGL 412	Victorian Literature: Madwomen & Decadent Men	
ENGL 413	British Literature Since 1914	
ENGL 414	The British Novel	
ENGL 415	Seminar of British Writers	
ENGL 416	The Woman Writer	
ENGL 300	English Internship	12

Appendix 3. ELECTIVES

Code	Title	Hours
Writing Studies Elective (1 required) - Choose 1 class from:		
WRIT 280	Intro to Rhetoric for Writers	
WRIT 312	Technical Writing	
JRNL 313	Fundamentals of Journalism	
JRNL 315	Advanced Reporting in a Diverse World	
WRIT 316	Business Writing	
JRNL 327	Feature Writing and Magazine Journalism	
WRIT 340	Rhetorical Analysis	
WRIT 342	Reading/Writing for Civic Chng	
WRIT 466	Sp Top Writing:	
WRIT 471	Creative Writing	
WRIT 472	Digital Portfolio	
Any WRIT course(s)		
Media Elective (1 required) - Choose 1 of the following:		3
ENGL 240	The Art of Film	
ENGL 481	History Of Film	
ENGL 482	Film and American Society	
ENGL 483	Politics, Film & Electronic Media	
ENGL 484	Sci Fiction, Technology & Film	
English Electives (1 required) - Choose 1 class from:		
Any ENGL course(s)		
Any WRIT course(s)		

English, B.A. - Film Studies Option

The Film Studies option in English enables students to develop skills and proficiency in the developing discipline of film studies, including its history, aesthetics, terminology, methods of analysis, theoretical issues, and social impact/interactions.

Major in English, BA

Code	Title	Hours
Option in Film Studies - See separate block		
ENGLISH CORE COURSES		
ENGL 220	Introduction to Language Study	3
ENGL 237	Literary Research and Analysis	3
ENGL 242	Reading Our World:	3
BA ENGLISH REQUIREMENTS		
Any additional English courses taken above the minimum will be included here for major GPA per University policy		
DEVELOPING LEVEL COURSES - See Appendix 1		9
EARLY PERIOD DEVELOPING LEVEL		
One course from the Developing Level area must be from the earlier period.		
ADVANCED STUDY - See Appendix 2		21
ELECTIVES - See Appendix 3		
BA ENGLISH CAPSTONE COURSE - Choose 1 of the following:		3-9
ENGL 400	English Internship	
ENGL 499	Departmental Honors	
WRIT 472	Digital Portfolio	
Total Hours		42-48

Appendix 1. DEVELOPING LEVEL COURSES

Code	Title	Hours
World Lit I or World Lit II - Choose 1 of the following:		3
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 241H	H:Explorations in World Lit	
Early English or Later English - Choose 1 of the following:		3
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
Early American or Later American - Choose 1 of the following:		3
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	

Appendix 2. ADVANCED STUDY

Code	Title	Hours
Pre-1800 Literature - Choose 1 of the following:		3
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	
ENGL 403	Chaucer	
ENGL 404	The English Renaissance	
ENGL 405	Shakespeare	
ENGL 406	17th Cen Lit Prior Restoration	
ENGL 407	Milton	
ENGL 411	Romantic Literature	
ENGL 414	The British Novel (18C English Novel)	

ENGL 414	The British Novel (The English Novel: 18C)	
ENGL 421	Early American Literature	
American Literature - Choose 1 of the following:		3
ENGL 421	Early American Literature	
ENGL 422	The American Renaissance	
ENGL 423	Development of the Amer Novel	
ENGL 424	Realism and Naturalism to 1920	
ENGL 425	Modern Amer Fiction, 1920-1945	
ENGL 426	Modern American Drama	
ENGL 427	Modern American Poetry	
ENGL 428	Contemporary Amer Lit: 1945-P	
ENGL 429	Smnr Sel Am Auth:	
ENGL 430	Ethnic American Lit Since 1945	
British Literature - Choose 1 of the following:		3
ENGL 403	Chaucer	
ENGL 404	The English Renaissance	
ENGL 405	Shakespeare	
ENGL 406	17th Cen Lit Prior Restoration	
ENGL 407	Milton	
ENGL 411	Romantic Literature	
ENGL 412	Victorian Literature: Madwomen & Decadent Men	
ENGL 413	British Literature Since 1914	
ENGL 414	The British Novel	
ENGL 415	Seminar of British Writers	
ENGL 416	The Woman Writer	
ENGL 300	English Internship	12

Appendix 3. ELECTIVES

Code	Title	Hours
Writing Studies Elective (1 required) - Choose 1 class from:		
WRIT 280	Intro to Rhetoric for Writers	
WRIT 312	Technical Writing	
JRNL 313	Fundamentals of Journalism	
JRNL 315	Advanced Reporting in a Diverse World	
WRIT 316	Business Writing	
JRNL 327	Feature Writing and Magazine Journalism	
WRIT 340	Rhetorical Analysis	
WRIT 342	Reading/Writing for Civic Chng	
WRIT 466	Sp Top Writing:	
WRIT 471	Creative Writing	
WRIT 472	Digital Portfolio	
Any WRIT course(s)		
Media Elective (1 required) - Choose 1 of the following:		3
ENGL 240	The Art of Film	
ENGL 481	History Of Film	
ENGL 482	Film and American Society	
ENGL 483	Politics, Film & Electronic Media	
ENGL 484	Sci Fiction, Technology & Film	
English Elective (1 required) - Choose 1 class from:		
Any ENGL course(s)		
Any WRIT course(s)		

Option in Film Studies

Code	Title	Hours
Intro to Film		3
ENGL 240	The Art of Film	
ENGL 481	History Of Film	3
Film Studies Electives - Choose 2 of the following:		6
ENGL 347	Ethnicity in Film	
ENGL 482	Film and American Society	
ENGL 483	Politics, Film & Electronic Media	
ENGL 484	Sci Fiction, Technology & Film	
PHIL 327	Philosophy in Film	
Total Hours		12

English, B.A. - Writing Studies

The Writing Studies option in the English B.A. allows students to pursue concentrated study in the discipline of writing, specializing in sub-fields such as the history of rhetoric and composition, literacy, theories of writing pedagogy, and writing and multi-media.

Major in English, BA

Code	Title	Hours
Option in Writing Studies - See separate block		
Students may elect to declare an option in Comparative Literature, ESL/Linguistics, Film Studies, or Writing Studies. This is not required.		
ENGLISH CORE COURSES		
ENGL 220	Introduction to Language Study	3
ENGL 237	Literary Research and Analysis	3
ENGL 242	Reading Our World:	3
Total Hours		9

Option in Writing Studies

Code	Title	Hours
INTRODUCTORY COURSE		
WRIT 272	Introduction to Writing Studies	3
CORE COURSES		
The Craft of Writing: Argumentation Stylistics		3
WRIT 274	The Craft of Writing	
WRIT 317	Editing for Publication	3
Visual Rhetoric		3
WRIT 340	Rhetorical Analysis	
Reading and Writing for Civic Change		3
WRIT 342	Reading/Writing for Civic Chng	
Special Topics in Writing Studies		3
WRIT 466	Sp Top Writing:	
REQUIRED ELECTIVES IN WRITING STUDIES		
undefined - Choose 9 hours from:		9
WRIT 273	Writing in the Disciplines	
WRIT 280	Intro to Rhetoric for Writers	
WRIT 312	Technical Writing	
WRIT 317	Editing for Publication	
WRIT 318	Web Writing	
WRIT 319	Science Writing	

WRIT 466	Sp Top Writing:	
WRIT 471	Creative Writing	
JRNL 250	Journalism & Society	
JRNL 315	Advanced Reporting in a Diverse World	
JRNL 327	Feature Writing and Magazine Journalism	
JRNL 430	Investigative and Computer Assisted Reporting	
ENGL 435	Journlsm Thru Women's Prspctvs	
ENGL 487	Seminar in Teaching Writing	
INTERNSHIP		
undefined - Choose 3 hours from:		3
ENGL 300	English Internship	
WRITING STUDIES CAPSTONE		
undefined - Choose 3 hours from:		3
WRIT 472	Digital Portfolio	
ENGL 400	English Internship	
ENGL 489	Honors Course	
ENGL 498	Independent Study in English	
ENGL 499	Departmental Honors	
The internship (ENGL 400) is in addition to the required 3-credit internship and can be selected as a Capstone course after fulfilling the 3-credit internship requirement.		
Total Hours		33

English, B.S.Ed.

Students whose goal is to become a teacher have a program of coursework that has been nationally recognized by the National Council of Teachers of English (NCTE) and the National Association of Professional Development Schools (NAPDS). Students take courses both in the College of Arts, Humanities and Social Sciences and in the College of Education and Human Services.

To stay on schedule, English B.S.Ed. students should take their "foundations block," EDFN 211 Foundations Modern Education and EDFN 241 Psychological Foundations of Teaching, in their sophomore year. Registering for these classes requires students to process and submit background checks and clearances. Transfer students should plan ahead for these courses.

B.S.Ed. students should apply for admission to Advanced Professional Studies (APS) in their junior year, in preparation for Professional Development School. APS requirements are listed on students' degree audits; students should strive to maintain a 3.0 cumulative GPA for admission into APS.

Millersville's Professional Development School (PDS) is a full-year internship experience that immerses future teachers in a school setting. This senior-year apprenticeship with a master teacher allows English B.S.Ed. students to shift their focus from simply learning about teaching to implementing their learning in the classroom.

English, B.S.Ed. - Film Studies Option

The film studies option enables English B.A. or B.S.Ed. majors to develop skills and proficiency in the discipline of film studies, including its history, aesthetics, terminology, methods of analysis, theoretical frameworks and interrelationships with society/culture. B.S.Ed. students may want to take this option to teach film studies in high school.

English, B.S.Ed. - Writing Studies Option

The writing studies option enables English majors to pursue focused study in the discipline of writing, which draws from subfields such as the history of rhetoric and composition, literacy, theories of writing pedagogy, and writing and multimedia.

Film Studies Minor

A minor in Film Studies will expand students' knowledge of films, give them an understanding of film history and culture, and help them discuss films using appropriate technical vocabulary. This minor is housed within the English department, and is available to both English majors and non-English majors. In addition to courses available within the English department, students are encouraged to take film courses offered in other disciplines like Philosophy and Anthropology.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Film Studies

Code	Title	Hours
ENGL 240	The Art of Film	3
ENGL 481	History Of Film	3
Ethnicity in Film or Film and American Society - Choose 1 of the following:		
ENGL 347	Ethnicity in Film	3
ENGL 482	Film and American Society	3
ENGL 483	Politics, Film & Electronic Media	3
ENGL 484	Sci Fiction, Technology & Film	3
Electives in Film Studies - Choose 1 of the following:		
ANTH 227	Culture Through Film	3
ART 201	History and Aesthetics of Photography	3
ART 306	Intro Photography: Darkroom	3
DESN 342	Kinetic Design and Animation	3
ART 376	Intro to Photo: Digital	3
COMM 337	Documentary Film I: Concepts	3
AENG 110	Communication and Information Systems	3
PHIL 327	Philosophy in Film	3
Total Hours		18

Language & Culture Studies, B.A. - Culture Studies - Spanish

Our program in Language and Culture Studies is designed to help students acquire deep knowledge about the cultures related to the Spanish language. Students develop skills in linguistic, cultural, and literary analysis to be prepared for careers in a field where they can use their second language at a professional level.

Major in LACS, BA

Code	Title	Hours
Culture Studies Spanish Option - See separate block		
Total Hours		0

Major in LACS, Culture Studies Spanish Option - BA

Code	Title	Hours
INTERMEDIATE SPANISH COURSES		

Higher level courses must be substituted for 101-202 once a 300-level course has been completed		
Elementary Language 1 or Upper Level Substitute		3
SPAN 101	Elementary Spanish 1	
Elementary Language 2 or Upper Level Substitute		3
SPAN 102	Elementary Spanish 2	
Intermediate Spanish I or Upper Level Substitute		3
SPAN 201	Intermediate Spanish 1	
Note: This requirement may not be satisfied with SPAN 311, SPAN 312, SPAN 313, SPAN 314, SPAN 351, SPAN 352, or SPAN 470.		
Intermediate Spanish II or Upper Level Substitute		3
SPAN 202	Intermediate Spanish 2	
Note: This requirement may not be satisfied with SPAN 311, SPAN 312, SPAN 313, SPAN 314, SPAN 351, SPAN 352, or SPAN 470.		

SPANISH LANGUAGE CORE

Comp/Oral Express I or II - Choose 1 of the following:		3
SPAN 351	Composition and Oral Expression 1	
SPAN 352	Composition and Oral Expression 2	
Civilization Course - Choose 1 of the following:		3
SPAN 331	Spanish Civilization 1	
SPAN 332	Spanish Civilization & Culture 2	
SPAN 333	Spanish Am Civilization 1	
SPAN 334	Spanish Amer Civilization 2	
Spanish Literature Course - Choose 1 of the following:		3
SPAN 311	Survey of Literature 1	
SPAN 312	Survey of Literature 2	
SPAN 313	Survey of Span American Lit 1	
SPAN 314	Srvy of Span-Amer Lit 2	
300/400 Level Spanish Courses - Choose 6 hours from:		6
Any 3-level SPAN course(s)		
Any 4-level SPAN course(s)		
Spanish Culture Studies Electives		6

Choose 6 credits of electives in consultation with your advisor. Courses may be 300 level or above in your language or select Humanities Courses.)

Language Culture Seminar	3
LANC 490 Sr Seminar: Lang & Cult Study	

Foreign Language Senior Requirement

All language and culture majors are required to take the Assessment of Performance toward Proficiency in Languages to meet graduation requirements. See advisor for details.

Total Hours	36
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Language & Culture Studies, B.A. - Language Studies - Spanish

Our program in Spanish Language Studies is designed to help students acquire a high level of proficiency in the language and deep knowledge about the cultures related to the language. Students develop skills in linguistic, cultural, and literary analysis to be prepared for careers in a field where they can use their second language at a professional level.

Major in LACS, BA

Code	Title	Hours
Language Studies Spanish Option - See separate block		

Total Hours	0
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Major in LACS, Language Studies Spanish - BA

Code	Title	Hours
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INTERMEDIATE SPANISH COURSES

Higher level courses must be substituted for 201-202 once a 300-level course has been completed

Intermediate Spanish I or Upper Level Substitute	3
SPAN 201 Intermediate Spanish 1	

Note: This requirement may not be satisfied with SPAN 311, SPAN 312, SPAN 313, SPAN 314, SPAN 351, SPAN 352, or SPAN 470.

Intermediate Spanish II or Upper Level Substitute	3
SPAN 202 Intermediate Spanish 2	

Note: This requirement may not be satisfied with SPAN 311, SPAN 312, SPAN 313, SPAN 314, SPAN 351, SPAN 352, or SPAN 470.

SPANISH LANGUAGE CORE

Comp/Oral Express I	3
SPAN 351 Composition and Oral Expression 1	

Comp/Oral Express II	3
SPAN 352 Composition and Oral Expression 2	

Civilization Course - Choose 1 of the following:	3
SPAN 331 Spanish Civilization 1	

SPAN 332 Spanish Civilization & Culture 2

SPAN 333 Spanish Am Civilization 1

SPAN 334 Spanish Amer Civilization 2

Spanish Literature Course - Choose 1 of the following:	3
SPAN 311 Survey of Literature 1	

SPAN 312 Survey of Literature 2

SPAN 313 Survey of Span American Lit 1

SPAN 314 Srvy of Span-Amer Lit 2

Spanish Electives

Five courses (15 credits) in Spanish at the 300 or 400 level (civilization, literature, translation, business, etc. selected in consultation with your advisor.)

Capstone Course

Select any 400 level capstone course in consultation with your advisor

Foreign Language Senior Requirement

All language and culture majors are required to take the Assessment of Performance toward Proficiency in Languages to meet graduation requirements. See advisor for details.

Total Hours	18
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Req Related for LACS, BA

Code	Title	Hours
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ADDITIONAL LANGUAGE REQUIREMENTS

Choose courses in a second and third language in consultation with your adviser.

REQUIRED RELATED COURSES

Historical and Cultural Studies - Spanish - Choose 1 of the following: 3

ANTH 223 People and Cultures Of Mediter

GEOG 343 Latin America & the Caribbean

HIST 283 Colonial Latin America

HIST 284 Modern Latin America

HIST 401 Cultural Interactions across the Atlantic World, 1450-1820

LATS 201 Introduction to Latino Studies

ENGL 220 Introduction to Language Study 3

Total Hours	6
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Language & Culture Studies, B.A. - Teacher Education - Spanish

This program prepares students to become language teachers in secondary schools. Our teacher education program in Spanish is recognized for its excellence by the American Council on the Teaching of Foreign Languages.

Language Studies Minor

With a minor in Language Studies, students will gain greater confidence in communicating across languages, and demonstrate an appreciation of foreign cultures and an interest in the world beyond.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.

6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

The minor in Language Studies requires declaration of a specific language, we offer French, German, and Spanish.

FORL 201 Intermediate Language I

FORL 202 Intermediate Language II

Choose One:

FORL 351 Composition & Oral Expression 1

or

FORL 352 Composition & Oral Expression 2

9 Credits of electives in the chosen language at the 300 or 400 level

*If a student tests above the Intermediate Language Level or had already taken 300-level language courses, upper level language courses must be substituted for 201 and/or 202.

Writing Studies Minor

Through extensive writing practice informed by historical, rhetorical, linguistic, and theoretical foundations, students who minor in Writing Studies will be prepared to respond effectively to writing situations across disciplines and in various professions.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Writing Studies

Code	Title	Hours
WRIT 272	Introduction to Writing Studies	3
Capstone Course - Choose 1 of the following:		3-12
ENGL 300	English Internship	
ENGL 400	English Internship	
WRIT 472	Digital Portfolio	
Cooperative Education or Writing Workshop		
Electives (12 credits) - Choose 4 of the following:		12-21
COMM 317	Intercultural Communication	
WRIT 343	Theories of Rhetoric	
COMM 441	Political Communication	
WRIT 273	Writing in the Disciplines	
WRIT 274	The Craft of Writing	

WRIT 280	Intro to Rhetoric for Writers	
ENGL 300	English Internship	
WRIT 311	Advanced Composition	
WRIT 312	Technical Writing	
JRNL 313	Fundamentals of Journalism	
WRIT 316	Business Writing	
WRIT 317	Editing for Publication	
WRIT 318	Web Writing	
WRIT 319	Science Writing	
JRNL 327	Feature Writing and Magazine Journalism	
WRIT 340	Rhetorical Analysis	
WRIT 342	Reading/Writing for Civic Chng	
WRIT 466	Sp Top Writing:	
WRIT 471	Creative Writing	
400-level Elective - Choose 1 of the following:		3
COMM 441	Political Communication	
WRIT 466	Sp Top Writing:	
WRIT 471	Creative Writing	
At least one of the elective courses must be taken at the 400 level.		
English Electives - Choose 2 of the following:		6-15
WRIT 273	Writing in the Disciplines	
WRIT 274	The Craft of Writing	
WRIT 280	Intro to Rhetoric for Writers	
ENGL 300	English Internship	
WRIT 311	Advanced Composition	
WRIT 312	Technical Writing	
JRNL 313	Fundamentals of Journalism	
WRIT 316	Business Writing	
WRIT 317	Editing for Publication	
WRIT 318	Web Writing	
WRIT 319	Science Writing	
JRNL 327	Feature Writing and Magazine Journalism	
WRIT 340	Rhetorical Analysis	
WRIT 342	Reading/Writing for Civic Chng	
WRIT 466	Sp Top Writing:	
WRIT 471	Creative Writing	
Two of the elective courses must be taken in the English Department.		

Total Hours 27-54

Entrepreneurship

Millersville University's interdisciplinary minor in entrepreneurship is the only truly interdisciplinary minor of its kind throughout the entire Pennsylvania State System of Higher Education. This minor allows students in any major to bring an entrepreneurial perspective to their specific area of study.

the programs

- Entrepreneurship Minor (p. 114)

the faculty

Dain Estes, Coordinator, Economics Minor.

the courses

ENTR 201: 3 s.h.

The Art of Entrepreneurship (G3)

This course introduces and explores the mind-set and process of entrepreneurship in: (1) social entrepreneurship (solving social issues); (2) business entrepreneurship (starting an innovative enterprise); (3) employee entrepreneurship (as a worker in an existing business) and (4) academic entrepreneurship (the pursuit of a valuable and productive education). Emphasis will be on identifying opportunities and value, developing the art of creative problem solving and effectively expressing those solutions. Prereq: none.

ENTR 279: 3 s.h.

Experimental

ENTR 300: 3-12 s.h.

Co-Op Ed Exp in Entrepreneur

Co-Op Ed Experience in Entrepreneurship

ENTR 315: 3 s.h.

Entrepreneurship Practicum

Serves as training for entrepreneurial leadership and emphasizes experiential learning in the practice and the development of skills that are needed by entrepreneurs, including effective leadership, collaboration, planning, and communication.

ENTR 370: 3 s.h.

Media Entrepreneurship (W)

The course focuses on the major steps needed to create a for-profit or nonprofit communication-based enterprise. Emphasis on media writers creating an entrepreneurial endeavor to serve as a model for further development or continued operation.

ENTR 379: 3 s.h.

Experimental

ENTR 400: 3-12 s.h.

Co-Op Ed Exp in Entrepreneur

Co-Op Ed Experience in Entrepreneurship

ENTR 479: 3 s.h.

Experimental

Experimental Course in Entrepreneurship

ENTR 488: 3 s.h.

Capstone in Entrepreneurship

This course serves as a capstone for the Entrepreneurship Minor and provides students with the opportunity to work on either a simulated or real startup company, as well as examining case studies from leading entrepreneurs. Multidisciplinary teams of students work on mentor-defined or mentor-approved projects, from product or process conception towards commercialization. The course is intended to show what it takes to assemble teams with core competencies in different areas into a successfully functioning business organization. Teams work on a variety of issues including intellectual property, marketing, definition of a product requirements document, human factors, safety and environmental concerns, and legal matters.

ENTR 498: 1-3 s.h.

Ind Stdy.

ENTR 500: 3-12 s.h.

Co-Op Ed Exp in Entrepreneur

Co-Op Ed Experience in Entrepreneurship

Entrepreneurship Minor

The minor in entrepreneurship is a dynamic interdisciplinary program that provides opportunities to Millersville students from different disciplines to interact and learn about entrepreneurship—the process of creating value through recognizing and developing opportunities. It serves to complement the student's major area of study by providing the knowledge and skills needed so that students can create or start their own ventures, work for start-up companies or a family business, or pursue traditional jobs that may involve launching new business units or joint ventures. The goal of the entrepreneurship minor is to learn to think entrepreneurially, identify resources and tools, formulate business plans, and devise clear and compelling value propositions as well as ethical practices.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Entrepreneurship

Code	Title	Hours
ENTR 201	The Art of Entrepreneurship	3
ENTR 315	Entrepreneurship Practicum	3
Social Media Campaigns or Media Entrepreneurship - Choose 1 of the following:		3
COMM 390	Social Media Campaigns	
ENTR 370	Media Entrepreneurship	
DESN 243	Creativity, Innovation & Human-Centered Design Thinking	3
ENTR 488	Capstone in Entrepreneurship	3
Electives - Choose 3 hours from:		3
ART 486	Sp Topics:	
BUAD 101A	Introduction to Business	
BUAD 101B	Introduction to Business	
BUAD 202	Legal Environment of Business	
CHEM 101	Chem!Better Things/Better Lvng	
COMM 206	Communication and Media Law	
COMM 220	Survey of Media	
COMM 251	Public Relations I: Intro to Principles & Theory	
CSCI 101	Problem Solving with Computers	
CSCI 121	Intro to Web Programming	
ECON 102	Principles of Microeconomics	
ECON 326	Economic Growth and Developmnt	
ECON 327	Women and Global Econ Develop	
WRIT 316	Business Writing	

ENTR 300	Co-Op Ed Exp in Entrepreneur
ENTR 400	Co-Op Ed Exp in Entrepreneur
ENTR 498	Ind Stdy.
ENTR 500	Co-Op Ed Exp in Entrepreneur
MUSI 190	Music Industry 1
THEA 350	Theatre Management
THEA 412	Topics in Theatre (Topics: Stage Management)
THEA 412	Topics in Theatre (Topics: Portfolios Careers)

Choose 3.0 to 6.0 credit hours of Entrepreneurship electives in consultation with your adviser.

Total Hours**18**

Government, Policy, and Law

The study of government and politics is integral to understanding people's rights and responsibilities as a citizen and acquiring an understanding of domestic and international affairs.

The Department of Government, Policy, and Law offers three major programs: (1) a Bachelor of Arts (B.A) in Government, Policy, and Law; (2) a Bachelor of Arts (B.A.) in Government, Policy, and Law with a concentration in Pre-Law; and (3) a Bachelor of Science in education (B.S.E.) in secondary education (which provides a teaching certification in the social sciences). The department also offers two minor programs: Government, Policy, and Law; and Government, Policy, and Law: Pre-Law.

Admission Requirements

New students (first year students and transfers) may be admitted to the government, policy and law major by the Office of Admissions upon admission to the University. Admission into the government and political affairs major from other majors at the University is dependent upon approval of the Department of Government, Policy and Law. Such students must have a cumulative GPA of 2.0 or higher to be admitted into the major.

Admission to the Pre-Law concentration is upon approval of the Department of Government, Policy, and Law. Students wishing to declare the concentration after their first semester at Millersville University must have a cumulative GPA of 2.5 or higher to be admitted.

the programs

- Government, Policy, and Law Minor (p. 118)
- Government, Policy, and Law, B.A. (p. 118)
- Government, Policy, and Law, Pre-Law (p. 118)
- Pre-Law Minor (p. 118)

The faculty

Bagchi, Nivedita; Professor

College of Arts, Humanities and Social Sciences
B.A., Converse College, 2001; M.A., University of Virginia, 2003; Ph.D., Ibid., 2009

Bookmiller, Robert; Professor

College of Arts, Humanities and Social Sciences
B.A., Indiana University of Pennsylvania, 1985; M.A., University of Virginia, 1989; Ph.D., Ibid., 1992

Bookmiller, Kirsten; Professor

College of Arts, Humanities and Social Sciences

B.A., The Pennsylvania State University, 1986; M.A., University of Virginia, 1988; Ph.D., Ibid., 1992

Glenn, Richard; Professor

College of Arts, Humanities and Social Sciences
B.A., Carson-Newman College, 1990; M.A., University of Tennessee, 1991; Ph.D., Ibid., 1995

Lawrence, Adam; Associate Professor

College of Arts, Humanities and Social Sciences
B.A., Virginia Polytechnic Institute and State University, 1995; M.A., University of Akron, 1997; Ph.D., University of Pittsburgh, 2004

Owen, David; Associate Professor

College of Arts, Humanities and Social Sciences
B.S., University of Maryland, 1997; M.S., Troy University, 1998; M.S., Ibid., 2005; Ph.D., Southern Illinois University, 2011

the courses

GOVT 100: 3 s.h.

Politics and Popular Culture (G3)

Demonstrates and analyzes the reciprocal relationship between politics and popular culture, both within the United States and globally.

GOVT 111: 3 s.h.

Introduction to American Government (G3)

Introduction to the major tenets of the American political system.

GOVT 112: 3 s.h.

Introduction to State and Local Government (G3)

The federal system and state and local governmental problems. Emphasis on Pennsylvania when possible.

GOVT 179: 3 s.h.

Experimental

Experimental

GOVT 205: 3 s.h.

Introduction to Public Policy (G3)

Decision making by governments in response to public problems. The policy process. Current policy issues, selected from such possible examples as education, abortion, energy and environment. Some problems of policy evaluation.

GOVT 211: 3 s.h.

Introduction to the U.S. Constitution (G3)

An introduction to the U.S. Constitution, with specific attention on its purpose, principles, parts, and theories of interpretation. GOVT 111 highly recommended prior to this course.

GOVT 212: 3 s.h.

Women & American Politics (G3, W)

Examines the role of women in American political institutions including the legislature, executive, and judiciary, the factors which impact women's participation in politics, and the consequences for issues which concern women such as abortion, pay equity, and paid family leave.

GOVT 221: 3 s.h.

Introduction to Comparative Political Systems (G3)

Introduction to the comparative analysis of government and politics through an examination of different political systems including advanced democracies and developing nations.

GOVT 225: 3 s.h.

Modern China (G3)

Study of political development in China, with an emphasis on political behavior, culture, institutions, processes and structure.

GOVT 228: 3 s.h.**Democracy and Its Challenges (W)**

An exploration into the entire process of democratization, from the conditions that allow democracy to emerge through the stages of democratization towards the post-democratic challenges faced around the globe.

GOVT 231: 3 s.h.**Introduction to Political Theory (G3, W)**

Representative philosophers and concepts in the history of Western political theory from antiquity through the 19th century.

GOVT 231H: 3 s.h.**Hnrs: Intro Political Theory (G3)**

Hnrs: Intro Political Theory

GOVT 232: 3 s.h.**Political Theory, Literature, and Film (G3, W)**

Uses literature and film to explore central topics in political theory such as capitalism, socialism, democracy and its problems, technology and its problems, etc. Prereq: ENGL 110

GOVT 241: 3 s.h.**Public Administration and Public Service (G3, W)**

A study of intergovernmental relations, organizational theory, decision making, personnel, management, budgeting, program evaluation and policy analysis. Prereq: ENGL 110. Recommended: GOVT 111.

GOVT 251: 3 s.h.**Introduction to Global Politics (G3)**

The nation-state system. Military, political, economic, organizational and legal relations among states. Power and the pursuit of national goals.

GOVT 252: 3 s.h.**Global Crime and Justice (G3)**

Explores the increasingly transnational nature of crime (including global crimes such as human, arms and drug trafficking), the consequent impact upon human security and sustainable development, and international legal responses. Also addresses the legal distinctions and connections between global and international crimes, the latter including terrorism and crimes against humanity. Open to all majors.

GOVT 279: 3 s.h.**Experimental**

Experimental

GOVT 300: 3-12 s.h.**Co-Op Ed Experience in GOVT**

Co-Op Ed Experience in GOVT

GOVT 312: 3 s.h.**American Political Parties (G3, W)**

The origins of American political parties. The American two party system. Political parties in American campaigns and elections. The role of political parties in American governance. The role of third parties in America. Prereq: ENGL 110. Recommended: GOVT 111.

GOVT 312H: 3 s.h.**Honors: American Political Parties (G3, W)****GOVT 313: 3 s.h.****American Presidency (G3, W)**

Examination of the presidency and the executive branch of national government. Emphasis on the growth and development of presidential power. Prereq: ENGL 110.

GOVT 314: 3 s.h.**American Judiciary (G3, W)**

Examination of state and federal courts. Primary emphasis on federal courts and especially the U.S. Supreme Court. Recommended: GOVT 111.

GOVT 315: 3 s.h.**Congress and Lawmaking (G3, W)**

A study of the organization, rules and procedures of the Senate and House of Representatives and extensive analysis of the internal and external environment for policy making by Congress. State legislatures are also examined in the same manner. Prereq: ENGL 110. Strongly recommended: GOVT 111.

GOVT 323: 3 s.h.**Government and Politics of the Middle East (D, G3)**

Examination of Middle Eastern politics, including the political systems of Israel, the Palestinian national movement, Iraq, Jordan, Saudi Arabia, Turkey, Syria, and Iran. It assumes a comparative approach toward several regional issues, such as terrorism, the Palestinian-Israeli conflict, Islamic fundamentalism and the peace process. The impact of national, economic, gender and religious perspectives upon the region's politics will also be addressed. GOVT 221 recommended.

GOVT 325: 3 s.h.**Modern Asia (G3)**

Study of political development across East Asia, with an emphasis on political behavior, culture, institutions, processes and structure.

GOVT 327: 3 s.h.**Canadian Government and Politics (P)**

Government and politics of Canada and an examination of how its geography, history, economics and culture have affected its governance. Consideration of major policy issues and their impact on Canada's future. Prereq: COMM 100, ENGL 110 and junior status.

GOVT 327H: 3 s.h.**Honors: Canadian Government and Politics (P)****GOVT 331: 3 s.h.****Modern Political Thought**

This course will examine political thinkers from Machiavelli to Nietzsche. Among others, it will explore the thought of Hobbes, Locke, Rousseau, Marx, Hume, etc. The course will explore questions regarding human nature, the ideal state, the tensions between principles of freedom and equality, critique of existing systems, etc. Prereq: GOVT 111, Prereq/ Coreq: GOVT 231.

GOVT 332: 3 s.h.**Contemporary Politics (G3, W)**

Examines the principles and ideologies found in current politics. Includes an examination of progressivism, communism, conservatism, multiculturalism, etc.

GOVT 333: 3 s.h.**American Political Thought (G3, W)**

Study of the history and development of democracy in an American setting. Emphasis on different and often conflicting versions of democratic theory and practice. Prereq: ENGL 110

GOVT 341: 3 s.h.**Introduction to City Planning (P)**

Study of the dynamics of human settlement patterns in the country and abroad. Examines public policy alternatives regarding land use and development patterns. Introduces methods and techniques used in designing settlement systems and studies values reflected in human settlement patterns. Prereq: COMM 100, ENGL 110 and junior status.

GOVT 351: 3 s.h.**International Law**

Classical sources and recent developments in international law. Evaluation of law in the context of world politics. Recommended: GOVT 251.

GOVT 351H: 3 s.h.**Honors: International Law**

H:International Law

GOVT 352: 3 s.h.**International Organizations (G3)**

Study of various intergovernmental and nongovernmental associations representing a number of multinational groupings serving humanitarian, economic and security functions. Emphasis on organizations such as the United Nations and the European Union. Recommended: GOVT 251.

GOVT 355: 3 s.h.**American Foreign Policy (G3)**

Institutional and historical overview of American foreign policy. Formal, informal and institutional sources of foreign policy. Emphasis on post-WWII presidential administrations. Recommended: GOVT 111 or GOVT 251.

GOVT 355H: 3 s.h.**Honors: American Foreign Policy (G3)**

Hnrs:American Foreign Policy

GOVT 356: 3 s.h.**Disasters and Our World (P)**

Provides a multi-perspective and global exploration into why there is no such thing as a "natural" disaster. The political, economic, social and environmental sources of vulnerability to such events will be explored along with the role disasters play in some of the 21st century's most pressing global policy challenges. Open to all majors. Prereq: ENGL 110, COMM 100 and Junior Class Standing. Students who completed GOVT 408.02: Disasters and Global Politics in Fall 2019 are not eligible to earn credit for this course.

GOVT 361: 3 s.h.**Politics of Race and Ethnicity (D, G3)**

Examination of the role of racial and ethnic minority groups in American politics and government. Focus on political resources and political status of ethnic minority groups in America, ethnic minority group representation and participation in American politics, the racial divide in American public opinion, racial politics in America's cities and strategies of ethnic minority political empowerment. Prereq: GOVT 111.

GOVT 379: 3 s.h.**Experimental**

Experimental

GOVT 379H: 3 s.h.**Honors: Experimental****GOVT 400: 3-12 s.h.****Co-Op Ed Experience in GOVT**

Co-Op Ed Experience in GOVT

GOVT 401: 3 s.h.**Political Research Skills and Methods**

Knowledge and application of the Scientific Method in political research. Focus on empirical research, explanation and causation, measurement, hypothesis testing, and the challenges of conducting political research.

GOVT 408: 3 s.h.**Seminar in Government, Policy and Law**

Analysis of critical problems in the discipline. Research and preparation of a written report. Seminar may be taken for credit more than once, provided content is different each time.

GOVT 408H: 3 s.h.**Honors: Seminar in Government, Policy, and Law****GOVT 411: 3 s.h.****Constitutional Law: Federalism and Separation of Powers**

Focus on the allocation of power between branches and among levels of government, as interpreted through significant cases of the U.S. Supreme Court. Prereq: GOVT 111. Recommended: GOVT 314.

GOVT 411H: 3 s.h.**Honors: Constitutional Law: Federalism and Separation of Powers****GOVT 412: 3 s.h.****Constitutional Law: Civil Rights and Civil Liberties**

Focus on individual rights and liberties protected by the U.S. Constitution and Bill of Rights, as interpreted through significant cases of the U.S. Supreme Court. Prereq: GOVT 111. Recommended: GOVT 314.

GOVT 412H: 3 s.h.**Honors: Constitutional Law: Civil Rights and Civil Liberties****GOVT 431: 3 s.h.****Literature and Politics (W)**

This course will take one work of fiction, a particular author/writer, or a number of different works of fiction which are thematically connected, and examine the political, social, and cultural questions and issues embedded in these works. Political philosophy asks central questions about human life- what makes us human; what, if anything, makes the best state; how can humans live together while being individuals in their own right, etc. Well crafted works of political fiction are often the best gateway to politics since they use a fictional reality to develop abstract concepts. In fact, some of the best works of political philosophy is fiction. Instructors will choose works of fiction which, juxtaposed with political writings, speeches, articles, and texts, enable students to identify and answer the great political questions of generations. Prereq: C- or higher GOVT 111 and GOVT 231

GOVT 455: 3 s.h.**US-Middle East Foreign Relations (W)**

An institutional, historical and contemporary overview of American foreign policy in the Middle East. While key events and political processes equated with the post-World War II period will be examined, the focus of GOVT 455 will be on current US interests and policies within the region. Past events will be utilized to underscore their contemporary political relevance to US policymakers. Specifically, American policy vis-a-vis Israel, the Palestinian national movement, Egypt, Iran, Iraq, Saudi Arabia, Turkey, and Syria will be explored in detail.

GOVT 456: 3 s.h.**Global Humanitarianism (W)**

Explores the complex landscape of international humanitarian assistance, including its political, economic, governance and ethical challenges, as well as its historical evolution. It will prepare students for direct entry into a related field, post-graduate study or becoming an international aid or development volunteer. Prereq: ENGL 110, GOVT 251 OR INTL 201 and Junior class standing or permission of instructor.

GOVT 479: 3 s.h.**Experimental**

Experimental

GOVT 489: 1-4 s.h.**Honors Course**

Honors Course

GOVT 498: 1-6 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

GOVT 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

GOVT 500: 3-12 s.h.**Co-Op Ed Experience in GOVT**

Co-Op Ed Experience in Government, Policy and Law

Pre-Law Minor

The pre-law minor in the Department of Government, Policy, and Law (GOVT) is intended for students who are interested in

- (1) the formal study of law;
- (2) how law intersects with politics;
- (3) attending law school or a law-related graduate program; or
- (4) pursuing a career in law or a law-related field.

The core skills, knowledge and experience acquirable in the pre-law minor will provide a sound foundation for law school, law-related careers and a variety of other professions.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Pre-Law

Code	Title	Hours
GOVT 111	Introduction to American Government	3
	Introduction to the US Constitution	3
GOVT 211	Introduction to the U.S. Constitution	
GOVT 252	Global Crime and Justice	3
GOVT 314	American Judiciary	3
GOVT 351	International Law	3
GOVT 411	Constitutional Law: Federalism and Separation of Powers	3
GOVT 412	Constitutional Law: Civil Rights and Civil Liberties	3
Total Hours		21

Government, Policy, and Law Minor

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Government, Policy, and Law

Code	Title	Hours
American Politics - Choose 1 of the following:		3
GOVT 111	Introduction to American Government	
GOVT 112	Introduction to State and Local Government	
GOVT 312	American Political Parties	
GOVT 333	American Political Thought	
International or Comparative Politics - Choose 1 of the following:		3
GOVT 221	Introduction to Comparative Political Systems	
GOVT 251	Introduction to Global Politics	
GOVT 351	International Law	
GOVT 352	International Organizations	
Government Political Affairs Electives		
Choose 12 credits of Govt Political Affairs electives in consultation with your adviser.		
Total Hours		6

Government, Policy, and Law, B.A.

Courses consist of American political institutions; comparative politics; political theory; global politics; and American and international law. Students will be introduced to political concepts, political behaviour, policy issues, and structures of government within societies and among nations.

A degree in Government, Policy, and Law allows students to prepare for active citizenship, careers and advanced training in politics, law and related fields on both a national and international stage. Students should expect to gain a perspective on the many facets of government and politics in the United States and abroad, as well as the relationships among those governments.

Government, Policy, and Law, Pre-Law

This program is intended for students who are interested in the formal study of law and how it intersects with politics; attending law school or a law-related graduate program; or pursuing a career in law or a law related field. Within the forty-two credits required for a B.A. in Government, Policy, and Law, students seeking a pre-law concentration must take

courses on the U.S. Constitution; global crime and justice; the American judiciary; international law; and (two-semester) of constitutional law.

Social Studies, B.S.Ed. - Government Advised

Major in Social Studies Government, BSE

Code	Title	Hours
MAJOR REQUIRED CORE FOUNDATION		
ECON 100	Introductory Economics	3
ECON 203	Introduction to World Economy	3
GEOG 120	Human Geography	3
Geography Course - Choose 1 of the following:		3
GEOG 141	World Regional Geography	
GEOG 226	Political Geography	
GEOG 248	Geography of Africa	
GEOG 342	Europe	
GEOG 343	Latin America & the Caribbean	
GEOG 344	North America	
GEOG 281	Maps and GIS	3
GOVT 111	Introduction to American Government	3
GOVT 221	Introduction to Comparative Political Systems	3
GOVT 251	Introduction to Global Politics	3
History Electives - Choose 2 of the following:		6
HIST 101	Europe and the World 1350-1789	
HIST 102	Europe and World 1789-Present	
HIST 206	World Culture & Religion to 1500	
HIST 280	Pre-Colonial Africa	
HIST 105	History Matters	3
HIST 106	Contours of US History	3
HIST 205	The Art & Craft of History	3
PSYC 100	General Psychology	3
SOCY 210	Sociology of the Family	3
Total Hours		45

BSE SST Concentration Courses

Code	Title	Hours
Due to the interdisciplinary nature of the social studies major, please work closely with your advisor to select courses appropriate to your plan. You must take 15 total credits to complete the concentration.		
Geography		0
You may take up to 9 credits of Geography (GEOG) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Government		0
You may take up to 9 credits of Government (GOVT) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
History		0

You may take up to 9 credits of History (HIST) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Anthropology		0
You may take up to 6 credits of Anthropology (ANTH) courses toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Psychology		0
You may take up to 6 credits of Psychology (PSYC) at the 200-level or higher toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Sociology		0
You may take up to 6 credits of Sociology (SOCY) courses toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Total Hours		0

Professional Education

Code	Title	Hours
EDUCATIONAL FOUNDATIONS		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
REQUIRED EDUCATION COURSES		
EDSE 321	Issues in Secondary Education	3
EDFN 330	Instructional Technology, Design & Assessment	3
EDSE 433	Teaching of Secondary Social Studies	3
ACCOMMODATIONS AND ADAPTATIONS		
EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3
STUDENT TEACHING		
EDSE 471	Student Teaching Seminar	3
EDSS 461	Student Teaching in Soc Sci	9
Total Hours		33

Advanced Professional Studies, BSE

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		
APS REQUIREMENTS		
English Composition - Choose 1 of the following:		3
ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	

ENGL 236	American Literary Tradition II
ENGL 241H	H:Explorations in World Lit
ENGL 242	Reading Our World:
ENGL 292	Science Fiction
ENGL 333	African-American Literature 1
ENGL 333H	Hnrs:African American Lit 1
ENGL 334	African American Literature 2
ENGL 334H	Hnrs:African American Lit 2
ENGL 336	New Dimensions to World Lit
ENGL 338	Folklore and Literature
ENGL 401	Old Eng Lang and Literature
ENGL 402	Middle Eng Lang and Literature

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211	Foundations Modern Education	6
& EDFN 241	and Psychological Foundations of Teaching	

48 earned (transcript) credit hours are required

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours **12**

History

The Department of History offers courses in U.S. and world history and major degrees in both the liberal arts and secondary education. A history minor is also available to nonhistory majors. The department's program in secondary education provides teaching certification. Academic counseling is available for students choosing careers in history.

A degree in history may be an end in itself. It is, however, an excellent choice for anyone who wishes to pursue entry into a wide variety of careers. Many recent graduates have gone on to graduate study in history, law, archaeology, museum studies, library studies, and other fields. The BA degree in History requires 120 credits, with 42 of those in History. Required courses include surveys of US and World History, four skills courses, and electives in four geographical categories (European, US, Asian/African/Latin American, and Transnational) and two chronological categories (pre-1815 and post-1815). At least three courses must be 300-level or higher.

the programs

- History Minor (p. 124)
- History, B.A. (p. 125)
- Military Science Minor (p. 133)
- Social Studies, B.S.Ed. (p. 158)

the faculty

Davis, Robyn; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Columbia University, 1993; M.A., University of Oklahoma, 2001; Ph.D., Ibid., 2009

Frankum, Ronald; Professor

College of Arts, Humanities and Social Sciences

B.A., Syracuse University, 1988, M.A., University of Kentucky, 1991; Ph.D., Syracuse University, 1997

Kevorkian, Tanya; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Mount Holyoke College, 1987; M.A., Johns Hopkins University, 1993; Ph.D., Ibid., 1997

Khiterer, Victoria; Professor

College of Arts, Humanities and Social Sciences

B.S., Kiev State Pedagogical Institute (Ukraine), 1992; M.A., Russian State University for Humanities, 1996; Ph.D., Ibid., 1996; Brandeis University, 2008

Maxwell, Clarence; Assistant Professor

College of Arts, Humanities and Social Sciences

B.A., St. Leo University (United Kingdom), 1985; B. A., University of Keelee (United Kingdom), 1990; M.A., University of Hull (United Kingdom), 1995; Ph.D., University of Warwick (United Kingdom), 1999

Onek, Curthberth; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Makerere University (Uganda), 1985/ M.A., University of Toronto (Canada), 1991; M.S., York University (Toronto), 1997; M.A., The Royal Military College of Canada, 2005; Ph.D., University of Connecticut, 2009

Shelor, Erin; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Furman University, 1992; M.A., East Tennessee State University, 1996; Ph.D., University of Kentucky, 2003

Sommar, Mary; Assistant Professor

College of Arts, Humanities and Social Sciences

B.A., Temple University, 1975; M.Div., Yale University, 1990; Ph.D., Syracuse University, 1998

the courses

HIST 101: 3 s.h.

Europe and the World 1350-1789 (G3)

Europe and its world relationships during the centuries of the Reformation, the scientific revolution, overseas expansion and revolution. Offered in fall, spring.

HIST 102: 3 s.h.

Europe and World 1789-Present (G3)

Europe and its world relationships in the age of industrialization and democratization. Offered in fall, spring.

HIST 105: 3 s.h.

History Matters

An introduction to the study of history as an academic discipline (a major) and as a profession (a career) with a focus on research, interpretation, and teaching.

HIST 105H: 3 s.h.

Hon: Craft of History

HIST 106: 3 s.h.

Contours of US History (G3)

A survey of United States history from the peopling of the Americas to the present. Identifies and examines the key themes in the creation and transformation of the nation and its peoples. Offered in fall, spring.

HIST 107: 3 s.h.

Pre-Modern World Cultures (G3)

General survey of world history and culture from known beginnings to 1500. Intended for nonmajors. Offered periodically. Equivalent course HIST 206: No credit given if credit earned for HIST 206. Offered annually.

HIST 179: 3 s.h.

Experimental

Experimental

HIST 200: 3 s.h.

Reimagining Holidays & Heroes (G3)

Content-based inquiry into the celebration of US holidays and heroes. Course covers American Revolution and founding of the United States, Indigenous America since pre-Columbian interactions, and a history of Blacks in America from 1619 to the present.

HIST 205: 3 s.h.

The Art & Craft of History

An intermediate investigation of the practices of historical investigation: formulation of research queries, location and analysis of evidence, and analytical narration of findings. Prereq: HIST 105 with a grade of C- or higher.

HIST 206: 3 s.h.

World Culture & Religion to 1500 (D, G3, W)

Survey of world history from known beginnings to 1500. Offered annually. Equivalent course HIST 107: No credit given if credit earned for HIST 107. Prereq: ENGL 110.

HIST 213: 3 s.h.

Greeks and Romans (G3)

This course considers the social, political and economic history of Ancient Greece and Rome. No prior knowledge of history is necessary.

HIST 214: 3 s.h.

History of Christianity (D, G3)

Examines the formation of early Christianity, the spread of Christianity from the Roman Mediterranean through Asia, Africa, and Europe, and the major issues of European Reformation.

HIST 215: 3 s.h.

Slaves & Masters Ancient World (G3)

Considers the social, political and economic factors concerning the practice of slavery in ancient world cultures. No prior knowledge of history is necessary.

HIST 215H: 3 s.h.

Hon: Slaves/Master Ancient Wrl (G3)

HIST 216: 3 s.h.

Vikings (G3)

Considers the social, political and economic history of the Viking explorers and their society. No prior knowledge of history is necessary.

HIST 216H: 3 s.h.

Hon: Vikings (G3)

HIST 218: 3 s.h.

People and the Environment (G3, W)

This course offers an introduction to the methods and insights of environmental history in Europe and the Americas from 1500 to the present. It examines developments in Europe, with background in medieval dynamics and a focus on the period from 1500 onward, through 18th-century projects that cleared land and drained swamps, 19th and 20th century industrialization, World Wars I and II, and the post-World War II era. It also discuss the European colonization of the Americas, with background on Indian use of the land before contact with colonists.

HIST 222: 3 s.h.

Modern Britain (G3)

Modern England: the political, social, economic and cultural evolution of England from 1688 to the present. Offered annually.

HIST 222H: 3 s.h.

Hnrs: Modern Britain (G3)

HIST 223: 3 s.h.

Traditional Germany (G3, W)

The evolution of the German people and their political, cultural and socio-economic institutions from Roman times to 1806. Offered annually. Prereq: ENGL 110.

HIST 224: 3 s.h.**Modern Germany (G3, W)**

German history from 1806 to the present. Offered annually. Prereq: ENGL 110.

HIST 225: 3 s.h.**Germany, 1945-Present (G3, W)**

This course examines the transformation of Germany from 1945, when, at the end of World War II, there were four occupational zones and no German state, through the era of two German states, East and West, from 1949 to 1990, to the present post-reunification Germany. The events of the Third Reich, World War II, and the Holocaust will form a backdrop to much of this history, and we will quickly review them. Then, the course focuses on the activities of the four occupying powers (the United States, the Soviet Union, Great Britain, and France) in the post-war years, the emerging Cold War, the formation of East and West Germany, developments from the 1950s to the 1980s, the collapse of East Germany and reunification, and post-reunification developments. Prerequisites: ENGL 110 or ENGL 110H

HIST 230: 3 s.h.**Modern Jewish History (G3, W)**

Survey of the history of Jews in the mid 18th-20th centuries. Course designed to enrich students' historical and cultural knowledge and improve students' understanding of Gentile-Jewish relations in the modern world. Offered periodically. Prereq: ENGL 110.

HIST 241: 3 s.h.**Imperial Russia (G3, W)**

Political, cultural, economic and social history from Peter the Great to the Russian Revolution. Offered annually. Prereq: ENGL 110.

HIST 241H: 3 s.h.**Hon: Imperial Russia (G3, W)****HIST 242: 3 s.h.****Soviet Union (G3)**

Political, cultural, economic and social history from the Russian Revolution to the present. Offered annually.

HIST 250: 3 s.h.**Women in American History (G3, W)**

History of women in the United States from the early 16th century through the late 20th century, with a particular emphasis on the significance of race, class, religion and region in the shaping of women's experiences. Offered periodically. Prereq: ENGL 110.

HIST 250H: 3 s.h.**H:Women in American History (G3, W)**

Honors Course - History of women in the United States from the early 16th century through the late 20th century, with a particular emphasis on the significance of race, class, religion and region in the shaping of women's experiences.

HIST 272: 3 s.h.**Afro-American History 1 (G3, W)**

History of African Americans from their first arrival in the Americas through the Civil War, with a particular emphasis on the process of enslavement, the formation of African-American communities and institutions, and the evolution of Black abolitionism. Offered annually. Prereq: ENGL 110.

HIST 273: 3 s.h.**Afro-American History 2 (G3, W)**

History of African Americans from the Civil War through the present, with a particular emphasis on the processes of emancipation, urbanization and enfranchisement. Offered annually. Prereq: ENGL 110.

HIST 276: 3 s.h.**Am Foreign Rltns, 1890 to Pres (G3)**

With the rise of the United States as an international power in the 1890s through its current foreign policy initiatives, it has acted as a leader in the world community. This course examines the rise, decline and resurrection of the United States as a world power through its foreign relations. Offered annually. Prereq: ENGL 110.

HIST 276H: 3 s.h.**Hon: Am For Rltns, 1890-Presen (G3)****HIST 279: 3 s.h.****Experimental**

Experimental

HIST 280: 3 s.h.**Pre-Colonial Africa (G3)**

Examines major social, economic and political developments in pre-colonial African societies. It begins with an overview of historiographical debates of African history, the peopling of Africa, early migration, agricultural innovation, climatic changes to the development of civilizations and cross-cultural contacts. Offered annually.

HIST 281: 3 s.h.**African History (G3)**

A survey of African history; special emphasis on the period since 1500. Offered annually. Prereq: ENGL 110.

HIST 282: 3 s.h.**Transatlantic Slave Trade (G3)**

This course examines the Transatlantic slave trade as a transcontinental episode that was responsible for the forced migration of millions of Africans to the Americas and Europe. It critically analyzes the various dimensions of the global forces that created the Atlantic World, experienced by tens of millions of enslaved African people. It illuminates the origins and continuing legacy of inequality based in European expansion, enslavement and economic supremacy. As an exploration of human history in the Atlantic World, this course discusses indepth the historiography of the slave trade and slavery in contemporary political, economic and social interactions of Africa, Americas and Europe.

HIST 283: 3 s.h.**Colonial Latin America (G3, W)**

From pre-Columbian America to the independence of Latin America (1825). Offered periodically. Prereq: ENGL 110.

HIST 284: 3 s.h.**Modern Latin America (G3, W)**

Continuation of HIST 283 from 1826 to the present. Offered annually. Prereq: ENGL 110.

HIST 285: 3 s.h.**Decolonizatr EU Emp in Africa (G3)**

This course examines the process of the fall and dissolution of European Empires in the decades following the ending of the Second World War. It discusses the historiographical debate of factors that precipitated decolonization in teh international, metropolitan, and national arenas. The course explores colonial insurgency and counterinsurgency programs as well as negotiated, non-violent struggles that culminated in the transfer of power to African nationalists.

HIST 286: 3 s.h.**War, Revolution and Terrorism (G3)**

Examines causes, conducts, and consequences of modern wars, revolutions, and terrorism in our contemporary world. Offers students a critical understanding of the concepts and competing theories associated with the study of war. Also explores the social, political, and economic predicaments of modern states confronting the various forms of warfare.

HIST 286H: 3 s.h.**Hon: War, Revolution & Terrori (G3)****HIST 300: 3-12 s.h.****Co-Op Ed Experience in History**

Co-Op Ed Experience in History

HIST 305: 3 s.h.**Historical Investigations**

An advanced investigation of a selected topic in history that combines readings colloquium and research seminar. Prereq: HIST 205 C- or better.

HIST 308: 3 s.h.**Topics in History (G3)**

A thematic investigation of a significant historical topic with course structure and topic determined by the instructor prior to the preregistration period. Offered periodically.

HIST 308H: 3 s.h.**H Topics:**

H Topics:

HIST 313: 3 s.h.**History of Middle Ages (G3, W)**

Major political, cultural and socioeconomic developments in Europe, c. 500-1300 A.D. Offered annually. Prereq: ENGL 110.

HIST 313H: 3 s.h.**Hon: Hist of Middle Ages (G3, W)****HIST 314: 3 s.h.****The Crusades (D, G3)**

The history of the European Crusade movement to the Levant, as it was then called. The course will not concentrate on military history, but rather on the social, cultural and political factors that led to and resulted from these expeditions. The course will consider these issues from the point of view of the several groups of people, European and West Asian, who were involved in these events. Offered annually.

HIST 320: 3 s.h.**Renaissance and Reformation (G3, W)**

Cultural, social and political history of Europe, 1300-1650, with emphasis on Renaissance arts and literature and 16th century religious upheaval. Offered periodically. Prereq: ENGL 110.

HIST 330: 3 s.h.**Nineteenth-Century Europe (G3, W)**

The history of 19th-century Europe, including social, political, intellectual, cultural, religious and economic history. Offered periodically. Prereq: ENGL 110.

HIST 330H: 3 s.h.**Hnrs:Nineteenth-Century Europe (G3, W)****HIST 334: 3 s.h.****Victorian England (G3, W)**

The political, social, economic and intellectual development of England and the British Empire from the end of the Napoleonic wars to the outbreak of World War I. Offered periodically. Prereq: ENGL 110.

HIST 334H: 3 s.h.**H:Victorian England (G3, W)**

Honors Course - The political, social, economic and intellectual development of England and the British Empire from the end of the Napoleonic wars to the outbreak of World War I.

HIST 340: 3 s.h.**Twentieth Century Europe (G3, W)**

The political, socio-economic, cultural and diplomatic transformation of Europe, 1900 to the present. Offered periodically. Prereq: ENGL 110.

HIST 342: 3 s.h.**Hitler and Nazism (G3, W)**

The origins, development and impact upon Germany and the rest of the world of National Socialist theory and practice. Offered annually. Prereq: ENGL 110.

HIST 351: 3 s.h.**17th Century British America (G3, W)**

The founding and growth of the British Colonies to the Glorious Revolution of 1688, with particular attention devoted to society, beliefs and government. Offered annually. Prereq: ENGL 110.

HIST 352: 3 s.h.**Provincial and Revolutionary America (G3, W)**

America from the Glorious Revolution to the completion of the American Revolution, with particular attention to social, cultural and political developments such as the Enlightenment, the Great Awakening and the War for Independence. Offered annually. Prereq: ENGL 110.

HIST 352H: 3 s.h.**Hnrs:Provinci and Revolutry Am (G3, W)****HIST 355: 3 s.h.****Civil War and Reconstruction (G3)**

The social, political and economic causes of the Civil War, the military and social events of the war, and the postwar developments of Reconstruction, with particular emphasis on the place of African Americans in U.S. society.

HIST 356H: 3 s.h.**H:New Era, 1876-1919 (G3)**

Honors Course - Responses to industrialization from populism through the progressive era. Changes in thought and culture. World War I and American society. The rise of America as a world power.

HIST 357: 3 s.h.**Modern U.S. History (G3)**

The United States from 1900 to the present. Focus is on political and social, not military, history. Offered periodically

HIST 359: 3 s.h.**First World War (G3)**

This course focuses on the military strategy and tactics employed by the combatants during the First World War (1914-1918). Offered annually.

HIST 360: 3 s.h.**The Second World War (G3)**

The course focuses on the military strategy and tactics employed by the combatants during the Second World War (1939-1945). Offered annually.

HIST 379: 3 s.h.**Experimental**

Experimental

HIST 383: 3 s.h.**Eur Imprlsm in Af 1870-1914 (G3, W)**

Provides an informed understanding of major themes in late 19th- and early 20th-century Africa, with a particular focus on the impact of British, French, Belgian and German imperialism. Special attention will be given to the discussion of the historiography of imperialism related to Africa. Contemporary Africa will be used to provide a background for assessing the effect of imperialism on African society, politics and economies. Offered annually. Prereq: ENGL 110/H.

HIST 388: 3 s.h.**Twentieth-Century Africa (G3, W)**

Course surveys major developments in 20th-century Africa by situating them in their respective historical contexts. It examines the idea of race, cultural representation of others, colonial economic relations, decolonization, national liberation movements, debts, structural adjustment programs, democracy, post-apartheid South Africa, the emergence of U.S. Africa Command (AFRICOM) and Human Rights and Development. Offered periodically. Prereq: ENGL 110.

HIST 400: 3-12 s.h.**Co-Op Ed Experience in History**

Co-Op Ed Experience in History

HIST 401: 3 s.h.**Cultural Interactions across the Atlantic World, 1450-1820 (P)**

This perspectives course will compare the social, economic, political and religious relations of three areas: Africa, Europe and the Native Societies of the Americas in and during the period of the formation of the Atlantic World. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

HIST 401H: 3 s.h.**H:Atlantic World, 1450-1820**

Honors Course - This perspectives course will compare the social, economic, political and religious relations of three areas: Africa, Europe and the Native Societies of the Americas in and during the period of the formation of the Atlantic World.

HIST 405: 3 s.h.**Senior Seminar**

Students will prepare and defend a seminar paper of approximately 25 pages. Prereq: HIST 205 with a grade of C- or higher; junior or senior standing or permission of instructor. Satisfies advance writing (AW) requirement if a grade of B or higher is attained.

HIST 453: 3 s.h.**Indians & Colonists in PA (P)**

Early Pennsylvania became home to a variety of groups in the course of the 18th century. This course takes a transatlantic approach as it explores the diverse backgrounds of European settlers and the Native Americans whom they encountered, and interactions following the establishment of the colony. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

HIST 453H: 3 s.h.**H:Colonial PA German Society (P)****HIST 470: 3 s.h.****The Vietnam War (P)**

The Vietnam War continues to be one of the more controversial moments in the history of the United States. Course examines the war with the objective of achieving a greater understanding of why the United States entered into the conflict and how the war was fought on the military battlefields in Vietnam and political battlefields in Washington, D.C., Saigon, Hanoi and around the world. Offered annually. Prereq: COMM 100, ENGL 110 and junior status.

HIST 470H: 3 s.h.**Hnrs:The Vietnam War (P)**

Honors Course - The Vietnam War continues to be one of the more controversial moments in the history of the United States. Course examines the war with the objective of achieving a greater understanding of why the United States entered into the conflict and how the war was fought on the military battlefields in Vietnam and political battlefields in Washington, D.C., Saigon, Hanoi and around the world.

HIST 479: 3 s.h.**Experimental**

Experimental

HIST 480: 3 s.h.**History of Medicine (G3)**

The history of medicine, health and disease, including political, social, cultural, religious and economic factors from the ancient world to the present. The course includes material from European, American and world perspectives. Offered periodically.

HIST 480H: 3 s.h.**Hnrs: History of Medicine (G3)**

Honors Section. The history of medicine, health and disease, including political, social, cultural, religious and economic factors from the ancient world to the present. The course includes material from European, American and world perspectives. Offered periodically.

HIST 489: 1-6 s.h.**Honors Course**

Honors Course

HIST 489H: 1-4 s.h.**Honors Course****HIST 490: 3 s.h.****17th Century Anglo-America (P)**

This perspectives course introduces students to the use of anthropological methods in studying past societies through examinations of small communities in England and America. Offered annually. Prereq: COMM 100, ENGL 110 and junior status.

HIST 498: 1-6 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

HIST 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

HIST 500: 3-12 s.h.**Co-Op Ed Experience in History**

Co-Op Ed Experience in History

History Minor

Students who choose a minor in history are required to take a minimum of 18 semester hours of history courses distributed according to

departmental guidelines. All history courses except applied history will count toward a minor.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in History

Code	Title	Hours
United States History - Choose 2 classes from:		
HIST 106	Contours of US History	
Any 25-level HIST course(s)		
Any 26-level HIST course(s)		
Any 27-level HIST course(s)		
Any 35-level HIST course(s)		
Any 36-level HIST course(s)		
Any 37-level HIST course(s)		
Any 45-level HIST course(s)		
Any 46-level HIST course(s)		
Any 47-level HIST course(s)		
HIST 501	U.S. History, Beginnings-1815	
HIST 502	U.S. History 1815-1919	
HIST 503	U.S. History, 1919 to present	
HIST 510	Tpc in US Hist:	
World History - Choose 2 classes from:		
HIST 101	Europe and the World 1350-1789	
HIST 102	Europe and World 1789-Present	
HIST 206	World Culture & Religion to 1500	
Any 22-level HIST course(s)		
Any 23-level HIST course(s)		
Any 24-level HIST course(s)		
HIST 281	African History	
HIST 282	Transatlantic Slave Trade	
HIST 283	Colonial Latin America	
HIST 284	Modern Latin America	
Any 31-level HIST course(s)		
Any 32-level HIST course(s)		
Any 33-level HIST course(s)		
Any 34-level HIST course(s)		
Any 41-level HIST course(s)		
Any 42-level HIST course(s)		
Any 43-level HIST course(s)		
Any 44-level HIST course(s)		

HIST 505	Early Modern Europe, 1500-1789	
HIST 506	Age of Revolution, 1789-1914	
HIST 507	Modern Europe, 1914-Present	
HIST 511	Tpc in Eur Hist:	
History Electives		
Choose history electives in consultation with your adviser. You have taken 0 class(es). You need 2 class(es). You may click here to search the current web schedule.		
Total Hours		0

**History, B.A.
Social Studies, B.S.Ed. - History
Advised**

Major in Social Studies History, BSE

Code	Title	Hours
MAJOR REQUIRED CORE FOUNDATION		
ECON 100	Introductory Economics	3
ECON 203	Introduction to World Economy	3
GEOG 120	Human Geography	3
Geography Course - Choose 1 of the following:		
GEOG 141	World Regional Geography	
GEOG 226	Political Geography	
GEOG 248	Geography of Africa	
GEOG 342	Europe	
GEOG 343	Latin America & the Caribbean	
GEOG 344	North America	
GEOG 281	Maps and GIS	3
GOVT 111	Introduction to American Government	3
GOVT 221	Introduction to Comparative Political Systems	3
GOVT 251	Introduction to Global Politics	3
History Electives - Choose 2 of the following:		
HIST 101	Europe and the World 1350-1789	
HIST 102	Europe and World 1789-Present	
HIST 206	World Culture & Religion to 1500	
HIST 280	Pre-Colonial Africa	
HIST 105	History Matters	3
HIST 106	Contours of US History	3
HIST 205	The Art & Craft of History	3
PSYC 100	General Psychology	3
SOCY 210	Sociology of the Family	3
Total Hours		45

BSE SST Concentration Courses

Code	Title	Hours
Due to the interdisciplinary nature of the social studies major, please work closely with your advisor to select courses appropriate to your plan. You must take 15 total credits to complete the concentration.		
Geography		0

You may take up to 9 credits of Geography (GEOG) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Government 0

You may take up to 9 credits of Government (GOVT) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

History 0

You may take up to 9 credits of History (HIST) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Anthropology 0

You may take up to 6 credits of Anthropology (ANTH) courses toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Psychology 0

You may take up to 6 credits of Psychology (PSYC) at the 200-level or higher toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Sociology 0

You may take up to 6 credits of Sociology (SOCY) courses toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Total Hours 0

Professional Education

Code	Title	Hours
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EDUCATIONAL FOUNDATIONS

EDFN 211	Foundations Modern Education	3
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EDFN 241	Psychological Foundations of Teaching	3
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REQUIRED EDUCATION COURSES

EDSE 321	Issues in Secondary Education	3
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EDFN 330	Instructional Technology, Design & Assessment	3
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EDSE 433	Teaching of Secondary Social Studies	3
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ACCOMMODATIONS AND ADAPTATIONS

EDSE 340	Content Area Literacy for Diverse Classrooms	3
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SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3
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STUDENT TEACHING

EDSE 471	Student Teaching Seminar	3
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EDSS 461	Student Teaching in Soc Sci	9
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Total Hours 33

Advanced Professional Studies, BSE

Code	Title	Hours
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*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.

APS REQUIREMENTS

English Composition - Choose 1 of the following:	3
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ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211	Foundations Modern Education	6
& EDFN 241	and Psychological Foundations of Teaching	

48 earned (transcript) credit hours are required

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. [Click here for the application.](#)

Total Hours

12

International Studies

Millersville University offers a major and minor in international studies. Many faculty from various disciplines teach in the program.

Living in the 21st century shows us that interdisciplinary and cross-cultural studies contain extreme importance in our global system. Our lives increasingly entwine with lives and events with people halfway around the globe. National and international organizations, governments, and businesses, in both the public and private sectors, have increased their demand for students who have an understanding of the complex international community.

The B.A. Degree in International Studies provides students with a valuable global perspective and the skills needed to pursue a future career and/or higher degrees in the areas of:

- Government
- Teaching
- Communication
- Non-Profit
- Law
- Journalism
- Business
- Various others

the programs

- International Studies Minor (p. 127)
- International Studies, B.A. (p. 129)

the faculty

Assoc. Professor N. Bagchi, coordinator

the courses

INTL 201: 3 s.h.

Intro to International Studies (G3)

Study of global cultural diversity, economic interdependence, environmental issues and international relations. Offered in fall, spring.

INTL 201H: 3 s.h.

Hrs:Intr to Intrnatl Studies (G3)

Hrs:Intr to Intrnatl Studies

INTL 300: 3-12 s.h.

Co-Op Ed Experience in INTL

Co-Op Ed Experience in INTL

INTL 379: 3 s.h.

Experimental

Experimental Course

INTL 400: 3-12 s.h.

Co-Op Ed Experience in INTL

Co-Op Ed Experience in INTL

INTL 488: 3 s.h.

Senior Seminar

Research, discussion and analysis of current global issues. Prereq: C- or better in INTL 201, 75 total credits earned and 9 credits in International Studies.

INTL 488H: 3 s.h.

H:Senior Seminar

H:Senior Seminar

INTL 489: 1-4 s.h.

Honors Course

Honors Course

INTL 491: 1-6 s.h.

Topics in International Studies

Investigation of topics on economic, environmental or political global systems or in-depth comparative study of international issues, cultures or the arts. Offered annually.

INTL 491H: 3 s.h.

Hrs:Tpcs in Intrnatl Studies

Hrs:Tpcs in Intrnatl Studies

INTL 498: 1-4 s.h.

Independent Study

For further information, see the Special Academic Opportunities section.

INTL 499: 1-4 s.h.

Departmental Honors

Departmental Honors

INTL 500: 3-12 s.h.

Co-Op Ed Experience in Intl

Co-Op Ed Experience in Intl

International Studies Minor

International studies offers students a valuable perspective and useful skills for careers in government, international relations, foreign service, law, business, teaching, journalism, communications or for proceeding to higher degrees. For students working toward other degrees, including degrees in the sciences, mathematics or the technical disciplines, a minor

or a second major in international studies will provide a global frame of reference and preparation for future work with international colleagues.

International studies prepares students for success in a world made smaller by the steady increase of international contact in society, politics and business. The international studies major and minor emphasize comparative social, cultural, economic, environmental, historical and political systems worldwide. Comparative studies of music, literature, religion and education also are offered. Through these studies, students acquire knowledge and tools that enable them to analyze and understand the complex world in which we live.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in International Studies

Code	Title	Hours
INTL 201	Intro to International Studies	3
Senior Seminar		3
INTL 488	Senior Seminar	
INTL 488 Senior Seminar requires 75 credits and at least 9 credits in International Studies completed.		
AREA STUDIES - Choose 2 of the following:		12
Choose two AREAS and take 6 credits in each.		
1. COMPARATIVE SOCIETIES - See Appendix 1		
2. ECONOMIC INTERDEPENDENCE - See Appendix 2		
3. GLOBAL ENVIRONMENTAL ISSUES - See Appendix 3		
4. INTERNATIONAL RELATIONS - See Appendix 4		
Total Hours		18

Appendix 1. 1. COMPARATIVE SOCIETIES

Code	Title	Hours
undefined - Choose 2 of the following:		
ANTH 121	Cultural Anthropology	6
ANTH 325	Medical Anthropology	
ANTH 326	Anthropology of Religion	
ANTH 327	Urban Anthropology	
ANTH 336	Language & Communication	
ANTH 344	Gender, Race, and Class	
COMM 230	International Broadcasting	
COMM 317	Intercultural Communication	
EDFN 511	Comparative Education	
ENGL 232	World Literature 2	
ENGL 431	Comparative Literature	

GEOG 120	Human Geography
GEOG 141	World Regional Geography
GEOG 227	Cities
AENG 301	Technology and Humans
MATH 102	Math in Non-European Cultures
MUSI 368	International Music and Arts
PHIL 313	World Religions
SOCY 310	Sociology of Religion
SOCY 319	Social Stratification

Appendix 2. 2. ECONOMIC INTERDEPENDENCE

Code	Title	Hours
undefined - Choose 2 of the following:		
INTB 321A	Intro to Internationl Business	6
INTB 321B	Intro to Internationl Business	
FIN 344	International Finance	
MGMT 357	International Management	
MKTG 435	International Marketing	
ECON 203	Introduction to World Economy	
ECON 225	Comparative Economic Systems	
ECON 325	International Economics	
ECON 326	Economic Growth and Developmnt	
ECON 327	Women and Global Econ Develop	
GEOG 222	Economic Geography	

Appendix 3. 3. GLOBAL ENVIRONMENTAL ISSUES

Code	Title	Hours
undefined - Choose 2 of the following:		
BIOL 340	Prspctv in Environm Awareness	6
ESCI 104	The World Ocean	
ESCI 245	Environmental Meteorology	
ESCI 350	History of Meteorology	
GEOG 229	Sustainable Tourism	
GEOG 230	Physical Geography	
GEOG 305	Energy Sustainability	
GEOG 407	Glbl Envrnmtl Policy/Negotiatn	
SOCY 216	Human Population	

Appendix 4. 4. INTERNATIONAL RELATIONS

Code	Title	Hours
undefined - Choose 2 of the following:		
GEOG 226	Political Geography	6
GOVT 221	Introduction to Comparative Political Systems	
GOVT 251	Introduction to Global Politics	
GOVT 252	Global Crime and Justice	
GOVT 351	International Law	
GOVT 352	International Organizations	
GOVT 355	American Foreign Policy	
GOVT 356	Disasters and Our World	
GOVT 228	Democracy and Its Challenges	
GOVT 456	Global Humanitarianism	

HIST 102	Europe and World 1789-Present
HIST 276	Am Foreign Rltns, 1890 to Pres

International Studies, B.A.

International studies offers students a valuable perspective and useful skills for careers in government, international relations, foreign service, law, business, teaching, journalism, communications or for proceeding to higher degrees. For students working toward other degrees, including degrees in the sciences, mathematics or the technical disciplines, a minor or a second major in international studies will provide a global frame of reference and preparation for future work with international colleagues.

International studies prepares students for success in a world made smaller by the steady increase of international contact in society, politics and business. The international studies major and minor emphasize comparative social, cultural, economic, environmental, historical and political systems worldwide. Comparative studies of music, literature, religion and education also are offered. Through these studies, students acquire knowledge and tools that enable them to analyze and understand the complex world in which we live.

Major in International Studies

Code	Title	Hours
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REQUIRED INTERNATIONAL STUDIES COURSES

INTL 201	Intro to International Studies (C- or better)	3
INTL 488	Senior Seminar	3

Required Foreign Language Course - Choose 1 class from:

Any FREN course(s)

Any GERM course(s)

Any SPAN course(s)

Any FORL course(s)

Required Foreign Language Course, 200-level or higher - Choose 1 class from:

Any 2-level FREN course(s)

Any 3-level FREN course(s)

Any 4-level FREN course(s)

Any 5-level FREN course(s)

Any 2-level GERM course(s)

Any 3-level GERM course(s)

Any 4-level GERM course(s)

Any 5-level GERM course(s)

Any 2-level SPAN course(s)

Any 3-level SPAN course(s)

Any 4-level SPAN course(s)

Any 5-level SPAN course(s)

Any 2-level FORL course(s)

Any 3-level FORL course(s)

Any 4-level FORL course(s)

Any 5-level FORL course(s)

REQUIRED CORE COURSES

ANTH 121	Cultural Anthropology	3
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Introduction to World Economy or Comparative Economic Systems - Choose 1 of the following:

ECON 203 Introduction to World Economy

ECON 225 Comparative Economic Systems

GOVT 251	Introduction to Global Politics	3
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INTERNATIONAL STUDIES ELECTIVES

undefined - Choose 2 of the following: 12

Take six (6) credit hours from two (2) areas: Comparative Studies, Economic Interdependence, Global Environmental Issues, International Relations.

Comparative Studies - See Appendix 1

Economic Interdependence - See Appendix 2

Global Environmental Issues - See Appendix 3

International Relations - See Appendix 4

AREA STUDIES ELECTIVES

undefined - Choose 1 of the following: 9

Choose one of the following Geographical Areas and take three (3) courses from that area. No more than two (2) courses may be taken from any one department.

African Area Studies - See Appendix 5

The Americas Area Studies - See Appendix 6

Asian Area Studies - See Appendix 7

European Area Studies - See Appendix 8

INTL Electives

INTL courses not used to fulfill a requirement in the INTL major will show here and count in major GPA. Given the interdisciplinary nature of the International Studies major, courses from other departments that are not needed to fill a major requirement will be released to fulfill other degree requirements on your audit.

Total Hours 36

Appendix 1. Comparative Studies

Code	Title	Hours
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undefined - Choose 2 of the following: 6

ANTH 325 Medical Anthropology

ANTH 326 Anthropology of Religion

ANTH 327 Urban Anthropology

ANTH 336 Language & Communication

ANTH 344 Gender, Race, and Class

COMM 230 International Broadcasting

COMM 317 Intercultural Communication

EDFN 511 Comparative Education

ENGL 232 World Literature 2

ENGL 431 Comparative Literature

GEOG 120 Human Geography

GEOG 141 World Regional Geography

GEOG 227 Cities

AENG 301 Technology and Humans

MATH 102 Math in Non-European Cultures

MUSI 368 International Music and Arts

PHIL 313 World Religions

SOCY 319 Social Stratification

Appendix 2. Economic Interdependence

Code	Title	Hours
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undefined - Choose 2 of the following: 6

INTB 321A Intro to International Business

INTB 321B Intro to International Business

FIN 344	International Finance
MGMT 357	International Management
MKTG 435	International Marketing
ECON 225	Comparative Economic Systems
ECON 325	International Economics
ECON 326	Economic Growth and Developmnt
ECON 327	Women and Global Econ Develop
GEOG 222	Economic Geography

Appendix 3. Global Environmental Issues

Code	Title	Hours
undefined - Choose 2 of the following: 6		
BIOL 340	Prspctv in Environm Awareness	
ESCI 104	The World Ocean	
ESCI 245	Environmental Meteorology	
ESCI 350	History of Meteorology	
GEOG 229	Sustainable Tourism	
GEOG 230	Physical Geography	
GEOG 305	Energy Sustainability	
GEOG 407	Glbl Envrnmtl Policy/Negotiatn	
SOCY 216	Human Population	

Appendix 4. International Relations

Code	Title	Hours
undefined - Choose 2 of the following: 6		
GEOG 226	Political Geography	
GOVT 221	Introduction to Comparative Political Systems	
GOVT 252	Global Crime and Justice	
GOVT 351	International Law	
GOVT 352	International Organizations	
GOVT 355	American Foreign Policy	
GOVT 356	Disasters and Our World	
GOVT 228	Democracy and Its Challenges	
GOVT 456	Global Humanitarianism	
HIST 276	Am Foreign Rltns, 1890 to Pres	
GOVT 379	Experimental (Topics: Immigration Politics)	

Appendix 5. African Area Studies

Code	Title	Hours
undefined - Choose 3 of the following: 9		
GEOG 248	Geography of Africa	
HIST 281	African History	
HIST 285	Decolonizatn EU Emp in Africa	
HIST 388	Twentieth-Century Africa	
MUSI 369	Intro to West African Music and Dance	

Appendix 6. The Americas Area Studies

Code	Title	Hours
undefined - Choose 3 of the following: 9		
ANTH 222	American Indian	
GEOG 343	Latin America & the Caribbean	
GOVT 327	Canadian Government and Politics	
HIST 283	Colonial Latin America	

HIST 284	Modern Latin America
HUMN 380	Latino Issues of Identity
LATS 201	Introduction to Latino Studies
LATS 340	U.S. - Mexico Border Issues
SPAN 313	Survey of Span American Lit 1
SPAN 333	Spanish Am Civilization 1

Appendix 7. Asian Area Studies

Code	Title	Hours
undefined - Choose 3 of the following: 9		
GOVT 225	Modern China	
GOVT 323	Government and Politics of the Middle East	
GOVT 325	Modern Asia	
GOVT 455	US-Middle East Foreign Relations	
HIST 470	The Vietnam War	
PHIL 361	Asian Philosophy	

Appendix 8. European Area Studies

Code	Title	Hours
undefined - Choose 3 of the following: 9		
ANTH 223	People and Cultures Of Mediter	
GEOG 242	London	
GEOG 342	Europe	
GERM 312	Survey of German Lit 2	
GERM 332	German Civilization 2	
HIST 102	Europe and World 1789-Present	
HIST 222	Modern Britain	
HIST 224	Modern Germany	
HIST 242	Soviet Union	
HIST 340	Twentieth Century Europe	
HIST 342	Hitler and Nazism	
HIST 360	The Second World War	
HUMN 210	French Literature in English	
HUMN 220	German Literature in Transltn	
HUMN 280	Spanish Literature in English	

Latina(o) Studies

Latino studies is an 18-credit interdisciplinary minor that consists of courses from a wide variety of academic disciplines, including anthropology, sociology, education, geography, history, humanities, mathematics, music, philosophy and Spanish, as well as an introductory and senior-level course in Latino studies. The Latino studies minor will allow students to become conversant with the language, roots, culture, history and socioeconomic perspectives of the rapidly growing Latino population in the United States. Because the program is both multicultural and multidisciplinary, it promotes the holistic liberal arts approach to learning. Courses in the minor will emphasize Latino perspectives, the development of critical thinking as well as written and oral communication skills within this field of study and across other disciplines.

This program will be particularly effective when combined with majors that offer an organic relationship to Latino issues (such as business administration, government and political affairs, history, sociology, social work or education, to name a few). Successful completion of the Latino

studies minor will enable graduates to become effective employees, as they take their place in an increasingly diverse workplace.

the programs

- Latino/a Studies Minor (p. 131)

the faculty

Professor Kimberly Mahaffy, coordinator

the courses

LATS 179: 1-3 s.h.

Experimental

Experimental

LATS 201: 3 s.h.

Introduction to Latino Studies (D, G1)

An introductory course designed to study the history, politics, economics and culture of the major Latino groups in the United States: Mexicans, Puerto Ricans, Cubans, Dominicans and Central Americans.

LATS 300: 3-12 s.h.

Co-Op Ed Experience in LATS

Allows students to volunteer or work at a Latino/a serving organization.

LATS 325: 3 s.h.

Afro-Latino Cultural Experiences (W)

Critical examination of the complex diversity of experiences among U.S. Latinos, with a specific emphasis on Afro-Latino experiences. Afro-Latinos are Latinos with strong African phenotypic features and whose experiences as both "Black" and "Latino" mark them as distinct from both the larger African American and broader Latino communities, even though Afro-Latinos hold certain connections to both groups. Primary focus will be places on Afro-Latino historical and contemporary experiences, efforts to establish local, national, and transnational recognition, and Afro-Latino struggles against racism within the broader American society and from the larger Latino community.

LATS 340: 3 s.h.

U.S. - Mexico Border Issues (P)

This course provides a multi-disciplinary perspective on issues at the U.S. – Mexico border from the perspectives of sociology, anthropology, geography, art, and political affairs. Women's non-governmental organizations that serve the border region are also discussed.

LATS 379: 1-3 s.h.

Experimental

Experimental

LATS 488: 3 s.h.

Latina/o Studies Senior Seminar (W)

Upper-level interdisciplinary study of Latino cultures through readings, attendance at Latinx cultural events, and independent student research. Prerequisites: LATS 201 and ENGL 110.

LATS 491: 3 s.h.

Topics in Latina/o Studies

Investigation of topics related to the cultures, contributions and experiences of Latinas/os living in the United States. Pre/co-requisite of LATS 201.

LATS 498: 1-3 s.h.

Ind Study:

Allows students to pursue an academic area of interest not available through an established course under the guidance and supervision of a faculty member. For further information, see the Special Academic Opportunities section of the catalog, and consult with the director of Latino studies or your adviser.

Latino/a Studies Minor

The purpose of the Latina/o Studies Minor is to teach undergraduate students about Latina/o experiences, cultures, and contributions to the United States. The 18 credit minor offers courses from a variety of disciplines. Spanish fluency is not required.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Latino Studies

Code	Title	Hours
LATS 201	Introduction to Latino Studies	3
Internship or Senior Seminar or Independent Study - Choose 1 of the 3-12 following:		
LATS 300	Co-Op Ed Experience in LATS	
LATS 488	Latina/o Studies Senior Seminar	
LATS 498	Ind Study:	
Race, Culture and Ethnicity Courses - Choose 3 of the following:		
ANTH 336	Language & Communication	9
ANTH 344	Gender, Race, and Class	
GEOG 343	Latin America & the Caribbean	
GOVT 361	Politics of Race and Ethnicity	
HUMN 380	Latino Issues of Identity	
LATS 325	Afro-Latino Cultural Experiences	
LATS 340	U.S. - Mexico Border Issues	
LATS 491	Topics in Latina/o Studies	
SPAN 303	Spanish for Heritage Speakers	
SPAN 371	Spanish in the US	
Elective Course - Choose 1 of the following:		
COMM 317	Intercultural Communication	3
EDUC 433	Gender and Race Issues	
HIST 283	Colonial Latin America	
HIST 284	Modern Latin America	
MATH 102	Math in Non-European Cultures	
PHIL 407	Political and Social Philosophy	

PSYC 318	Psychology of Racism
SOCY 216	Human Population
SOCY 308	Soc of Afr-Amer and Lat Educ
SOWK 350	Encounters in Human Diversity
SPAN 201	Intermediate Spanish 1
SPAN 202	Intermediate Spanish 2
SPAN 361	Oral Spanish 1

Total Hours **18-27**

Students are encouraged to carefully plan their Latino studies curriculum and then discuss their plans with their minor and major advisors.

Military Science

Military Sciences offers coursework from a number of departments including the Departments of Military Science, History, Government and Geography. This path allows the student to pursue a diverse program that incorporates military history, ethics, public administration and the use of the military as an instrument of educational enhancement. While the Military Science classes are taught through a military lens, the components of adaptability, teamwork, comprehensive fitness, leadership and critical thinking are interdisciplinary and applicable regardless of a student's chosen future career paths.

THE PROGRAMS

- Military Science Minor (p. 133)

THE FACULTY

Frankum Ronald; Professor
College of Arts, Humanities and Social Sciences
B.A., Syracuse University, 1988, M.A., University of Kentucky, 1991; Ph.D., Syracuse University, 1997

The Courses

MILS 101: 1 s.h.

Intro to Military Science 1

An introduction to the fundamental components of service as an officer in the United States Army. Initial lessons form the building blocks of progressive lessons in values, fitness, leadership and officership. By means of both written and oral presentations regarding the history of military art, battle history, technical studies and the relationship of the armed forces with society, students will be encouraged to develop a habit of critical reflection. In addition to developing a foundation of military officership and leadership, students will receive practical instruction in the application of military art and basic soldier skills. Meets one hour per week plus a weekly 90-minute leadership lab. MILS 101 in fall and MILS 102 in spring.

MILS 102: 1 s.h.

Intro to Military Science 2

An introduction to the fundamental components of service as an officer in the United States Army. Initial lessons form the building blocks of progressive lessons in values, fitness, leadership and officership. By means of both written and oral presentations regarding the history of military art, battle history, technical studies and the relationship of the armed forces with society, students will be encouraged to develop a habit of critical reflection. In addition to developing a foundation of military officership and leadership, students will receive practical instruction in the application of military art and basic soldier skills. Meets one hour per week plus a weekly 90-minute leadership lab. MILS 101 in fall and MILS 102 in spring.

MILS 179: 3 s.h.

Experimental

Experimental

MILS 210: 2 s.h.

Self and Team Development

A continuation of the fundamentals introduced the previous year by focusing on leadership theory and decision making. "Life skills" lessons during this year include problem solving, critical thinking, leadership theory, followership, group interaction, goal setting and feedback mechanisms. The use of practical exercise is significantly increased over previous semesters, as cadets are increasingly required to apply communication and leadership concepts. Meets two hours per week plus a weekly 90-minute leadership lab. MILS 210 in fall and MILS 211 in spring.

MILS 211: 2 s.h.

Military Leadership

A continuation of the fundamentals introduced the previous year by focusing on leadership theory and decision making. "Life skills" lessons during this year include problem solving, critical thinking, leadership theory, followership, group interaction, goal setting and feedback mechanisms. The use of practical exercise is significantly increased over previous semesters, as cadets are increasingly required to apply communication and leadership concepts. Meets two hours per week plus a weekly 90-minute leadership lab. MILS 210 in fall and MILS 211 in spring.

MILS 279: 3 s.h.

Experimental

Experimental

MILS 301: 3 s.h.

Management and Leadership

Advanced instruction in topics introduced during the basic course. Emphasis on leadership. Situations require direct interaction with other cadets and test the student's ability to achieve set goals and to get others to do the same. Students master basic tactical skills of the small unit leader. Principles and techniques of effective leadership, methods of developing and improving managerial abilities and leadership qualities, and a basic understanding of interpersonal interactions. Use is made of recent developments in the administrative and behavioral sciences to analyze the individual, group and situational aspects of leadership and the management of resources. Participation in operations and basic tactics to demonstrate leadership problem solving and to develop leadership skills. Meets two hours per week plus a weekly 90-minute leadership lab. Prereq: Open only to advanced-course cadets. MILS 301 in fall and MILS 302 in spring.

MILS 302: 3 s.h.

Military Tactics

Advanced instruction in topics introduced during the basic course. Emphasis on leadership. Situations require direct interaction with other cadets and test the student’s ability to achieve set goals and to get others to do the same. Students master basic tactical skills of the small unit leader. Principles and techniques of effective leadership, methods of developing and improving managerial abilities and leadership qualities, and a basic understanding of interpersonal interactions. Use is made of recent developments in the administrative and behavioral sciences to analyze the individual, group and situational aspects of leadership and the management of resources. Participation in operations and basic tactics to demonstrate leadership problem solving and to develop leadership skills. Meets two hours per week plus a weekly 90-minute leadership lab. Prereq: Open only to advanced-course cadets. MILS 301 in fall and MILS 302 in spring.

MILS 379: 3 s.h.

Experimental

Experimental

MILS 401: 3 s.h.

Contemporary Military Issues 1

Emphasis is placed on developing planning and decision-making capabilities in the areas of military operations, logistics and administration. Concepts of organization theory and the principles of management and management and leadership relationships are investigated as they apply to the general theory and practice of the management functions of planning, organizing, staffing, direction, coordination, control, innovation and representation. Meets two hours per week plus a weekly 90-minute leadership lab. Prereq: Open only to advanced course cadets. MILS 401 in fall and MILS 402 in spring.

MILS 402: 3 s.h.

Contemporary Military Issues 2

Emphasis is placed on developing planning and decision-making capabilities in the areas of military operations, logistics and administration. Concepts of organization theory and the principles of management and management and leadership relationships are investigated as they apply to the general theory and practice of the management functions of planning, organizing, staffing, direction, coordination, control, innovation and representation. Meets two hours per week plus a weekly 90-minute leadership lab. Prereq: Open only to advanced course cadets. MILS 401 in fall and MILS 402 in spring.

MILS 479: 3 s.h.

Experimental

Experimental

Military Science Minor

Minor in Military Sciences offers coursework from a number of departments including the Departments of Military Science, History, Government and Geography. This path allows the student to pursue a diverse program that incorporates military history, ethics, public administration and the use of the military as an instrument of educational enhancement. While the Military Science classes are taught through a military lens, the components of adaptability, teamwork, comprehensive fitness, leadership and critical thinking are interdisciplinary and applicable regardless of a student’s chosen future career paths.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.

2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Military Science

Code	Title	Hours
MILITARY SCIENCE CORE REQUIRED COURSES		
MILS 101	Intro to Military Science 1	1
MILS 102	Intro to Military Science 2	1
MILS 210	Self and Team Development	2
MILS 211	Military Leadership	2
MILITARY SCIENCE CORE ELECTIVES		
A minimum of 1 elective must be from History and 2 classes must be at the 300 level or higher		
Electives - Minimum 1 History and 2 300/400 Level - Choose 12 hours from: ¹		
GEOG 226	Political Geography	
GEOG 281	Maps and GIS	
GEOG 295	GIS I: Vector Data Analysis	
GOVT 251	Introduction to Global Politics	
GOVT 355	American Foreign Policy	
GOVT 455	US-Middle East Foreign Relations	
HIST 285	Decolonizatn EU Emp in Africa	
HIST 286	War, Revolution and Terrorism	
HIST 314	The Crusades	
HIST 355	Civil War and Reconstruction	
HIST 359	First World War	
HIST 360	The Second World War	
HIST 470	The Vietnam War	
MILS 301	Management and Leadership	
MILS 302	Military Tactics	
MILS 401	Contemporary Military Issues 1	
MILS 402	Contemporary Military Issues 2	
Total Hours		18

General Guidelines for the Minor

- Each minor shall consist of a minimum of 18 s.h. of history courses.
- At least two courses must be taken in U.S. history.
- At least two courses must be taken in world history.
- No more than three 100-level courses may be taken.
- At least two courses at the 300-or-above level must be taken.

Philosophy

Philosophical study presents an occasion to develop critical life skills that prepare students for a wide horizon of career choices and professional opportunities as they learn to address and think through a

complex world of both longstanding and emergent issues. Our programs are designed to acquaint and familiarize students with a pluralistic range of ideas, problems, and thinkers. Course offerings include Dr. Chuck Ward's "Knowledge, Reality and Science Fiction," Dr. Jen Miller's "Love & Sexuality," and Dr. Kaiser Ortiz's "Global Ethics & Social Justice." The formal study of philosophy through any one of our four programs provides students with experiences, skills, and resources that become pathways to competitive law school admissions, graduate schools, and other areas of study and practice after college. Philosophy courses are open to all students.

the programs

- Certificate in Ethics and Society (p. 136)
- Ethics and Society Minor (p. 136)
- Philosophy Minor (p. 137)
- Philosophy, B.A. (p. 137)

the faculty

Kaiser Ortiz, John; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., University of Texas-Pan American, 1999; M.A., University of Oregon, 2005; Ph.D., Ibid., 2007

Miller, Jennifer; Assistant Professor
College of Arts, Humanities and Social Sciences
B.S., Portland State University, 1986; Ph.D., University of Oregon, 1994

Ward, Charles; Professor
College of Arts, Humanities and Social Sciences
B.S., California State University at Long Beach, 1985; m>A., Ibid., 1989; M.A., Johns Hopkins University, 1992; Ph.D., Ibid., 2001

the courses

PHIL 100: 3 s.h.

Introduction to Philosophy (G1)

A beginning study of some of the major philosophical issues and thinkers.

PHIL 120: 3 s.h.

Introduction to Ethics (G1)

Examines major philosophical approaches to ethical thinking and moral judgment, offering tools for a clearer understanding of ethical decision-making in our daily lives. Consideration of a range of perennial and contemporary ethical and social problems.

PHIL 179: 3 s.h.

Experimental

Experimental

PHIL 201: 3 s.h.

Philosophical Psychology (G1)

Intensive study of selected problems, figures or movements in psychology with emphasis on the philosophical foundations or implications. Offered annually.

PHIL 202: 3 s.h.

Love and Sexuality (G1)

Various viewpoints regarding both the nature of love and of human sexuality. Offered annually.

PHIL 202H: 3 s.h.

Hon: Love & Sexuality (G1)

PHIL 211: 3 s.h.

Introduction to Logic (G1)

Principles of correct thinking; deductive inference; inductive inference; use and misuse of language in reasoning.

PHIL 220: 3 s.h.

Existentialism (G1)

Study of the works of important existentialist thinkers including Kierkegaard, Dostoyevsky, Nietzsche, Sartre, Camus, Beauvoir and others. Issues addressed include human freedom, the problem of life's meaning, the relation between the individual and society, the grounds of human relations, Existentialism and the problem of race, Existentialism and Feminist thought, and others. Discussion of existentialist themes in literary, cinematic and other artistic endeavors.

PHIL 260: 3 s.h.

Food, Ethics & Society (G1)

Examines the ethical problems society faces in regards to food production and consumption practices, offering tools for balancing the nutritional, public health, and normative needs of communities and individuals.

PHIL 279: 3 s.h.

Experimental

Experimental

PHIL 280: 3 s.h.

Thanatopsis: Viewing Death (G1)

Various ways people have confronted death and have sought to understand it. Offered periodically.

PHIL 281: 3 s.h.

Bus. & Prof. Ethics (G1)

Examines basic ethical concepts, principles and theories, as well as applications of them to a range of issues in business and professional contexts. Students will explore case studies in a range of organizational and social settings; standards of professional ethics in various disciplines; and best practices relating to ethical conduct in various contexts. Prerequisite: ENG 110.

PHIL 285: 3 s.h.

Biomedical Ethics (G1)

A study of biomedical moral and ethical problems. Offered annually.

PHIL 291: 3 s.h.

Black, Latin & Native Am Phil. (D)

Examines patterns of moral origins.

PHIL 300: 3-12 s.h.

Co-Op Ed Experience in Phil

Co-Op Ed Experience in Phil

PHIL 312: 3 s.h.

Mathematical Logic (G1)

First-order predicate calculus with identity and functional symbols. Offered annually. Prereq: PHIL 211 or some background in mathematics.

PHIL 313: 3 s.h.

World Religions (G1)

A study of the contents of certain living world religions. Offered periodically.

PHIL 313H: 3 s.h.

HNRS: World Religions (G1)

PHIL 314: 3 s.h.**Philosophy of Science (G1, W)**

The structure of scientific explanation; the logic character of scientific laws and theories; convention and description in science; probability and induction; the scientific method in the behavioral sciences. Offered periodically. Prereq: ENGL 110.

PHIL 321: 3 s.h.**Ancient Philosophy (G1, W)**

The pre-Socratics, Socrates, Plato and Aristotle. Offered in fall. Prereq: ENGL 110.

PHIL 321H: 3 s.h.**Hnrs:Ancient Philosophy (G1, W)**

Hnrs:Ancient Philosophy

PHIL 322: 3 s.h.**Modern Philosophy (G1, W)**

Descartes, Leibniz, Spinoza, Locke, Berkeley, Hume and Kant. Offered in spring. Prereq: ENGL 110.

PHIL 322H: 3 s.h.**Hnrs:Modern Philosophy (G1, W)**

Hnrs:Modern Philosophy

PHIL 327: 3 s.h.**Philosophy in Film (G1)**

Investigation of philosophical themes, problems and questions raised in film. The medium of film provides a rich and lively context to explore traditional and current issues pertinent to the discipline of philosophy. Offered annually.

PHIL 327H: 3 s.h.**HNRS:Philosophy in Film (G1)****PHIL 328: 3 s.h.****Philosophy Classics (G1, W)**

One or more major works or of a major philosopher or philosophers. May be taken any number of times for credit. Offered annually. Prereq: ENGL 110.

PHIL 328H: 3 s.h.**Hnrs:Philosophical Classics (G1, W)**

Hnrs:Philosophical Classics

PHIL 331: 3 s.h.**American Philosophy (G1)**

A study of philosophy in America. Offered periodically.

PHIL 341: 3 s.h.**Philosophy of Language (G1, W)**

Philosophical analyses of language and meaning across multiple philosophical traditions (e.g. Analytic Philosophy; Continental Philosophy; American Pragmatism; Feminism). Prereq: ENGL 110

PHIL 345: 3 s.h.**Humanity and Environment (P)**

Critical examination of the ways in which our understanding of the natural world affects our relationship with it as well as our concepts of human nature and society. Emphasis will be on how knowledge gained through the biological sciences (historically and presently) changes the way we think about ourselves and our place in the natural world. Specific topics include the social impact of evolutionary theory, sociobiology and evolutionary psychology, genetic engineering and aspects of environmental philosophy. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

PHIL 347: 3 s.h.**Phil of City, Tech & Publ Hlth (G1)**

Examines major philosophical approaches, debates, and intersections between philosophy of the city, philosophy of technology, and public health. Offers tools for a clearer understanding of the competing tensions of city life, technological advancement, and problems of public health that affect the quality of our daily lives. Consideration of a range of perennial and contemporary social, technological, and public health problems.

PHIL 351: 3 s.h.**Contemporary European Philosophy (G1)**

A study of the European philosophical traditions of hermeneutics, phenomenology, existentialism and structuralism in their historical context, their relations to contemporary culture, particularly to psychology, literature, theology and political action. Offered periodically.

PHIL 361: 3 s.h.**Asian Philosophy (G1)**

A study of significant ideas in the philosophical thought of Asia. Offered periodically.

PHIL 373: 3 s.h.**Knowledge, Reality & Sci Fict (G1)**

Examines philosophical theories of reality (metaphysics) and knowledge (epistemology). Uses science fiction as a vehicle for exploring these ideas. Offered periodically.

PHIL 379: 3 s.h.**Experimental**

Experimental

PHIL 381: 3 s.h.**Global Ethics & Social Justice (G1, W)**

A philosophical examination of ethical issues emergent through globalization. Topics addressed may include wealth and resource distribution in a global economy; environmental crises, disaster, and government responses to them; social justice and social protest movements; philosophies of non-violence; peace studies and global conflict resolution.

PHIL 382: 3 s.h.**Philosophy of Religion (G1)**

An examination of the justifiability of religion and of the nature of the religious experience, especially religious language. Offered infrequently.

PHIL 383: 3 s.h.**Philosophy of Art (G1, W)**

The history of the philosophy of art; an analysis of the aesthetic experience, the aesthetic object and the creative act. Emphasis will be placed on an analysis of the concepts employed in the criticism of literature, painting and music. Offered periodically. Prereq: ENGL 110.

PHIL 391: 3 s.h.**Gender, Utopia, Human Nature (P)**

Utopian thought, from classical philosophy to contemporary science fiction. Shows how different cultures have portrayed gender and gender roles as fixed by human nature or as manifestations of alterable social institutions. Prereq: COMM 100, ENGL 110, junior status and two courses in one area of the social sciences or two courses in philosophy. Offered periodically.

PHIL 400: 3-12 s.h.**Co-Op Ed Experience in Phil**

Co-Op Ed Experience in Phil

PHIL 401: 3 s.h.**Philosophy and Neuroscience (G1)**

An examination of the inter-relation of philosophy and neuroscience. Our growing knowledge of the brain and nervous system has profound implications for a range of traditional philosophical issues including the nature of consciousness, personal identity, free will, action-theory and ethics/decision-making. Reciprocally, philosophy provides critical and interpretive tools for better understanding the methods and significance of findings in neuroscience. Topics covered in this course include: perception, the self and self-awareness, neuroscience of free will, neuroethics, and the cognitive neuroscience of language.

PHIL 407: 3 s.h.**Political and Social Philosophy (G1)**

An examination of political and social philosophies with a view to discovering their relation to present political and social realities. Offered periodically.

PHIL 460: 3 s.h.**Philosophy of Law & Human Right (G1)**

Examines theories and practices related to philosophy of law, including topics in legal studies/legal theory, legal reasoning and deliberation, jurisprudence, and human rights.

PHIL 471: 3 s.h.**Advanced Seminar in Philosophy (G1, W)**

Explores the core philosophical issues concerning theories of truth, knowledge and objective values. Emphasizes the development of the skills of critical reading and writing as well as performing philosophical research. May be taken any number of times for credit. Offered annually. Prereq: ENGL 110 and 3 credits in PHIL at the 200 level or higher or permission of instructor.

PHIL 479: 3 s.h.**Experimental**

Experimental

PHIL 498: 1-6 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

PHIL 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

PHIL 500: 3-12 s.h.**Co-Op Ed Exp In Phil**

Co-Op Ed Exp In Phil

Certificate in Ethics and Society

The Ethics and Society Certificate program will provide students with the opportunity to engage in critical study of the philosophical underpinnings of various ethical theories and the application of those principles to a range of contexts. The curriculum for the program includes, along with a general introductory course, classes in Biomedical Ethics, Business and Professional Ethics, Environmental Philosophy/Ethics, Food Ethics, Global Ethics and Social Justice, and others. Through such courses students will develop expertise and skills in critical ethical reasoning in application to diverse contexts. Think about it and you will see the value for yourself: Employers nowadays both want and need to hire college students who have taken courses in philosophy and ethics. The work of professionals today demands it.

Major in Ethics and Society

Code	Title	Hours
PHIL 120	Introduction to Ethics	3
Ethics Electives - Choose 3 of the following:		9
PHIL 260	Food, Ethics & Society	
PHIL 281	Bus. & Prof. Ethics	
PHIL 285	Biomedical Ethics	
PHIL 345	Humanity and Environment	
PHIL 381	Global Ethics & Social Justice	
Elective - Choose 1 of the following:		3-12
PHIL 202	Love and Sexuality	
PHIL 300	Co-Op Ed Experience in Phil	
PHIL 313	World Religions	
PHIL 321	Ancient Philosophy	
PHIL 322	Modern Philosophy	
PHIL 328	Philosophy Classics	
PHIL 407	Political and Social Philosophy	
PHIL 460	Philosophy of Law & Human Right	
PHIL 471	Advanced Seminar in Philosophy	
SOCY 335	Ethics in Criminal Justice	
Total Hours		15-24

Ethics and Society Minor

The Minor in Ethics and Society focuses on a range of topics and problems, including Biomedical Ethics, Business and Professional Ethics, Environmental Ethics, Food Ethics, Global Justice, Human Rights, and others. Today's rapidly changing social and technological circumstances generate increased need for citizens and professionals to better understand the principles and applications of ethics, and to be able to critically analyze the implications of these rapid developments. The purpose of the program is to provide students and community professionals with the opportunity to supplement their disciplinary and technical training by advancing their moral reasoning skills.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Ethics and Society

Code	Title	Hours
PHIL 120	Introduction to Ethics	3
Ethics Electives - Choose 3 of the following:		9
PHIL 260	Food, Ethics & Society	
PHIL 281	Bus. & Prof. Ethics	

PHIL 285	Biomedical Ethics	
PHIL 345	Humanity and Environment	
PHIL 381	Global Ethics & Social Justice	
Electives - Choose 2 of the following:		6-15
PHIL 202	Love and Sexuality	
PHIL 300	Co-Op Ed Experience in Phil	
PHIL 313	World Religions	
PHIL 321	Ancient Philosophy	
PHIL 322	Modern Philosophy	
PHIL 328	Philosophy Classics	
PHIL 407	Political and Social Philosophy	
PHIL 460	Philosophy of Law & Humn Right	
PHIL 471	Advanced Seminar in Philosophy	
SOCY 335	Ethics in Criminal Justice	
Total Hours		18-27

Philosophy Minor

The Philosophy minor at Millersville University provides students with a grounding in the history of philosophy as well as training in philosophical analysis and writing. Such training is one of the best ways to develop critical thinking and communicative skills applicable to many professional fields.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Philosophy, B.A.

A Philosophy degree from Millersville University will provide students with a strong grounding in the history of philosophy as well as training in philosophical analysis and writing. Such training is one of the best ways to develop critical thinking and communicative skills applicable to many professional fields. While some philosophy majors go on to graduate studies in philosophy itself, the major is also excellent preparation for a wide variety of life and career paths, including law, theology, business, cognitive science, literary professions, politics and public advocacy.

Major in Philosophy, BA

Code	Title	Hours
CRITICAL FOUNDATIONS		
Introduction to Philosophy or Introduction to Ethics - Choose 1 of the following:		3
PHIL 100	Introduction to Philosophy	
PHIL 120	Introduction to Ethics	

Introduction to Logic or Mathematical Logic - Choose 1 of the following:

PHIL 211	Introduction to Logic	
PHIL 312	Mathematical Logic	
PHIL 321	Ancient Philosophy	3

ETHICS

undefined - Choose 6 hours from:

PHIL 120	Introduction to Ethics	
PHIL 202	Love and Sexuality	
PHIL 260	Food, Ethics & Society	
PHIL 280	Thanatopsis:Viewing Death	
PHIL 281	Bus. & Prof. Ethics	
PHIL 381	Global Ethics & Social Justice	
PHIL 460	Philosophy of Law & Humn Right	

NATURE, SOCIETY GLOBAL THOUGHT

undefined - Choose 6 hours from:

PHIL 201	Philosophical Psychology	
PHIL 299		
PHIL 313	World Religions	
PHIL 314	Philosophy of Science	
PHIL 322	Modern Philosophy	
PHIL 345	Humanity and Environment	
PHIL 361	Asian Philosophy	
PHIL 373	Knowledge, Reality & Sci Fict	
PHIL 391	Gender, Utopia, Human Nature	
PHIL 401	Philosophy and Neuroscience	
PHIL 407	Political and Social Philosophy	
PHIL 444		

ELECTIVES

Choose 9 credits of Philosophy electives in consultation with your adviser. Any course offered by the department, included courses listed in the categories above not used to satisfy those requirements, can be applied here. Click here to search the schedule by subject to find available PHIL courses.

A minimum of 15 credits in the major must be taken at the 300 or 400 level.

Total Hours **30**

Social Studies

Millersville University's Secondary Education program produces passionate 7th to 12th grade teachers who are equipped to share their knowledge of their content area.

The BSE in Social Studies can be advised out of the History, Government, Economics or Geography departments.

the programs

- Social Studies, B.S.Ed. (p. 158)

the faculty

Criminology, Sociology and Anthropology

Arnold, Marlene; Professor

College of Arts, Humanities and Social Sciences

B.A., Macalester College, 1974; Ph.D., University of Pennsylvania, 1985

Garcia, Justin; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., Millersville University, 2001; M.A., Temple University, 2008; Ph.D.,
Ibid., 2011

Jerstad, Stephanie; Assistant Professor
College of Arts, Humanities and Social Sciences
A.A.S., Harrison College, 2012; B.S., Ibid., 2014; M.S., University of
Cincinnati, 2016; Ph.D., Southern Illinois University Carbondale, 2021

Mahaffy, Kimberly; Professor
College of Arts, Humanities and Social Sciences
B.S., Gordon College, 1987; M.S., Northeastern University, 1993; M.A.,
University of New Hampshire, 1995

Orr, Ryan; Associate Professor
College of Arts, Humanities and Social Sciences
B.G.S., University of Kansas, 2001; M.A., DePaul University, 2004; Ph.D.,
Iowa State University, 2009

Porter, Aaron; Assistant Professor
College of Arts, Humanities and Social Sciences
B.A., Bloomsburg University, 1985; M.A., University of Pennsylvania, 1987;
Ph.D., Ibid., 1993

Schmitt, Frederika; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., Bucknell University, 1990; M.A., University of Delaware, 1994; Ph.D.,
Ibid., 1998

Smith, Carrie; Associate Professor
College of Arts, Humanities and Social Sciences
B.S., University of California, 1996; M.A., Vanderbilt University, 1998;
Ph.D., Ibid., 2004

Trussell, Timothy; Associate Professor
College of Arts, Humanities and Social Sciences
B.S., Oregon State University, 1991; M.S., Ibid., 1997; Ph.D., Texas A&M
University, 2004

Economics

Baker, Ronald; Associate Professor
College of Arts, Humanities and Social Sciences
B.S., St. Vincent College, 1981; M.A., Indiana University, 2000; Ph.D., Ibid.,
2005

Gumpper, Michael; Professor
College of Arts, Humanities and Social Sciences
B.A., SUNY at Geneseo, 1987; M.A., University of Kentucky, 1993; Ph.D.,
Ibid., 1998

Madden, Kirsten; Associate Professor
College of Arts, Humanities and Social Sciences
B.A. University of Alabama at Tuscaloosa, 1986; Ph.D., University of North
Carolina- Chapel Hill, 1995

McPherson, Sandra; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., Bemidji State University, 1991; M.A., Indiana University, 1993; Ph.D.,
Ibid., 1998

Smith, Kenneth; Associate Professor
College of Arts, Humanities and Social Sciences

B.S., University of Minnesota, 1986; M.S., University of Wisconsin-
Madison, 1989; Ph.D., Ibid., 1993

Suliman, Osman; Professor
College of Arts, Humanities and Social Sciences
B.S., University of Khartoum (Sudan), 1977; M.A., Indiana University, 1979;
Ph.D., Ibid., 1984

Geography

Cuthbert, Angela; Professor
College of Science and Technology
B.E.S., University of Waterloo (Canada), 1995; M.E.S., Ibid., 1996; Ph.D.,
McMaster University (Canada), 2001

Frost, Ethan; Assistant Professor
College of Science and Technology
B.A., Clark University, 2002; M.S., University of Delaware, 2006; Ph.D., Ibid.,
2011

Geiger, Charles; Associate Professor
College of Science and Technology
B.S., Edinboro University, 1976; M.A., Kent State University, 1978; Ph.D.,
University of Toronto (Ontario), 1984

Kelly, Jessica; Associate Professor
College of Science and Technology
B.A., Boston University, 2003; M.A., Ibid., 2003; Ph.D., Rutgers University,
2009

Schreiber, Kathleen; Professor
College of Science and Technology
B.A., University of Delaware, 1983; M.S., Ibid., 1990; Ph.D., Ibid., 1996

Government, Policy, and Law

Bagchi, Nivedita; Professor
College of Arts, Humanities and Social Sciences
B.A., Converse College, 2001; M.A., University of Virginia, 2003; Ph.D.,
Ibid., 2009

Bookmiller, Robert; Professor
College of Arts, Humanities and Social Sciences
B.A., Indiana University of Pennsylvania, 1985; M.A., University of Virginia,
1989; Ph.D., Ibid., 1992

Bookmiller, Kirsten; Professor
College of Arts, Humanities and Social Sciences
B.A., The Pennsylvania State University, 1986; M.A., University of Virginia,
1988; Ph.D., Ibid., 1992

Glenn, Richard; Professor
College of Arts, Humanities and Social Sciences
B.A., Carson-Newman College, 1990; M.A., University of Tennessee, 1991;
Ph.D., Ibid., 1995

Lawrence, Adam; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., Virginia Polytechnic Institute and State University, 1995; M.A.,
University of Akron, 1997; Ph.D., University of Pittsburgh, 2004

Owen, David; Associate Professor
College of Arts, Humanities and Social Sciences
B.S., University of Maryland, 1997; M.S., Troy University, 1998; M.S., Ibid.,
2005; Ph.D., Southern Illinois University, 2011

History

Davis, Robyn; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Columbia University, 1993; M.A., University of Oklahoma, 2001; Ph.D., Ibid., 2009

Frankum, Ronald; Professor

College of Arts, Humanities and Social Sciences

B.A., Syracuse University, 1988, M.A., University of Kentucky, 1991; Ph.D., Syracuse University, 1997

Kevorkian, Tanya; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Mount Holyoke College, 1987; M.A., Johns Hopkins University, 1993; Ph.D., Ibid., 1997

Khiterer, Victoria; Professor

College of Arts, Humanities and Social Sciences

B.S., Kiev State Pedagogical Institute (Ukraine), 1992; M.A., Russian State University for Humanities, 1996; Ph.D., Ibid., 1996; Brandeis University, 2008

Maxwell, Clarence; Assistant Professor

College of Arts, Humanities and Social Sciences

B.A., St. Leo University (United Kingdom), 1985; B. A., University of Keele (United Kingdom), 1990; M.A., University of Hull (United Kingdom), 1995; Ph.D., University of Warwick (United Kingdom), 1999

Onek, Curthberth; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Makerere University (Uganda), 1985/ M.A., University of Toronto (Canada), 1991; M.S., York University (Toronto), 1997; M.A., The Royal Military College of Canada, 2005; Ph.D., University of Connecticut, 2009

Shelor, Erin; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Furman University, 1992; M.A., East Tennessee State University, 1996; Ph.D., University of Kentucky, 2003

Sommar, Mary; Assistant Professor

College of Arts, Humanities and Social Sciences

B.A., Temple University, 1975; M.Div., Yale University, 1990; Ph.D., Syracuse University, 1998

Psychology

Baker, Jason; Associate Professor

College of Education and Human Services

B.S., Juniata College, 1999; M.Ed., The Pennsylvania State University, 2002; Ph.D., Regent University, 2008

Banna, Kelly; Associate Professor

College of Education and Human Services

B.S., James Madison University, 1999; M.S., Auburn University, 2005; Ph.D., Ibid., 2007

Behun, Richard Joseph; Associate Professor

College of Education and Human Services

B.A., California University of Pennsylvania, 2005; M.S., The University of Pittsburgh School of Law, 2007; M.S.Ed., Duquesne University (School Counseling), 2008; M.S.Ed., Ibid. (School Administration), 2013; Ph.D., Ibid., 2013

Bland, Andrew; Associate Professor

College of Education and Human Services

B.S., University of Georgia, 2000; M.A., University of West Georgia, 2003; Ph.D., Indiana State University, 2013

Cook, Shaun; Associate Professor

College of Education and Human Services

B.S., Bridgewater State College, 1996; M.A., Brandeis University, 1999; Ph.D., University of Arizona, 2006

Gallagher, Shawn; Professor

College of Education and Human Services

B.S., The Pennsylvania State University, 1990; M.A., University of Delaware, 1999; Ph.D., Ibid., 2002

Garner, Nadine; Associate Professor

College of Education and Human Services

B.M., Westminster Choir College, 1991; M.S., Shippensburg University, 1992; M.Ed., Ibid., 1994; Ed.D., Duquesne University, 2000

Grady, Jessica; Associate Professor

College of Education and Human Services

B.S., Lebanon Valley College, 2006; M.S., West Virginia University, 2008; Ph.D., Ibid., 2011

Kaiser, Lauren; Associate Professor

College of Education and Human Services

B.S., University of Maryland, 1997; M.A., Ibid., 2003 and 2004; Ph.D., Ibid., 2007

MacIntyre, Rachel; Assistant Professor

College of Education and Human Services

B.S., Bucknell University, 2013; M.S., Old Dominion University, 2017; Ph.D., Ibid., Eastern Virginia Medical School, and Norfolk State University, 2021

Rush, Karena; Professor

College of Education and Human Services

A.B., Bryn Mawr College, 1991; Ed. M., Harvard University, 1994; M.A., Louisiana State University, 1997; Ph.D., Ibid., 2000

Thyrum, Elizabeth; Associate Professor

College of Education and Human Services

B.A., Millersville University, 1986; M.S., Rutgers University, 1989; Ph.D., Ibid., 1992

Vredenburg, Debra; Associate Professor

College of Education and Human Services

B.A., Slippery Rock University, 1990; M.A., Ibid., 1992; Ph.D., Ohio University, 1998

the courses

ANTH 121: 3 s.h.

Cultural Anthropology (G3)

Introduces basic concepts and topics: culture, fieldwork, communication, sex roles, social organization, politics, economics, belief systems, culture change and applied anthropology.

ANTH 121H: 3 s.h.

Hnrs:Cultural Anthropology (G3)

ANTH 122: 3 s.h.

Physical Anthropology (G3)

The anthropological study of human evolution: paleoanthropology, primatology and human population genetics, and the study of human variation— the ways humans adapt biologically to their environments. Offered annually.

ANTH 123: 3 s.h.**Introduction To Archeology (G3)**

Introduces methods and theory of contemporary archaeology using examples from Old and New World prehistory. The relationship of archaeology to anthropology is emphasized. Offered annually.

ANTH 179: 1-3 s.h.**Experimental**

Experimental

ANTH 220: 3 s.h.**Ethnographic Methods (W)**

Introduces ethnographic research methods through individual or group fieldwork, emphasizing the ethnographic interview and participant observation. Prereq: ENGL 110 or permission of instructor.

ANTH 222: 3 s.h.**American Indian (G3, W)**

Examination of past and present cultures of the native peoples of North America. Offered periodically. Prereq: ENGL 110.

ANTH 223: 3 s.h.**People and Cultures Of Mediter (G3)**

Comparison and contrast of the history and culture of rural and urban society in the Mediterranean region. Focus is on topics and themes of importance to the circum-Mediterranean culture area. Offered periodically.

ANTH 226: 3,6 s.h.**Compar Societs: (G3, W)**

Comparative investigations of a topic or region of current interest in the field of anthropology. Offered annually. Prereq: ENGL 110.

ANTH 227: 3 s.h.**Culture Through Film (G3, W)**

Comparative study of cultures through the medium of film using anthropological theories, perspectives and texts. Offered annually. Prereq: ENGL 110.

ANTH 227H: 3 s.h.**Culture Through Film (G3, W)**

Comparative study of cultures through the medium of film using anthropological theories, perspectives and texts. Offered annually. Prereq: ENGL 110.

ANTH 233: 3 s.h.**Topics In Archaeology (G3)**

Examines human cultural evolution before and after the advent of writing, using archaeological and related records. Topics vary from the rise of civilization to the decline of local communities. Offered annually.

ANTH 233H: 3 s.h.**Hon: Topics in Archaeology (G3)****ANTH 235: 3 s.h.****Historical Archaeology (G3)**

A comparative study of methods and aims in the discipline of historical archaeology (the excavation of sites dating post-1500), including excavation and analysis techniques, approaches to archaeological research, and case studies of specific excavations.

ANTH 279: 3 s.h.**Experimental**

Experimental

ANTH 300: 3-12 s.h.**Co-Op Ed Experience in Anthro**

Co-Op Ed Experience in Anthro

ANTH 320: 3 s.h.**Archeological Method and Theory**

Focus on current developments in archaeological method and theory, with specific emphasis on contract archaeology, survey methods, artifact analysis and contemporary theoretical approaches. Offered annually. Prereq: ANTH 123 plus 3 additional hours of anthropology or permission of instructor.

ANTH 320H: 3 s.h.**Hon: Arch Method and Theory****ANTH 325: 3 s.h.****Medical Anthropology**

Cross-cultural study of health and healing, including comparative medical systems, theories of disease, patients/healers in the context of culture, mental health, bioethics, interaction of culture, biology and environment, and the effects of cultural change. Offered periodically.

ANTH 326: 3 s.h.**Anthropology of Religion (G3)**

A cross-cultural examination of religious diversity. Primary emphasis will be placed on the five major world religions, although other religious traditions may also be considered. The course examines religion as a form of cultural practice, how people utilize religion to orient themselves to the social worlds in which they live, and the ways in which religion shapes peoples' lives. Pre-req: C- or higher in ANTH 121, restricted to Juniors and Seniors, Majors and Minors in the Sociology/Anthropology department, or instructor permission.

ANTH 327: 3 s.h.**Urban Anthropology (G3)**

This course focuses on urbanism (the social and cultural dynamics of humans living within a large, dense city environment). Various topics to be examined in this course include the rise of urbanism, globalization, the dynamic nature of ethnic and class relations within urban communities, social and political activism among urban populations, migration, and settlement. 3 credits. Pre-requisite: ANTH 121

ANTH 336: 3 s.h.**Language & Communication (G3)**

A Comparative Course that examines language as humans' primary means of communication. Although virtually all animals communicate in some form, language is considered distinctly human as a result of cognitive, cultural, and physiologically distinct features of our species. The course examines language as both a system and performance. The systematic approach towards language study examines the structural components of language: phonemes, morphemes, syntax, grammar, etc., while a performance approach towards language study examines the art and style of communication (regional accents and dialects, slang, etc.). Anthropologists widely consider language to be the single most important aspect of human culture, as language is the means by which culture is transmitted to others. Other key topics to be examined in the course include language and identity, bilingualism, the critical age of language development, language shift vs. language maintenance, the development of pidgins and Creole languages (with a particular focus on Black English Vernacular, Spang/ish, and the Ca/6 dialect of the Southwestern United States), the prescriptive vs. descriptive debate within linguistics, linguistic profile, language prejudice, and the rise of linguistic nationalism (as seen in cases such as the situation in Quebec among Franco-Canadian nationalists and the "English as the Official Language" debate in the United States. Prereq: ANTH 121 and Junior class standing.

ANTH 344: 3 s.h.**Gender, Race, and Class (P)**

The intersecting role of gender, race and class on human social life in the U.S. and other cultures. An interdisciplinary and comparative examination of the ways social categories define, limit and liberate human potential. Offered annually. Prereq: COMM 100, ENGL 110, junior status and at least two social science courses.

ANTH 344H: 3 s.h.**Hnrs:Gender, Race, and Class (P)**

Hnrs:Gender, Race, and Class

ANTH 379: 3 s.h.**Experimental**

Experimental

ANTH 400: 3-12 s.h.**Co-Op Ed Experience in Anthro**

Co-Op Ed Experience in Anthro

ANTH 422: 3 s.h.**History of Anthropological Theory**

Examines, in a developmental fashion, the attempts made by anthropologists to explain human similarities and differences, and the dynamics of culture change. Offered annually. Prereq: junior/senior status and a minimum of 9 s.h. in anthropology.

ANTH 425: 1-6 s.h.**Field Study**

Individual or group research in any of the subdisciplines of anthropology, including archaeological field school and ethnographic field projects. Offered periodically. Prereq: permission of instructor.

ANTH 458: 3-6 s.h.**Seminar In Anthropology**

Research and group discussions for advanced students on various topics of interest. A total of 6 s.h. may be taken. Offered in alternate years. Prereq: permission of instructor.

ANTH 479: 3 s.h.**Experimental**

Experimental

ANTH 489: 1-4 s.h.**Honors Course**

Two to four semesters of supervised research by highly motivated students capable of conducting independent research projects. Prereq: 3.0 GPA and recommendation by faculty mentor. For further information, see the Special Academic Opportunities section.

ANTH 498: 1-6 s.h.**Independent Study**

For further information, see the Special Academic Opportunities section.

ANTH 499: 1-4 s.h.**Departmental Honors**

Two to four semesters of supervised research by highly motivated students capable of conducting independent research projects. Prereq: 3.0 GPA and recommendation by faculty mentor. For further information, see the Special Academic Opportunities section.

ANTH 500: 3-12 s.h.**Co-Op Ed Experience in Anthro**

Co-Op Ed Experience in Anthro

ECON 100: 3 s.h.**Introductory Economics (G3)**

Introduction to economics as a social science for nonmajors or students interested in taking ECON 101 or 102 who would like a preparatory course. Introduction to fundamental economic concepts, economic policy and global markets. Class activities and simulations complement an emphasis on current events. No credit towards an economics major or minor or BSE social studies major. Offered periodically.

ECON 101: 3 s.h.**Principles of Macroeconomics (G3)**

Introduction to macroeconomic analysis concentrating on national income, price levels, employment, monetary policy and fiscal policy with introductory analysis of the global economy. To be successful, it is recommended that students be proficient in algebra (the equivalent of successfully completing MATH 101 or MPT equivalent); however MATH 101 is not a pre-requisite. Offered in fall, spring.

ECON 101H: 3 s.h.**Hnrs:Prin of Macroeconomics (G3)**

Hnrs:Prin of Macroeconomics

ECON 102: 3 s.h.**Principles of Microeconomics (G3)**

Introduction to microeconomic analysis concentrating on consumer and producer behavior, competitive and other markets, public policy and government regulation. To be successful, it is recommended that students be proficient in algebra (the equivalent of successfully completing MATH 101 or MPT equivalent); however MATH 101 is not a pre-requisite. Offered in fall, spring.

ECON 102H: 3 s.h.**Hnrs:Prin of Microeconomics (G3)**

Hnrs:Prin of Microeconomics

ECON 179: 3 s.h.**Experimental**

Experimental

ECON 203: 3 s.h.**Introduction to World Economy (G3)**

An introductory course analyzing and comparing global economies, trade and economic development. This course does not count toward the major, but qualifies for BSE social studies major and for the minor. MATH 101 or MPT equivalent is highly recommended prior to taking this course. Offered in fall, spring. Prereq: ECON 100, 101 or 102.

ECON 215: 3 s.h.**Money, Credit, and Banking (G3)**

Survey of monetary and banking institutions, policies and practices, including study of monetary theory. Offered in fall, occasionally in spring. Prereq: ECON 101.

ECON 225: 3 s.h.**Comparative Economic Systems (G3, W)**

Analysis of economic systems in France, the former Yugoslavia, China, Japan, the United Kingdom, the former Soviet Union and the United States. Emphasis varies with each offering at the discretion of the instructor. Offered in spring. Prereq: ECON 101, ENGL 110.

ECON 226: 3 s.h.**Area Studies (G3)**

Analysis of regional economies such as Africa, Asia or Latin America. The area of study will be specified by the instructor expected to teach the course. Offered periodically. Prereq: ECON 101 or 102.

ECON 231: 3 s.h.**Applied Statistics 1 (G3)**

Presentations of data, measures of central tendency and variation, and index numbers. Introduction to probability theory, sampling and inference and regression and time series analysis. Offered in fall, spring.

ECON 231H: 3 s.h.**Hon: Applied Statistics 1 (G3)****ECON 235: 3 s.h.****Mathematical Economics**

Static analysis in economics, consumer and firm equilibrium, marginal analysis, optimization problems. Preliminary use of algebra and calculus for business and economic applications. Offered infrequently. Prereq: ECON 101, 102; MATH 101 or equivalent.

ECON 246: 3 s.h.**Econ Health and Welfare Prgm (G3)**

Analysis of consumer theory, firm theory and market failure within the context of health economics. Emphasis on the institutions involved in health care provision, labor markets for health care professionals and market structure and government regulation. Offered in fall. Prereq: ECON 102.

ECON 300: 3-12 s.h.**Co-Op Ed Experience in Econ**

Co-Op Ed Experience in Econ

ECON 305: 3 s.h.**Economics in Film (D, W)**

This course utilizes film as a bridge between real economic life and scholarly treatment of the relevant issues. The course emphasizes critical thinking and synthesis of economic ideas. Students must also engage in questioning the obvious, exploring meaning, and writing about issues from films incisively and analytically following the scientific method.

While maintaining rigor in their writing, students must state clearly their hypothesis and empirical methodology. Data collection includes primary data, surveys, personal interviews, and focus groups (culturally diverse groups related to the underlying socioeconomic issue). Prereq: ECON 100 or 101 or 102; COMM 100; ENGL 110 and junior status.

ECON 307: 3 s.h.**Environmental Economics (G3, W)**

Microeconomic theory applied to the problems of pollution control, sustainability, and valuation of environmental goods and services. Topics include economic efficiency, externalities, public goods, benefit-cost analysis and environmental policy. Content includes economic theory, critical analysis, and problem solving applied to applications of economic efficiency, welfare analysis, and optimal pollution abatement policy. Offered in spring. Prereq: ECON 102, ENGL 110, and Math 101 or MATH placement beyond MATH 101 (MATH 151, 155H, 160, 161, 163H)

ECON 310: 3 s.h.**Economics of Justice (P)**

Economic concepts and models are used to explain laws and legal situations. Economics is applied in some of the principal areas of the law: property, contracts, torts and crime. Offered infrequently. Prereq: ENGL 110, COMM 100, junior status, ECON 102, BUAD 202, or permission of instructor.

ECON 316: 3 s.h.**Public Finance (G3)**

Economic aspects of governmental budgeting emphasizing fiscal policy including impact of taxation and expenditures. Topics include the allocation, distribution and stabilization effects of the public household. Offered in spring. Prereq: ECON 101, 102.

ECON 318: 3 s.h.**Intermediate Microeconomics (G3)**

Similar in scope to ECON 102 with major emphasis on the further development and refinement of tools of economic analysis. Offered in spring. Prereq: ECON 101, 102 and MATH 151 or 161.

ECON 318H: 3 s.h.**H:Intermediate Microeconomics (G3)****ECON 319: 3 s.h.****Intermediate Macroeconomics (G3)**

Similar in scope to 101, with major emphasis on the determination of the economy's total output, the price level and the level of employment. The course incorporates the interaction of the market for goods and services, the assets market and the labor market. Offered in fall. Prereq: ECON 101.

ECON 323: 3 s.h.**Games and Experiments in Econ (G3)**

This course presents how economic theory is used to explain decisions of economic agents (e.g., consumers, firms or the government) in markets and strategic environments where the outcomes depend on the interaction of the decisions of the agents. Tests of economic theory predictions in the form of laboratory experiments will also be discussed and implemented. The areas of study include market behavior under various institutional settings, allocation decisions in settings with externalities, and individual choice and uncertainty. Offered annually. Prereq: ECON 102 or 102H, and ENGL 110.

ECON 325: 3 s.h.**International Economics (G3)**

Theory of international trade, commercial policy and trade in relation to economic development, balance of payments and the foreign exchange market, international monetary developments, foreign aid and economic growth. Offered in spring. Prereq: ECON 101, 102.

ECON 325H: 3 s.h.**Hon: Intl Economics (G3)****ECON 326: 3 s.h.****Economic Growth and Development (G3)**

Introduction to economic characteristics and problems of less developed countries and to associated theories and policies. Offered annually. Prereq: ECON 101, 102; ENGL 110.

ECON 327: 3 s.h.**Women and Global Econ Develop (D, P)**

Theoretical and case-based examination of women in the political economy of "less developed" economies. Issues covered include women's experiences with economic development; effects of economic development on women's status, roles, workloads and resource access; effective methods of empowerment for women experiencing contemporary economic development; and targeting gender in development, particularly through grassroots efforts. Offered annually. Prereq: ECON 101 or 102, COMM 100, ENGL 110, junior status.

ECON 333: 3 s.h.**Econometrics**

The estimation and hypothesis-testing of economic models, principally using regression techniques. Topics include linear models, time series analysis and simultaneous equations models. The uses and limitations of these models for economic forecasting are examined with the aid of computers. Offered in spring. Prereq: ECON 101, 102 and either 231 or 332.

ECON 333H: 3 s.h.**H:Econometrics**

ECON 335: 3 s.h.**Forecasting and Analytics (G3)**

Emphasis is on authentic learning of the forecasting and analytics methods that practitioners have found most useful. Prereq: ECON 231 or MATH 235, and ECON 101.

ECON 345: 3 s.h.**Labor Economics (G3)**

The labor market and labor forces, theories of wages and employment, security, determinants of trade union policy and governmental manpower policies. Offered in spring. Prereq: ECON 101, 102.

ECON 345H: 3 s.h.**HNRS:Labor Economics (G3)****ECON 355: 3 s.h.****Econ of Sex, Drugs, & Religion (G3, P)**

This course applies consumer theory, firm theory, and market failure to the economics of social issues via the broad, and often controversial, topics of sex, drugs, and religion. Emphasis is placed on the current economic, political, and legal aspects of these issues and therefore specific topics may change depending on current events. Students will explore these topics and lessons via research articles published in academic journals and by research published by the top economic research organizations. Prerequisites: ECON 102 and MATH 101 or math placement beyond 101, MATH 130 or equivalent.

ECON 365: 3 s.h.**History of Economic Thought (G3)**

Examination of a variety of theoretical and philosophical perspectives in economics developed during the past few hundred years. The ideas of well-known economists such as Adam Smith and Karl Marx are typically analyzed, as is the thought of a selection of lesser known contributors to the discipline. Offered once every two years. Prereq: ECON 101, 102.

ECON 375: 3 s.h.**Econ of Industrial Organization (G3)**

The study of (1) how enterprises function within a variety of market structures and (2) how well the outcomes fit the public interest. Specific topics include market share, barriers, concentration, vertical power, economies of scale, pricing behavior, mergers and efficiency. Offered in spring. Prereq: ECON 101 and 102.

ECON 379: 3 s.h.**Experimental**

Experimental

ECON 400: 3-12 s.h.**Co-Op Ed Experience in Econ**

Co-Op Ed Experience in Econ

ECON 479: 3 s.h.**Experimental**

Experimental

ECON 488: 3 s.h.**Seminar in Economics (W)**

Students participate in the process of knowledge creation by generating a research question in economics and undertaking in-depth analysis of that question. The course is structured to support student development and application of critical analytical skills through theoretical and/or empirical methods, research and information management skills, and writing and presentation skills. The course emphasizes the process of research and writing, culminating in three final products: the paper, the poster and the presentation. Majors only. Offered annually. Prereq: ENGL 110, minimum 12 hours of economics or permission of instructor.

ECON 489: 1-4 s.h.**Honors Course**

Honors Courses/Thesis

ECON 498: 1-3 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

ECON 499: 1-4 s.h.**Departmental Honors**

Honors Courses/Thesis

ECON 500: 3-12 s.h.**Co-Op Ed Experience in Econ**

Co-Op Ed Experience in Econ

GEOG 101: 3 s.h.**The Global Environment (G3)**

Global survey of human environment interactions focusing on people's use of natural resources and major related issues, including scarcity and environmental impacts. Comparisons between developing and developed countries and across cultures.

GEOG 120: 3 s.h.**Human Geography (D, G3)**

Cultural geography of race, ethnicity, gender and political systems. Emphasis on processes that create and maintain cultures and the geographies that these processes produce. Offered in spring.

GEOG 123: 3 s.h.**Place and Identity (G1)**

Introduction to humanistic geography through an examination of the foundational geographical concepts of place and human identity. 'Place', and its close corollary 'identity', are explored chronologically beginning with the philosopher-geographers of ancient Greece and Rome, through to modern social and political philosophies of the 19th and 20th centuries. Cross cultural examples are used to illustrate the nature of place as a fundamental element of everyday human experience of the world.

GEOG 130: 3 s.h.**Intro to Environmental Science (G2)**

Introduction to the scientific concepts, principles, and methodologies that underlie environmental change and environmental sustainability. Emphasis on the spatial scale and interconnection of multiple environmental processes, the effects of human activities on environmental processes, and the technical and scientific methods for their assessment and analysis.

GEOG 130H: 3 s.h.**Hon: Intro to Environ Science (G2)****GEOG 141: 3 s.h.****World Regional Geography (G3)**

Spatial patterns of environmental, cultural, social, economic and political developments in selected regions of the world. Emphasis on developed and less developed parts of the world.

GEOG 202: 3 s.h.**Environmental Sustainability (G3)**

Investigation of problems that have arisen through human use of earth's resources, and the technical, economic, policy, and social options available to us. Offered in fall, spring.

GEOG 222: 3 s.h.**Economic Geography (G3)**

Location of economic activities in different environmental settings. The growth of global economic interdependence. Economic growth and development strategies in a regional framework. Economic versus environmental trade-offs. Offered in summer.

GEOG 223: 3 s.h.**Health, Gender, Race & Class (G3)**

Introduction to the geographical distribution of select contemporary diseases and their relationships to other health care issues. Distribution of, and access to, scarce health care resources along with impacts of gender, race, and class on human life chances at global (especially developed versus developing countries), regional and local (such as urban versus rural) scales are evaluated.

GEOG 226: 3 s.h.**Political Geography (D, G3, W)**

Political boundaries of the world map. Covers violent conflicts from which countries were formed. Colonization (1400-1900), decolonization (1800-1970) and the Cold War are discussed. Offered in fall, spring. Prereq: ENGL 110.

GEOG 226H: 3 s.h.**Hrs:Political Geography (D, G3, W)**

Hrs:Political Geography. Offered in fall.

GEOG 227: 3 s.h.**Cities (G3)**

City development is described and explained in a global context. The US city system is explained and compared to European, Asian and African urban systems. Contemporary city problems (gentrification, urban decline, segregation, etc.) are discussed.

GEOG 228: 3 s.h.**Geography of Sport (G3)**

Using a geographical basis, the course will examine a variety of topics, including landscapes of modern sport; place and space in sport; institutions and spatial organization of sport; and sport, politics and development. Offered periodically.

GEOG 229: 3 s.h.**Sustainable Tourism (G3)**

An investigation of the areal distribution of recreation and tourist activities and their positive and negative impacts; emphasis on environmental and economic aspects of leisure within a locational framework. Planning methodology to alleviate problems and create higher-quality recreational experiences. Offered infrequently.

GEOG 230: 3 s.h.**Physical Geography (G2)**

Study of the Earth's physical environment, including atmosphere, hydrosphere, lithosphere and biosphere. Viewing the Earth as an integrated system, global patterns and processes are analyzed. Offered annually.

GEOG 242: 3 s.h.**London (G3)**

Using London as the core of the class, students will be introduced to basic geographic concepts and methods of analysis. Despite the focus on one city, London, the course will take a thematic approach towards geographical inquiry (map interpretation, urban planning, migration, segregation, industrial development, political geography and empire building) London's twentieth century industrial decline will be used to illustrate broader themes of global economic competition.

GEOG 245: 3 s.h.**Geography of Pennsylvania (G3)**

Introduction to the geography of Pennsylvania, using the tools and concepts of regional geography. Physical, cultural and economic landscapes and resulting social and environmental issues are examined.

GEOG 245H: 3 s.h.**Hon: Geog of Pennsylvania (G3)****GEOG 248: 3 s.h.****Geography of Africa (D, G3)**

The course uses a thematic approach to examine many of the subfields of geography as they pertain to Africa. Topics include the physical landscape, climate, vegetation, environmental issues, precolonial and colonial history, politics, culture, population, urbanization, agricultural and economic development, and medical gender issues. Offered periodically.

GEOG 248H: 3 s.h.**Hon: Geography of Africa (D, G3)****GEOG 278: 3 s.h.****Transportation Geography (G3)**

Transportation is defined as the movement of goods and people from place to place. This course introduces the principles underlying these movements, with discussion of the economic, social and environmental impacts. Offered periodically.

GEOG 279: 3 s.h.**Experimental**

Experimental Course in Geography

GEOG 281: 3 s.h.**Maps and GIS (G3)**

Thorough examination of maps as tools for representing Earth dimensions, depicting landscapes and displaying data. Use Geographic Information Systems (GIS) mapping software to make a variety of effective maps.

GEOG 289: 3 s.h.**Field and Research Methods in Geography (W)**

Introduction to the theory, process, and methodology used to collect and analyze data, and conduct and communicate research within the multidisciplinary context of geographic inquiry.

GEOG 292: 3 s.h.**Quantitative and Spatial Analysis (G2)**

Analysis of spatial and other geographical data using descriptive statistical measures, probability and sampling, and inferential statistical methods. Emphasis on geographical problem solving. Prereq: GEOG 281, and MATH 130 or higher, or MPT 151 or higher, or MATH 101.

GEOG 295: 3 s.h.**GIS I: Vector Data Analysis (G2)**

Introduction to Geographic Information Systems (GIS) computer technology, theory, and methodology focusing on vector data models. Combines understanding of geographic data and research with experience in digital mapping, geographic databases, and spatial analysis. Offered in fall, spring. Prereq: GEOG 281.

GEOG 296: 3 s.h.**GIS II: Raster Data Analysis**

Introduce students to the fundamental concepts of Raster GIS. Topics will include: the physical basis for remote sensing, the extraction of information contained within energy, remote sensing instrumentation, aerial photography, photogrammetry, digital image processing, data structure, database design, and spatial data analysis. Land-based environmental resources and sustainability applications.

GEOG 296H: 3 s.h.

H: GIS II: Raster Data Analysis

GEOG 300: 3-12 s.h.

Co-Op Ed Experience in Geog

Assignment with a public agency or private organization. Requirements include design of an approved job description relevant to employer's functions and student's program, and a planned program of contact with the faculty supervisor. Performance evaluation by sponsor used in assigning satisfactory/unsatisfactory grade.

GEOG 302: 3 s.h.

Food System Sustainability (G3, W)

Examines the attendant economic, social and environmental impacts of our food system. Key areas of policy influence on our food system and sustainable interventions for transforming our food system will also be addressed. Offered periodically. Prereq: ENGL 110; GEOG 101 or GEOG 130 or GEOG 202 or permission of instructor.

GEOG 304: 3 s.h.

Water Resources Management (G3)

An interdisciplinary study of how we plan, manage and use water. Topics range from water law to hydrology. Offered periodically. Prereq: GEOG 101 or 202.

GEOG 305: 3 s.h.

Energy Sustainability (G3, W)

Explores energy production and consumption from geographic and sustainability perspectives. The social, economic and environmental impacts of traditional and alternative energy resources will be examined. Options for a sustainable energy future in different geographic locations will be addressed. Offered periodically. Prereq: ENGL 110; GEOG 101 or GEOG 202 or permission of instructor.

GEOG 305H: 3 s.h.

Hon: Energy Sustainability (G3, W)

GEOG 306: 3 s.h.

Environmental Impact Assessment

The various regulatory requirements and technical methods for developing federal environmental-impact statements for air, water, biological and socioeconomic environments. Offered periodically. Prereq: GEOG 202 and 230 or permission of instructor.

GEOG 307: 3 s.h.

US Environmental Policy (G3)

Federal environmental legislation; the relationship between local, state and federal agencies in policy formation and implementation; industry responsibilities and options under existing law; the role of interest groups and the public in environmental decision making and U.S. engagement in emerging international environmental policy debates. Offered in fall of odd years. Prereq: junior or senior status; GEOG 101 or 202 or GOVT 205 or ECON 102 or permission of instructor.

GEOG 333: 3 s.h.

Biogeography (G3)

Interactions between environmental, biological and human factors which have led to current geographical distributions of flora and fauna. Field trip required. Offered periodically. Prereq: GEOG 230 or BIOL 100 or permission of instructor.

GEOG 336: 3 s.h.

Climate And Society (G3)

Human interrelationships with the atmospheric environment. Includes microclimatological applications in agriculture, water resources, human health and architecture to analysis of global climate-change issues. Offered periodically. Prereq: GEOG 230 or ESCI 107 or permission of instructor.

GEOG 342: 3 s.h.

Europe (G3, W)

Introduction to Western Europe as a region. Emphasis on its delimitation and cultural, economic and political spatial patterns relating to the desire to form a European community. Europe within a global framework also considered. Offered in winter, spring, summer. Prereq: ENGL 110.

GEOG 343: 3 s.h.

Latin America & the Caribbean (P)

A thematic study of the physiographic and cultural regions of Latin America and the Caribbean. Historical, economic, political, social, and environmental geography approaches to studying regional characteristics. Select topics include population change, land use change, urban development, economic development, environmental sustainability, and human rights. Offered periodically. Prereq: COMM100; ENGL110; and junior or senior status.

GEOG 344: 3 s.h.

North America (G3)

Geography of the U.S. and Canada using the tools and concepts of regional geography. Physical, population and economic patterns are merged in developing an understanding of regional characteristics and issues.

GEOG 350: 3 s.h.

Global Issues (G3)

Issues related to urban, cultural and resource problems are analyzed globally. Emphasis on spatial nature of these problems and emerging global interdependence. Focus on a single current issue, which will be identified in advertised course title. Offered periodically.

GEOG 372: 3 s.h.

Urban and Regional Planning (G3)

Introduction to land use and other types of planning in urban and rural areas. Assessment of development suitability and environmental impact. Techniques for implementing different types of plans. Offered annually.

GEOG 379: 3 s.h.

Experimental

Experimental

GEOG 384: 3 s.h.

Cartography

Introduction to concepts and techniques of mapmaking. Skill developed in computer-based compilation, layout and lettering of maps. Offered periodically. Prereq: GEOG 281, 295.

GEOG 395: 3 s.h.

GIS for Web Development

Integrate GIS and Web development technologies. Implement data compilation and map design decisions to support an organization's internal and public information flows. Incorporate interactive maps and information retrieval to enhance Web content. Prerequisites: GEOG 295 or ESCI 281, and DESN 247 or CSCI 121.

GEOG 396: 3 s.h.**GIS Modeling**

Analyze and construct GIS-based models of various geographical scenarios. Strategize spatial and temporal problem solving in environmental, transportation, emergency management and other contexts. Adapt some models to computer algorithms used within GIS software. Prerequisites: GEOG 295 or ESCI 281, and GEOG 296, and CSCI 161 or ESCI 282, or permission. Offered fall of even-numbered years.

GEOG 397: 3 s.h.**GIS Data Management**

Fully explore the GIS geodatabase model and related data structures, and how they encapsulate all data types, characteristics and capabilities. Assess data quality and long-term data management issues.

GEOG 400: 3-12 s.h.**Co-Op Ed Experience in Geog**

Assignment with a public agency or private organization. Requirements include design of an approved job description relevant to employer's functions and student's program, and a planned program of contact with the faculty supervisor. Performance evaluation by sponsor used in assigning satisfactory/unsatisfactory grade.

GEOG 407: 3 s.h.**Glbl Envrnmtl Policy/Negotiatn (G3, W)**

Global political and economic forces and environmental change. Emphasis on spatial patterns and processes of transboundary environmental problems, the major pieces of international environmental policy, the negotiations process between states and nonstate actors in policy formation and implementation, and the dynamics of North-South relations on the changing physical landscape. Offered in spring of even years. Prereq: junior or senior status; ENGL 110, GEOG 307 or permission of instructor.

GEOG 408: 3 s.h.**Sustainable Development (D, P)**

Social, economic, and environmental aspects of global sustainable development. Class discussion integrated with research and service learning projects. Prereq: COMM 100, ENGL 110, and junior or senior standing.

GEOG 479: 3 s.h.**Experimental**

Experimental

GEOG 488: 1-3 s.h.**Senior Thesis**

Investigation of selected topic with individual research assignment; focus varies but related to geographical analysis. For senior Geography majors only. Prereq: senior standing and completion of basic courses. Offered as needed.

GEOG 489: 1-4 s.h.**Honors Thesis**

Investigation of selected topic with individual research assignment; focus varies but related to geographical analysis. Prereq: senior standing and completion of basic courses and eligibility for departmental honors. See Special Academic Opportunities, Departmental Honors section of this catalog.

GEOG 498: 1-3 s.h.**Independent Study**

Investigation of selected topic with individual research assignment; focus varies.

GEOG 499: 1-4 s.h.**Departmental Honors**

Investigation of selected topic with individual research assignment; focus varies but related to geographical analysis. Prereq: senior standing and completion of basic courses and eligibility for departmental honors. See Special Academic Opportunities, Departmental Honors section of this catalog.

GEOG 500: 3-12 s.h.**Co-Op Ed Experience in Geog**

Co-Op Ed Experience in Geog

GOVT 100: 3 s.h.**Politics and Popular Culture (G3)**

Demonstrates and analyzes the reciprocal relationship between politics and popular culture, both within the United States and globally.

GOVT 111: 3 s.h.**Introduction to American Government (G3)**

Introduction to the major tenets of the American political system.

GOVT 112: 3 s.h.**Introduction to State and Local Government (G3)**

The federal system and state and local governmental problems. Emphasis on Pennsylvania when possible.

GOVT 179: 3 s.h.**Experimental**

Experimental

GOVT 205: 3 s.h.**Introduction to Public Policy (G3)**

Decision making by governments in response to public problems. The policy process. Current policy issues, selected from such possible examples as education, abortion, energy and environment. Some problems of policy evaluation.

GOVT 211: 3 s.h.**Introduction to the U.S. Constitution (G3)**

An introduction to the U.S. Constitution, with specific attention on its purpose, principles, parts, and theories of interpretation. GOVT 111 highly recommended prior to this course.

GOVT 212: 3 s.h.**Women & American Politics (G3, W)**

Examines the role of women in American political institutions including the legislature, executive, and judiciary, the factors which impact women's participation in politics, and the consequences for issues which concern women such as abortion, pay equity, and paid family leave.

GOVT 221: 3 s.h.**Introduction to Comparative Political Systems (G3)**

Introduction to the comparative analysis of government and politics through an examination of different political systems including advanced democracies and developing nations.

GOVT 225: 3 s.h.**Modern China (G3)**

Study of political development in China, with an emphasis on political behavior, culture, institutions, processes and structure.

GOVT 228: 3 s.h.**Democracy and Its Challenges (W)**

An exploration into the entire process of democratization, from the conditions that allow democracy to emerge through the stages of democratization towards the post-democratic challenges faced around the globe.

GOVT 231: 3 s.h.**Introduction to Political Theory (G3, W)**

Representative philosophers and concepts in the history of Western political theory from antiquity through the 19th century.

GOVT 231H: 3 s.h.**Hnrs: Intro Political Theory (G3)**

Hnrs: Intro Political Theory

GOVT 232: 3 s.h.**Political Theory, Literature, and Film (G3, W)**

Uses literature and film to explore central topics in political theory such as capitalism, socialism, democracy and its problems, technology and its problems, etc. Prereq: ENGL 110

GOVT 241: 3 s.h.**Public Administration and Public Service (G3, W)**

A study of intergovernmental relations, organizational theory, decision making, personnel, management, budgeting, program evaluation and policy analysis. Prereq: ENGL 110. Recommended: GOVT 111.

GOVT 251: 3 s.h.**Introduction to Global Politics (G3)**

The nation-state system. Military, political, economic, organizational and legal relations among states. Power and the pursuit of national goals.

GOVT 252: 3 s.h.**Global Crime and Justice (G3)**

Explores the increasingly transnational nature of crime (including global crimes such as human, arms and drug trafficking), the consequent impact upon human security and sustainable development, and international legal responses. Also addresses the legal distinctions and connections between global and international crimes, the latter including terrorism and crimes against humanity. Open to all majors.

GOVT 279: 3 s.h.**Experimental**

Experimental

GOVT 300: 3-12 s.h.**Co-Op Ed Experience in GOVT**

Co-Op Ed Experience in GOVT

GOVT 312: 3 s.h.**American Political Parties (G3, W)**

The origins of American political parties. The American two party system. Political parties in American campaigns and elections. The role of political parties in American governance. The role of third parties in America. Prereq: ENGL 110. Recommended: GOVT 111.

GOVT 312H: 3 s.h.**Honors: American Political Parties (G3, W)****GOVT 313: 3 s.h.****American Presidency (G3, W)**

Examination of the presidency and the executive branch of national government. Emphasis on the growth and development of presidential power. Prereq: ENGL 110.

GOVT 314: 3 s.h.**American Judiciary (G3, W)**

Examination of state and federal courts. Primary emphasis on federal courts and especially the U.S. Supreme Court. Recommended: GOVT 111.

GOVT 315: 3 s.h.**Congress and Lawmaking (G3, W)**

A study of the organization, rules and procedures of the Senate and House of Representatives and extensive analysis of the internal and external environment for policy making by Congress. State legislatures are also examined in the same manner. Prereq: ENGL 110. Strongly recommended: GOVT 111.

GOVT 323: 3 s.h.**Government and Politics of the Middle East (D, G3)**

Examination of Middle Eastern politics, including the political systems of Israel, the Palestinian national movement, Iraq, Jordan, Saudi Arabia, Turkey, Syria, and Iran. It assumes a comparative approach toward several regional issues, such as terrorism, the Palestinian-Israeli conflict, Islamic fundamentalism and the peace process. The impact of national, economic, gender and religious perspectives upon the region's politics will also be addressed. GOVT 221 recommended.

GOVT 325: 3 s.h.**Modern Asia (G3)**

Study of political development across East Asia, with an emphasis on political behavior, culture, institutions, processes and structure.

GOVT 327: 3 s.h.**Canadian Government and Politics (P)**

Government and politics of Canada and an examination of how its geography, history, economics and culture have affected its governance. Consideration of major policy issues and their impact on Canada's future. Prereq: COMM 100, ENGL 110 and junior status.

GOVT 327H: 3 s.h.**Honors: Canadian Government and Politics (P)****GOVT 331: 3 s.h.****Modern Political Thought**

This course will examine political thinkers from Machiavelli to Nietzsche. Among others, it will explore the thought of Hobbes, Locke, Rousseau, Marx, Hume, etc. The course will explore questions regarding human nature, the ideal state, the tensions between principles of freedom and equality, critique of existing systems, etc. Prereq: GOVT 111, Prereq/ Coreq: GOVT 231.

GOVT 332: 3 s.h.**Contemporary Politics (G3, W)**

Examines the principles and ideologies found in current politics. Includes an examination of progressivism, communism, conservatism, multiculturalism, etc.

GOVT 333: 3 s.h.**American Political Thought (G3, W)**

Study of the history and development of democracy in an American setting. Emphasis on different and often conflicting versions of democratic theory and practice. Prereq: ENGL 110

GOVT 341: 3 s.h.**Introduction to City Planning (P)**

Study of the dynamics of human settlement patterns in the country and abroad. Examines public policy alternatives regarding land use and development patterns. Introduces methods and techniques used in designing settlement systems and studies values reflected in human settlement patterns. Prereq: COMM 100, ENGL 110 and junior status.

GOVT 351: 3 s.h.**International Law**

Classical sources and recent developments in international law. Evaluation of law in the context of world politics. Recommended: GOVT 251.

GOVT 351H: 3 s.h.**Honors: International Law**

H:International Law

GOVT 352: 3 s.h.**International Organizations (G3)**

Study of various intergovernmental and nongovernmental associations representing a number of multinational groupings serving humanitarian, economic and security functions. Emphasis on organizations such as the United Nations and the European Union. Recommended: GOVT 251.

GOVT 355: 3 s.h.**American Foreign Policy (G3)**

Institutional and historical overview of American foreign policy. Formal, informal and institutional sources of foreign policy. Emphasis on post-WWII presidential administrations. Recommended: GOVT 111 or GOVT 251.

GOVT 355H: 3 s.h.**Honors: American Foreign Policy (G3)**

Hnrs:American Foreign Policy

GOVT 356: 3 s.h.**Disasters and Our World (P)**

Provides a multi-perspective and global exploration into why there is no such thing as a "natural" disaster. The political, economic, social and environmental sources of vulnerability to such events will be explored along with the role disasters play in some of the 21st century's most pressing global policy challenges. Open to all majors. Prereq: ENGL 110, COMM 100 and Junior Class Standing. Students who completed GOVT 408.02: Disasters and Global Politics in Fall 2019 are not eligible to earn credit for this course.

GOVT 361: 3 s.h.**Politics of Race and Ethnicity (D, G3)**

Examination of the role of racial and ethnic minority groups in American politics and government. Focus on political resources and political status of ethnic minority groups in America, ethnic minority group representation and participation in American politics, the racial divide in American public opinion, racial politics in America's cities and strategies of ethnic minority political empowerment. Prereq: GOVT 111.

GOVT 379: 3 s.h.**Experimental**

Experimental

GOVT 379H: 3 s.h.**Honors: Experimental****GOVT 400: 3-12 s.h.****Co-Op Ed Experience in GOVT**

Co-Op Ed Experience in GOVT

GOVT 401: 3 s.h.**Political Research Skills and Methods**

Knowledge and application of the Scientific Method in political research. Focus on empirical research, explanation and causation, measurement, hypothesis testing, and the challenges of conducting political research.

GOVT 408: 3 s.h.**Seminar in Government, Policy and Law**

Analysis of critical problems in the discipline. Research and preparation of a written report. Seminar may be taken for credit more than once, provided content is different each time.

GOVT 408H: 3 s.h.**Honors: Seminar in Government, Policy, and Law****GOVT 411: 3 s.h.****Constitutional Law: Federalism and Separation of Powers**

Focus on the allocation of power between branches and among levels of government, as interpreted through significant cases of the U.S. Supreme Court. Prereq: GOVT 111. Recommended: GOVT 314.

GOVT 411H: 3 s.h.**Honors: Constitutional Law: Federalism and Separation of Powers****GOVT 412: 3 s.h.****Constitutional Law: Civil Rights and Civil Liberties**

Focus on individual rights and liberties protected by the U.S. Constitution and Bill of Rights, as interpreted through significant cases of the U.S. Supreme Court. Prereq: GOVT 111. Recommended: GOVT 314.

GOVT 412H: 3 s.h.**Honors: Constitutional Law: Civil Rights and Civil Liberties****GOVT 431: 3 s.h.****Literature and Politics (W)**

This course will take one work of fiction, a particular author/writer, or a number of different works of fiction which are thematically connected, and examine the political, social, and cultural questions and issues embedded in these works. Political philosophy asks central questions about human life- what makes us human; what, if anything, makes the best state; how can humans live together while being individuals in their own right, etc. Well crafted works of political fiction are often the best gateway to politics since they use a fictional reality to develop abstract concepts. In fact, some of the best works of political philosophy is fiction. Instructors will choose works of fiction which, juxtaposed with political writings, speeches, articles, and texts, enable students to identify and answer the great political questions of generations. Prereq: C- or higher GOVT 111 and GOVT 231

GOVT 455: 3 s.h.**US-Middle East Foreign Relations (W)**

An institutional, historical and contemporary overview of American foreign policy in the Middle East. While key events and political processes equated with the post-World War II period will be examined, the focus of GOVT 455 will be on current US interests and policies within the region. Past events will be utilized to underscore their contemporary political relevance to US policymakers. Specifically, American policy vis-a-vis Israel, the Palestinian national movement, Egypt, Iran, Iraq, Saudi Arabia, Turkey, and Syria will be explored in detail.

GOVT 456: 3 s.h.**Global Humanitarianism (W)**

Explores the complex landscape of international humanitarian assistance, including its political, economic, governance and ethical challenges, as well as its historical evolution. It will prepare students for direct entry into a related field, post-graduate study or becoming an international aid or development volunteer. Prereq: ENGL 110, GOVT 251 OR INTL 201 and Junior class standing or permission of instructor.

GOVT 479: 3 s.h.**Experimental**

Experimental

GOVT 489: 1-4 s.h.**Honors Course**

Honors Course

GOVT 498: 1-6 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

GOVT 499: 1-4 s.h.

Departmental Honors
Departmental Honors

GOVT 500: 3-12 s.h.

Co-Op Ed Experience in GOVT

Co-Op Ed Experience in Government, Policy and Law

HIST 101: 3 s.h.

Europe and the World 1350-1789 (G3)

Europe and its world relationships during the centuries of the Reformation, the scientific revolution, overseas expansion and revolution. Offered in fall, spring.

HIST 102: 3 s.h.

Europe and World 1789-Present (G3)

Europe and its world relationships in the age of industrialization and democratization. Offered in fall, spring.

HIST 105: 3 s.h.

History Matters

An introduction to the study of history as an academic discipline (a major) and as a profession (a career) with a focus on research, interpretation, and teaching.

HIST 105H: 3 s.h.

Hon: Craft of History

HIST 106: 3 s.h.

Contours of US History (G3)

A survey of United States history from the peopling of the Americas to the present. Identifies and examines the key themes in the creation and transformation of the nation and its peoples. Offered in fall, spring.

HIST 107: 3 s.h.

Pre-Modern World Cultures (G3)

General survey of world history and culture from known beginnings to 1500. Intended for nonmajors. Offered periodically. Equivalent course HIST 206: No credit given if credit earned for HIST 206. Offered annually.

HIST 179: 3 s.h.

Experimental

Experimental

HIST 200: 3 s.h.

Reimagining Holidays & Heroes (G3)

Content-based inquiry into the celebration of US holidays and heroes. Course covers American Revolution and founding of the United States, Indigenous America since pre-Columbian interactions, and a history of Blacks in America from 1619 to the present.

HIST 205: 3 s.h.

The Art & Craft of History

An intermediate investigation of the practices of historical investigation: formulation of research queries, location and analysis of evidence, and analytical narration of findings. Prereq: HIST 105 with a grade of C- or higher.

HIST 206: 3 s.h.

World Culture & Religion to 1500 (D, G3, W)

Survey of world history from known beginnings to 1500. Offered annually. Equivalent course HIST 107: No credit given if credit earned for HIST 107. Prereq: ENGL 110.

HIST 213: 3 s.h.

Greeks and Romans (G3)

This course considers the social, political and economic history of Ancient Greece and Rome. No prior knowledge of history is necessary.

HIST 214: 3 s.h.

History of Christianity (D, G3)

Examines the formation of early Christianity, the spread of Christianity from the Roman Mediterranean through Asia, Africa, and Europe, and the major issues of European Reformation.

HIST 215: 3 s.h.

Slaves & Masters Ancient World (G3)

Considers the social, political and economic factors concerning the practice of slavery in ancient world cultures. No prior knowledge of history is necessary.

HIST 215H: 3 s.h.

Hon: Slaves/Master Ancient Wrl (G3)

HIST 216: 3 s.h.

Vikings (G3)

Considers the social, political and economic history of the Viking explorers and their society. No prior knowledge of history is necessary.

HIST 216H: 3 s.h.

Hon: Vikings (G3)

HIST 218: 3 s.h.

People and the Environment (G3, W)

This course offers an introduction to the methods and insights of environmental history in Europe and the Americas from 1500 to the present. It examines developments in Europe, with background in medieval dynamics and a focus on the period from 1500 onward, through 18th-century projects that cleared land and drained swamps, 19th and 20th century industrialization, World Wars I and II, and the post-World War II era. It also discuss the European colonization of the Americas, with background on Indian use of the land before contact with colonists.

HIST 222: 3 s.h.

Modern Britain (G3)

Modern England: the political, social, economic and cultural evolution of England from 1688 to the present. Offered annually.

HIST 222H: 3 s.h.

Hnrs: Modern Britain (G3)

HIST 223: 3 s.h.

Traditional Germany (G3, W)

The evolution of the German people and their political, cultural and socio-economic institutions from Roman times to 1806. Offered annually. Prereq: ENGL 110.

HIST 224: 3 s.h.

Modern Germany (G3, W)

German history from 1806 to the present. Offered annually. Prereq: ENGL 110.

HIST 225: 3 s.h.

Germany, 1945-Present (G3, W)

This course examines the transformation of Germany from 1945, when, at the end of World War II, there were four occupational zones and no German state, through the era of two German states, East and West, from 1949 to 1990, to the present post-reunification Germany. The events of the Third Reich, World War II, and the Holocaust will form a backdrop to much of this history, and we will quickly review them. Then, the course focuses on the activities of the four occupying powers (the United States, the Soviet Union, Great Britain, and France) in the post-war years, the emerging Cold War, the formation of East and West Germany, developments from the 1950s to the 1980s, the collapse of East Germany and reunification, and post-reunification developments. Prerequisites: ENGL 110 or ENGL 110H

HIST 230: 3 s.h.**Modern Jewish History (G3, W)**

Survey of the history of Jews in the mid 18th-20th centuries. Course designed to enrich students' historical and cultural knowledge and improve students' understanding of Gentile-Jewish relations in the modern world. Offered periodically. Prereq: ENGL 110.

HIST 241: 3 s.h.**Imperial Russia (G3, W)**

Political, cultural, economic and social history from Peter the Great to the Russian Revolution. Offered annually. Prereq: ENGL 110.

HIST 241H: 3 s.h.**Hon: Imperial Russia (G3, W)****HIST 242: 3 s.h.****Soviet Union (G3)**

Political, cultural, economic and social history from the Russian Revolution to the present. Offered annually.

HIST 250: 3 s.h.**Women in American History (G3, W)**

History of women in the United States from the early 16th century through the late 20th century, with a particular emphasis on the significance of race, class, religion and region in the shaping of women's experiences. Offered periodically. Prereq: ENGL 110.

HIST 250H: 3 s.h.**H:Women in American History (G3, W)**

Honors Course - History of women in the United States from the early 16th century through the late 20th century, with a particular emphasis on the significance of race, class, religion and region in the shaping of women's experiences.

HIST 272: 3 s.h.**Afro-American History 1 (G3, W)**

History of African Americans from their first arrival in the Americas through the Civil War, with a particular emphasis on the process of enslavement, the formation of African-American communities and institutions, and the evolution of Black abolitionism. Offered annually. Prereq: ENGL 110.

HIST 273: 3 s.h.**Afro-American History 2 (G3, W)**

History of African Americans from the Civil War through the present, with a particular emphasis on the processes of emancipation, urbanization and enfranchisement. Offered annually. Prereq: ENGL 110.

HIST 276: 3 s.h.**Am Foreign Rltns, 1890 to Pres (G3)**

With the rise of the United States as an international power in the 1890s through its current foreign policy initiatives, it has acted as a leader in the world community. This course examines the rise, decline and resurrection of the United States as a world power through its foreign relations. Offered annually. Prereq: ENGL 110.

HIST 276H: 3 s.h.**Hon: Am For Rltns, 1890-Presen (G3)****HIST 279: 3 s.h.****Experimental**

Experimental

HIST 280: 3 s.h.**Pre-Colonial Africa (G3)**

Examines major social, economic and political developments in pre-colonial African societies. It begins with an overview of historiographical debates of African history, the peopling of Africa, early migration, agricultural innovation, climatic changes to the development of civilizations and cross-cultural contacts. Offered annually.

HIST 281: 3 s.h.**African History (G3)**

A survey of African history; special emphasis on the period since 1500. Offered annually. Prereq: ENGL 110.

HIST 282: 3 s.h.**Transatlantic Slave Trade (G3)**

This course examines the Transatlantic slave trade as a transcontinental episode that was responsible for the forced migration of millions of Africans to the Americas and Europe. It critically analyzes the various dimensions of the global forces that created the Atlantic World, experienced by tens of millions of enslaved African people. It illuminates the origins and continuing legacy of inequality based in European expansion, enslavement and economic supremacy. As an exploration of human history in the Atlantic World, this course discusses indepth the historiography of the slave trade and slavery in contemporary political, economic and social interactions of Africa, Americas and Europe.

HIST 283: 3 s.h.**Colonial Latin America (G3, W)**

From pre-Columbian America to the independence of Latin America (1825). Offered periodically. Prereq: ENGL 110.

HIST 284: 3 s.h.**Modern Latin America (G3, W)**

Continuation of HIST 283 from 1826 to the present. Offered annually. Prereq: ENGL 110.

HIST 285: 3 s.h.**Decolonizatr EU Emp in Africa (G3)**

This course examines the process of the fall and dissolution of European Empires in the decades following the ending of the Second World War. It discusses the historiographical debate of factors that precipitated decolonization in teh international, metropolitan, and national arenas. The course explores colonial insurgency and counterinsurgency programs as well as negotiated, non-violent struggles that culminated in the transfer of power to African nationalists.

HIST 286: 3 s.h.**War, Revolution and Terrorism (G3)**

Examines causes, conducts, and consequences of modern wars, revolutions, and terrorism in our contemporary world. Offers students a critical understanding of the concepts and competing theories associated with the study of war. Also explores the social, political, and economic predicaments of modern states confronting the various forms of warfare.

HIST 286H: 3 s.h.**Hon: War, Revolution & Terrori (G3)****HIST 300: 3-12 s.h.****Co-Op Ed Experience in History**

Co-Op Ed Experience in History

HIST 305: 3 s.h.**Historical Investigations**

An advanced investigation of a selected topic in history that combines readings colloquium and research seminar. Prereq: HIST 205 C- or better.

HIST 308: 3 s.h.**Topics in History (G3)**

A thematic investigation of a significant historical topic with course structure and topic determined by the instructor prior to the preregistration period. Offered periodically.

HIST 308H: 3 s.h.**H Topics:**

H Topics:

HIST 313: 3 s.h.**History of Middle Ages (G3, W)**

Major political, cultural and socioeconomic developments in Europe, c. 500-1300 A.D. Offered annually. Prereq: ENGL 110.

HIST 313H: 3 s.h.**Hon: Hist of Middle Ages (G3, W)****HIST 314: 3 s.h.****The Crusades (D, G3)**

The history of the European Crusade movement to the Levant, as it was then called. The course will not concentrate on military history, but rather on the social, cultural and political factors that led to and resulted from these expeditions. The course will consider these issues from the point of view of the several groups of people, European and West Asian, who were involved in these events. Offered annually.

HIST 320: 3 s.h.**Renaissance and Reformation (G3, W)**

Cultural, social and political history of Europe, 1300-1650, with emphasis on Renaissance arts and literature and 16th century religious upheaval. Offered periodically. Prereq: ENGL 110.

HIST 330: 3 s.h.**Nineteenth-Century Europe (G3, W)**

The history of 19th-century Europe, including social, political, intellectual, cultural, religious and economic history. Offered periodically. Prereq: ENGL 110.

HIST 330H: 3 s.h.**Hnrs:Nineteenth-Century Europe (G3, W)****HIST 334: 3 s.h.****Victorian England (G3, W)**

The political, social, economic and intellectual development of England and the British Empire from the end of the Napoleonic wars to the outbreak of World War I. Offered periodically. Prereq: ENGL 110.

HIST 334H: 3 s.h.**H:Victorian England (G3, W)**

Honors Course - The political, social, economic and intellectual development of England and the British Empire from the end of the Napoleonic wars to the outbreak of World War I.

HIST 340: 3 s.h.**Twentieth Century Europe (G3, W)**

The political, socio-economic, cultural and diplomatic transformation of Europe, 1900 to the present. Offered periodically. Prereq: ENGL 110.

HIST 342: 3 s.h.**Hitler and Nazism (G3, W)**

The origins, development and impact upon Germany and the rest of the world of National Socialist theory and practice. Offered annually. Prereq: ENGL 110.

HIST 351: 3 s.h.**17th Century British America (G3, W)**

The founding and growth of the British Colonies to the Glorious Revolution of 1688, with particular attention devoted to society, beliefs and government. Offered annually. Prereq: ENGL 110.

HIST 352: 3 s.h.**Provincial and Revolutionary America (G3, W)**

America from the Glorious Revolution to the completion of the American Revolution, with particular attention to social, cultural and political developments such as the Enlightenment, the Great Awakening and the War for Independence. Offered annually. Prereq: ENGL 110.

HIST 352H: 3 s.h.**Hnrs:Provinci and Revolutry Am (G3, W)****HIST 355: 3 s.h.****Civil War and Reconstruction (G3)**

The social, political and economic causes of the Civil War, the military and social events of the war, and the postwar developments of Reconstruction, with particular emphasis on the place of African Americans in U.S. society.

HIST 356H: 3 s.h.**H:New Era, 1876-1919 (G3)**

Honors Course - Responses to industrialization from populism through the progressive era. Changes in thought and culture. World War I and American society. The rise of America as a world power.

HIST 357: 3 s.h.**Modern U.S. History (G3)**

The United States from 1900 to the present. Focus is on political and social, not military, history. Offered periodically

HIST 359: 3 s.h.**First World War (G3)**

This course focuses on the military strategy and tactics employed by the combatants during the First World War (1914-1918). Offered annually.

HIST 360: 3 s.h.**The Second World War (G3)**

The course focuses on the military strategy and tactics employed by the combatants during the Second World War (1939-1945). Offered annually.

HIST 379: 3 s.h.**Experimental**

Experimental

HIST 383: 3 s.h.**Eur Imprlsm in Af 1870-1914 (G3, W)**

Provides an informed understanding of major themes in late 19th- and early 20th-century Africa, with a particular focus on the impact of British, French, Belgian and German imperialism. Special attention will be given to the discussion of the historiography of imperialism related to Africa. Contemporary Africa will be used to provide a background for assessing the effect of imperialism on African society, politics and economies. Offered annually. Prereq: ENGL 110/H.

HIST 388: 3 s.h.**Twentieth-Century Africa (G3, W)**

Course surveys major developments in 20th-century Africa by situating them in their respective historical contexts. It examines the idea of race, cultural representation of others, colonial economic relations, decolonization, national liberation movements, debts, structural adjustment programs, democracy, post-apartheid South Africa, the emergence of U.S. Africa Command (AFRICOM) and Human Rights and Development. Offered periodically. Prereq: ENGL 110.

HIST 400: 3-12 s.h.**Co-Op Ed Experience in History**

Co-Op Ed Experience in History

HIST 401: 3 s.h.**Cultural Interactions across the Atlantic World, 1450-1820 (P)**

This perspectives course will compare the social, economic, political and religious relations of three areas: Africa, Europe and the Native Societies of the Americas in and during the period of the formation of the Atlantic World. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

HIST 401H: 3 s.h.**H:Atlantic World, 1450-1820**

Honors Course - This perspectives course will compare the social, economic, political and religious relations of three areas: Africa, Europe and the Native Societies of the Americas in and during the period of the formation of the Atlantic World.

HIST 405: 3 s.h.**Senior Seminar**

Students will prepare and defend a seminar paper of approximately 25 pages. Prereq: HIST 205 with a grade of C- or higher; junior or senior standing or permission of instructor. Satisfies advance writing (AW) requirement if a grade of B or higher is attained.

HIST 453: 3 s.h.**Indians & Colonists in PA (P)**

Early Pennsylvania became home to a variety of groups in the course of the 18th century. This course takes a transatlantic approach as it explores the diverse backgrounds of European settlers and the Native Americans whom they encountered, and interactions following the establishment of the colony. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

HIST 453H: 3 s.h.**H:Colonial PA German Society (P)****HIST 470: 3 s.h.****The Vietnam War (P)**

The Vietnam War continues to be one of the more controversial moments in the history of the United States. Course examines the war with the objective of achieving a greater understanding of why the United States entered into the conflict and how the war was fought on the military battlefields in Vietnam and political battlefields in Washington, D.C., Saigon, Hanoi and around the world. Offered annually. Prereq: COMM 100, ENGL 110 and junior status.

HIST 470H: 3 s.h.**Hnrs:The Vietnam War (P)**

Honors Course - The Vietnam War continues to be one of the more controversial moments in the history of the United States. Course examines the war with the objective of achieving a greater understanding of why the United States entered into the conflict and how the war was fought on the military battlefields in Vietnam and political battlefields in Washington, D.C., Saigon, Hanoi and around the world.

HIST 479: 3 s.h.**Experimental**

Experimental

HIST 480: 3 s.h.**History of Medicine (G3)**

The history of medicine, health and disease, including political, social, cultural, religious and economic factors from the ancient world to the present. The course includes material from European, American and world perspectives. Offered periodically.

HIST 480H: 3 s.h.**Hnrs: History of Medicine (G3)**

Honors Section. The history of medicine, health and disease, including political, social, cultural, religious and economic factors from the ancient world to the present. The course includes material from European, American and world perspectives. Offered periodically.

HIST 489: 1-6 s.h.**Honors Course**

Honors Course

HIST 489H: 1-4 s.h.**Honors Course****HIST 490: 3 s.h.****17th Century Anglo-America (P)**

This perspectives course introduces students to the use of anthropological methods in studying past societies through examinations of small communities in England and America. Offered annually. Prereq: COMM 100, ENGL 110 and junior status.

HIST 498: 1-6 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

HIST 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

HIST 500: 3-12 s.h.**Co-Op Ed Experience in History**

Co-Op Ed Experience in History

PSYC 100: 3 s.h.**General Psychology (G3)**

An introduction to the study of behavior and mental activity, including such aspects as motivation, emotions, sensation and perception, individual differences, the nervous system, learning and personality with a view of understanding behavior.

PSYC 100H: 3 s.h.**Hnrs:General Psychology (G3)**

Hnrs:General Psychology

PSYC 179: 3 s.h.**Experimental**

Experimental

PSYC 205: 3 s.h.**Psychology Misconceptions (G3, W)**

This course will provide an introduction to some of the most popular and persistent misconceptions in Psychology. These misconceptions will cut across sub-disciplines within Psychology, to include clinical, cognitive, and social psychology, as a few examples. The origin as of these myths will be explored, as well as how they are seen today in the popular media, in practice, in education, and in research domains. The implications of the myths will also be considered. The course will also address how to effectively combat these myths. Prerequisites: PSYC 100 and ENGL 110

PSYC 211: 4 s.h.**Principles of Statistics and Experimental Design 1 (W)**

An introduction to research methods and design and to statistical analysis of psychological data. 3 hrs. lec., 2 hrs. lab. Prereq: ENGL 110, PSYC 100 and MATH 101, 105, 204 or 130 with a minimum grade of C- or math placement into MATH 130 or above.

PSYC 212: 4 s.h.**Principles of Statistics and Experimental Design 2**

A study of standard experimental designs and statistical procedures widely used in psychological research. 3 hrs. lec., 2 hrs. lab. Prereq: PSYC 211 with a grade of C- or higher and MATH 130 with a grade of C- or higher.

PSYC 215: 3 s.h.**Intro to Physiological Psychology**

Serves as an introduction to the nervous system in relation to cognition and behavior. It will begin at the cellular level, building up to the systems level. Offered fall, spring. Prereq: BPE 100 or BIO 100 or 101 and PSYC 100.

PSYC 216: 3 s.h.**Intro Learn Beh Analysis**

This course provides an introduction to the field of Behavior Analysis, and covers the basic principles of conditioning, learning, and behavior change derived from the experimental literature. Topics include an introduction to the philosophy of Radical Behaviorism, historical development of the field, single-subject experimental design and data analysis, and principles of respondent and operant conditioning. Prereq: PSYC 100

PSYC 227: 3 s.h.**Development of the Child and Adolescent (G3)**

A study of the theory and research pertaining to the growth, development and behavior of children through adolescence. Prereq: PSYC 100. No course credit given if credit earned for separate course in child psychology or adolescent psychology. No credit given if credit earned for PSYC 228. PSYC Majors may only count one of PSYC 227, 228 or 229 as a core elective.

PSYC 227H: 3 s.h.**Hnrs:Devel Child and Adolescnt (G3, W)**

Hnrs:Devel Child and Adolescnt

PSYC 228: 3 s.h.**Life Span Human Development (G3)**

A focus upon the major stages of human development, beginning with infancy and continuing through the developmental changes of childhood, adolescence and adulthood through to old age and death. Cognitive and psychosocial aspects of human development are emphasized. Offered Periodically. Prereq: ENGL 110 and PSYC 100. No credit given if credit earned for PSYC 227 or 229. PSYC Majors may only count one of PSYC 227, 228 or 229 as a core elective.

PSYC 229: 3 s.h.**The Adult Years (G3)**

An examination of the years from young adulthood to retirement. Focuses on intimate relationships, family, parenting and other enduring commitments. Offered in spring. Prereq: PSYC 100. No credit given if credit earned for PSYC 228. PSYC Majors may only count one of PSYC 227, 228 or 229 as a core elective.

PSYC 234: 3 s.h.**Human Relations (G3)**

An examination of human interactions, both historically and currently, in diverse structures (e.g., family, social, educational, political, economic, etc.). Course content targets increased awareness and understanding of values, traditions and rites of dominant and minority groups and their effect upon interpersonal and intergroup relations. Offered periodically.

PSYC 246: 3 s.h.**Evolutionary Psychology**

Reviews evolutionary theory, surveys research and, most importantly, explains how evolutionary psychology can be applied to disciplines with and beyond the field of psychology. Offered periodically. Prereq: BPE 100 or BIOL 100 or 101 and PSYC 211.

PSYC 256: 3 s.h.**Psychology Human Adjustment (G3)**

An examination of factors that shape personal and social behavior, with a focus on basic issues, problems and therapies as they relate to personal adjustment. Offered in fall, spring. Prereq: ENGL 110 and PSYC 100.

PSYC 256H: 3 s.h.**Hon: Psych Human Adjustment (G3)****PSYC 279: 3 s.h.****Experimental**

Experimental

PSYC 300: 3-12 s.h.**Co-Op Ed Experience in Psyc**

Cooperative Education in Psychology

PSYC 311: 3 s.h.**Psychology of Drug Addiction (G3, W)**

An investigation of the problems associated with drug addiction. Evaluations of opiates, stimulants, barbiturates, depressants, hallucinogens, marijuana and alcohol, with consideration of the effects of these drugs on the individual. Offered in fall, spring. Prereq: ENGL 110 and PSYC 227 or 228 or 229 or 234.

PSYC 311H: 3 s.h.**H:Psychology of Drug Addiction (G3, W)****PSYC 314: 4 s.h.****Adv. Lab Cognitive Psychology**

A laboratory course designed to examine the nature of human memory, perception and thought, and to provide an introduction to the techniques used to study these phenomena. 3 hrs. lec., 2 hrs. lab. Offered annually. Prereq: C- or higher in PSYC 211, 212 and 215.

PSYC 315: 4 s.h.**Adv Lab Sensation & Perception**

A laboratory course designed to develop an understanding of the models and theories of the sensory and perceptual systems. 3 hrs. lec., 2 hrs. lab. Offered in fall, spring. Prereq: C- or higher in PSYC 211, 212 and 215.

PSYC 316: 4 s.h.**Adv Lab Learn Beh Analysis**

A theoretical laboratory course designed to investigate and apply the concepts of learning and motivation to both human and animal behavior. 3 hrs. lec., 2 hrs. lab. Offered annually. Prereq: C- or higher in PSYC 211, 212 and 216.

PSYC 317: 3 s.h.**Social Psychology**

A review of the principles of social psychology derived from experimental study. Offered in spring. Offered in spring. Prereq: PSYC 100. PSYC 211 recommended.

PSYC 317H: 3 s.h.**HNRS: Social Psychology**

PSYC 318: 3 s.h.**Psychology of Racism (D, P)**

Examination of individual and institutional racism in all its aspects, with an emphasis on the various psychological explanatory theories and supporting research as well as the various techniques for alleviating this problem. Additional overview of resultant effects on the victims. Prereq: COMM 100, ENGL 110, PSYC 100 and junior status.

PSYC 318H: 3 s.h.**H:Psychology of Racism (D, P)**

Honors Psychology of Racism

PSYC 325: 3 s.h.**Happiness and Well-Being (D, P)**

This course will examine the constructs of happiness and well-being across multiple variables such as culture, environment, spirituality, and personal factors. Common myths and misconceptions will also be evaluated. Students will leave the course with a greater understanding of the science behind the constructs of happiness and well-being as well as strategies to apply in their own pursuit of living a fulfilling life. Junior status.

PSYC 325H: 3 s.h.**Happiness and Well-Being (D, P)**

Honors Happiness and Well-Being

PSYC 326: 3 s.h.**Human-Animal Bond**

The course will introduce students to the interaction between human and animals with emphasis on the bond between people and their pets. The course will provide an overview of the social, emotional, and psychological implications of pet ownership including attachment and pet loss. The use of companion animals in education, healthcare and clinical settings will be covered as well as the connection between animal maltreatment and interpersonal violence. A service learning project involving contact with companion animals is required. Prereq: PSYC 100 and PSYC 211

PSYC 327: 4 s.h.**Adv Lab in Developmental Science**

Examines advanced topics in child and adolescent development in depth through the application of experimental and nonexperimental research approaches and through critical reading of the research literature. 3 hrs. lec., 2 hrs. lab. Offered annually. Prereq: C- or higher in PSYC 211, 212 and 227 or 228. Submission of satisfactory FBI, Act 34/151 clearances required prior to the start of the course, but not for registration.

PSYC 328: 3 s.h.**Psychology and Religion (P)**

An exploration of psychological and religious questions, issues and processes in the search to give meaning to one's personal and shared journey. Prereq: COMM 100, ENGL 110, PSYC 100 and junior status.

PSYC 329: 3 s.h.**Industrial Psychology (G3, W)**

A study of research and applications of psychology to the work setting. Knowledge of the psychological processes of learning, motivation, perception and assessment is used to analyze selection, training, work design and performance. Offered annually. Prereq: ENGL 110 and PSYC 100 and MATH 130, 235 or PSYC 211.

PSYC 329H: 3 s.h.**Hon: Industrial Psychology (G3, W)****PSYC 335: 3 s.h.****Personality Theory (G3)**

An introduction to historic and contemporary theories of the human personality. Offered in fall, spring. Prereq: PSYC 100.

PSYC 335H: 3 s.h.**H:Personality Theory (G3)****PSYC 337: 3 s.h.****Abnormal Psychology (G3, W)**

A comprehensive study of the etiology, characteristics and treatment in the categories of abnormal behavioral manifestation. Offered in fall, spring. Prereq: ENGL 110 and PSYC 100.

PSYC 337H: 3 s.h.**H:Abnormal Psychology (G3, W)****PSYC 346: 3 s.h.****Applied Behavior Analysis**

An examination of theory, research and techniques related to the applied behavior analysis, with special emphasis placed on the application in a variety of settings (e.g., family, school and industry). Prereq: PSYC 100.

PSYC 346H: 3 s.h.**H: Applied Behavior Analysis**

Honors Applied Behavioral Analysis.

PSYC 350: 3 s.h.**Cognitive Science (P)**

Basic introduction to cognitive science. Reviews attempts to understand cognition using insights from psychology, artificial intelligence, philosophy, linguistics and the neurosciences. Examines the synthesis of those attempts in the emergent field of cognitive science. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

PSYC 350H: 3 s.h.**H: Cognitive Science (P)****PSYC 356: 3 s.h.****Health Psychology**

A review of research and theory linking psychological factors to health. Discussion of psychosocial aspects of health behavior, pain, stress and the impact on biological systems. Evaluation of psychological and behavior interventions for health behavior change and chronic illness. Offered in fall. Prereq: PSYC 100 and PSYC 227 or 228 or 229 or 234 or 256.

PSYC 357: 3 s.h.**Neuropsychology**

This survey course will provide a thoughtful and comprehensive introduction to the field of human neuropsychology, including the history, methods, and logic of neuropsychological investigations. Prereq: BIOL 100 or BIOL 101 and PSYC 211.

PSYC 357H: 3 s.h.**Hon: Neuropsychology****PSYC 365: 3 s.h.****Human Memory**

This survey course will provide a scientific introduction to human memory. The structure and processes of human memory will be covered. There will be consideration of the current and past research, as well as models on memory. Prereq: BIOL 100 or 101 and PSYC 211.

PSYC 379: 1-4 s.h.**Experimental**

Experimental

PSYC 400: 3-12 s.h.**Co-Op Ed Experience in Psyc**

Cooperative Education in Psychology

PSYC 403: 3 s.h.**Family Systems**

An investigation of the impact of the multigenerational family system on the individual. Assessment of functional and dysfunctional family systems. Emphasis upon theorists and their orientations and intervention strategies. Offered periodically. Prereq: PSYC 100 and junior or senior standing.

PSYC 415: 3 s.h.**Advanced Physiological Psych**

A systematic examination of the nervous and sensory systems and their regulation of human behavior. May not be used in place of PSYC 314, 315 or 316 to fulfill the advanced laboratory requirement. Offered Periodically. Prereq: PSYC 100 and one course in biology. Chemistry helpful. Junior or senior standing.

PSYC 417: 3 s.h.**Tests and Measurements**

An introduction to the basic principles of psychological testing and measurement. Focus is upon issues in test construction and design, evaluations of psychometric properties and applications of tests in various fields of psychology. Offered in fall or spring. Prereq: PSYC 211 or permission of instructor.

PSYC 427: 3 s.h.**Childhood Disorders**

An in-depth look at major childhood psychological disorders. Diagnostic criteria, etiology and developmental progression presented. Introduction to diagnostic assessment techniques and commonly used interventions. Offered annually. Prereq: PSYC 100 and PSYC 227 or 228, junior/senior status.

PSYC 427H: 3 s.h.**Hon: Childhood Disorders****PSYC 447: 3 s.h.****Counseling Strategies**

An introduction to the process and practice of counseling. Emphasis is placed on learning counseling theories and on counseling skills. Offered in fall, spring. Prereq: PSYC 100. Junior or Senior status.

PSYC 447H: 3 s.h.**Hon: Counseling Strategies****PSYC 454: 3 s.h.****History and Systems of Psych**

Study of the development of psychology from a branch of philosophy to a modern science. Offered periodically. Prereq: PSYC 100 and junior or senior standing. Must have earned 75 credits and be enrolled/have taken the advanced lab to count for capstone requirement.

PSYC 455: 1-3 s.h.**Seminar in Psychology**

An advanced course devoted to critical analysis of student and professional research using staff consultant leadership. Offered periodically. Prereq: junior/senior psychology majors only and permission of instructor.

PSYC 462: 3 s.h.**Art, Music and Written Word (P)**

Study of psychological processes involved in the production and experience of music, art and literature coupled with a review of psychological theories of human creativity. Key principles within the domain of psychology will be illustrated and explored through the study of the works of artists, musicians and writers. Offered annually. Prereq: PSYC 100, COMM 100, ENGL 110 and junior status. PSYC 335 recommended.

PSYC 462H: 3 s.h.**Hon: Art, Music, Written Wrld (P)****PSYC 479: 1-4 s.h.****Experimental**

Experimental

PSYC 483: 3 s.h.**Applied Ethology**

An introduction to applied animal behavior, including (1) the behavior of companion animals, animals in zoos & aquaria, animals in labs, and animals in agriculture/aquaculture; (2) animal welfare, (3) ethical issues in animal use, (4) methods of training captive animals, and (5) career options and certifications in animal behavior. 3 hrs lecture. Offered periodically. Prereq: PSYC 316 or BIOL 385; PSYC 300 or BIOL 300 or PSYC 495; Senior standing or permission of instructor. Students cannot also earn credit in BIOL 483.

PSYC 489: 1-4 s.h.**Honors Course**

For the definition of departmental honors and eligibility, refer to the Academic Policies section of this catalog.

PSYC 490: 1 s.h.**Honors Seminar**

Examination and discussion of current research issues in psychology. May be taken a maximum of three times. Enrollment limited to students with at least 45 s.h. who are applying to the psychology department honors program and to those already admitted to that program. Offered in fall, spring. Prereq: permission of instructor.

PSYC 495: 1-6 s.h.**Directed Projects in Psych**

Supervised field experience involving the application of psychological principles. Junior or senior standing. Offered in fall, spring. Prereq: permission of instructor. Insurance and recent clearances (Act 34/ Act 151/FBI clearances and TB test results) may be required depending on the setting.

PSYC 496: 1-4 s.h.**Topics In Psychology**

Detailed investigation of a topic of current research interest. Topic to be announced each time course is offered. Credit and meeting hours variable, depending on topic offered. May be taken more than once for credit as topic varies. Offered periodically. Prereq: junior or senior standing and permission of instructor.

PSYC 498: 1-4 s.h.**Independent Study in Psych**

For further information on independent study, see the Special Academic Opportunities section of this catalog.

PSYC 499: 1-4 s.h.**Departmental Honors**

For the definition of departmental honors and eligibility, refer to the Academic Policies section of this catalog.

SOCY 101: 3 s.h.**Introduction to Sociology (G3)**

Introduction to the scientific study of human groups, organizations and societies. Examination of major sociological questions and approaches to studying them.

SOCY 101H: 3 s.h.**Introduction to Sociology (G3)**

Introduction to the scientific study of human groups, organizations and societies. Examination of major sociological questions and approaches to studying them.

SOCY 179: 1-3 s.h.**Experimental**

Experimental

SOCY 210: 3 s.h.**Sociology of the Family (G3)**

The family as a social institution. Topics include the family in mass society, diverse family forms, human sexuality, typologies of love, mate selection, husband-wife interaction, parent-child interaction, family disorganization and American ethnic families. Specific topics may vary.

SOCY 211: 3 s.h.**Social Problems (G3, W)**

A sociological examination of problem areas or human concerns such as poverty, labor issues, substance abuse, domestic violence, crime and justice, health, the environment, discrimination and globalization. Topics may vary. Prereq: ENGL 110.

SOCY 211H: 3 s.h.**H:Social Problems (G3, W)**

H:Social Problems

SOCY 216: 3 s.h.**Human Population (G3)**

Analysis of population processes such as fertility, mortality, composition, distribution and migration patterns; relationship of population processes to social, economic and political development; effects of status differences; trends in population change. Offered periodically.

SOCY 230: 3 s.h.**Criminology (G3, W)**

The nature and causes of criminal behavior and the types of social response to law violation. Offered in fall, spring. Prereq: SOCY 101, ENGL 110.

SOCY 230H: 3 s.h.**Hon: Criminology (G3, W)****SOCY 300: 3-12 s.h.****Co-Op Ed Experience in Soc**

Co-Op Ed Experience in Soc

SOCY 301: 3 s.h.**Craft of Sociology (W)**

Exploration of the technical and analytical skills of sociology, including locating sociological resources, citing sociological materials, writing literature reviews and understanding links between sociological knowledge and public policy. Prerequisites: SOCY 101, ENGL 110 and 6 credits of SOCY courses.

SOCY 302: 4 s.h.**Social Statistics**

Emphasis on learning and presenting findings from applied statistical techniques, including frequency tables and graphs, contingency tables, measures of central tendency and dispersion, hypothesis testing, confidence intervals, analysis of variance, correlation, and linear regression (bivariate and multiple). SPSS software package used. Offered in fall, spring. Prereq: C- or higher in Math 130 and 9 s.h. in sociology/ anthropology.

SOCY 303: 3 s.h.**Sociological Theory**

Examination of classical and contemporary theoretical traditions; relevance of sociology to everyday life; works of selected theorists such as Durkheim, Marx, Weber, Merton. Offered fall, spring. Prereq: SOCY 101 and 9 s.h. of sociology at the 200 level or higher.

SOCY 305: 3 s.h.**Social Research Methods (W)**

Overview of major research methods: survey analysis, interviewing, participant observation, content analysis and experimental design. Each student designs and completes a research project. Offered fall, spring. Prereq: C- or higher in ENGL 110, SOCY 301, SOCY 303 and SOCY 302.

SOCY 307: 3 s.h.**African-American Social Thought (G3)**

Examination of the development of African-American social theory through the history of the American republic. Looks at the relationship between African-American social thought, civil rights movements and the larger Afro-Caribbean diaspora. Offered infrequently. Prereq: 9 s.h. in African- American Studies or SOCY 101 and 9 s.h. in sociology (SOCY 303 recommended) or permission of instructor.

SOCY 308: 3 s.h.**Soc of Afr-Amer and Lat Educ (D)**

Social and historical analysis of the secondary and postsecondary experiences of African-American and Latino/a youth in the U.S. informed by critical race, feminist and stratification theories. Offered periodically. Prereq: SOCY 101 or LATS 201.

SOCY 310: 3 s.h.**Sociology of Religion**

Sociological understanding and interpreting religious phenomena including insight regarding the place of religion in society; the functional and conflict orientation to religion; religion and the individual; institutionalization of religion; religion and social change; and the secularization of religion. Offered periodically.

SOCY 313: 3 s.h.**Sociology of Disaster (G3)**

Behavioral and organizational response to environmental hazards and disasters. Case studies of major natural disasters and hazardous-materials incidents illustrate individual, group and societal challenges faced in such events. Issues include building a disaster-resistant community, the impact of the media, and governmental successes and failures. Offered annually. Prereq: SOCY 101 or SOCY 211. A required course for the EHEM minor.

SOCY 313H: 3 s.h.**H: Sociology of Disaster (G3)****SOCY 315: 3 s.h.****Race and Ethnic Relations (G3)**

Study of racial and ethnic relations, modes of adaptation of minorities and cross-cultural examinations of dominant-minority relations. Offered annually. Prereq: 3 s.h. of sociology or junior/senior status.

SOCY 316: 3 s.h.**Social Psychology (G3, W)**

Introduction to sociological social psychology; how social interactions are created, become patterned and susceptible to change; how society is structured through social interaction; and how social identities are formed. Specific topics may vary. Offered periodically. Prereq: ENGL 110, 3 s.h. of sociology or junior/senior status.

SOCY 317: 3 s.h.**Medical Sociology (G3)**

Social and cultural factors in health and illness; social organization of the medical care system; structural and interactional aspects of healthcare. Prereq: 3 s.h. sociology or junior/senior status. Offered periodically.

SOCY 318: 3 s.h.**Soc Of Complex Organizations**

Social-interaction processes in business and industry; nature and effects of complex industrial organization; interrelationships among industry and other social subsystems. Offered periodically. Prereq: 3 s.h. sociology or junior/senior status.

SOCY 319: 3 s.h.**Social Stratification (G3)**

The development of social inequality by race, ethnicity, class, gender and nationality. The social construction of race and gender; various theories of class distribution. Inequality in education, housing and the workplace are discussed. Global instances of inequalities are also discussed. Offered periodically. Prereq: 3 s.h. of sociology and junior/senior status.

SOCY 320: 3 s.h.**Sociology of Education (G3)**

Analysis of education as a social institution and its relationship to other institutions; the roles of educator, administrator, student and parent; implications of subcultures, social stratification and social change. Offered infrequently.

SOCY 329: 1-6 s.h.**Topics in Sociology**

Offered periodically.

SOCY 329H: 1-6 s.h.**Hnrs: Topics in Sociology****SOCY 331: 3 s.h.****Sociology of Policing & Courts (G3)**

Overview of the American system for the administration of justice focused on the apprehension, prosecution and adjudication of criminal defendants. Offered in fall. Prereq: SOCY 101, 230.

SOCY 332: 3 s.h.**Modern Corrections (G3)**

Contemporary American responses to crime. Concentrates on the origins, nature, functions and limitations of American correctional modalities. Offered in spring. Prereq: SOCY 101, 230.

SOCY 332H: 3 s.h.**H:Modern Corrections (G3)****SOCY 334: 3 s.h.****Juvenile Delinquency (G3)**

Nature and extent of juvenile crime; theories of causation; techniques of control and prevention. Offered annually. Prereq: SOCY 101, 230.

SOCY 335: 3 s.h.**Ethics in Criminal Justice**

Examines numerous ethical theories and their application to policing, courts and corrections in the United States. A global analysis of current research, theories and case studies on human trafficking will also be a focus. Prerequisites: SOCY 101 and SOCY 230.

SOCY 335H: 3 s.h.**Hon: Ethics in Crim Justice****SOCY 337: 3 s.h.****Gender and the Law (G3)**

Analyze how the courts and the law construct gender and how these social constructions of gender in the law impact individuals, families, groups, and institutions. Examine the lives of women & girls as offenders, prisoners, victims/survivors and workers in the criminal justice system from a variety of perspectives and disciplines. Analyze how the intersections of sexism, racism, heterosexism, and classism impact the lives of individuals and communities in regard to criminality.

SOCY 337H: 3 s.h.**Hon: Gender and the Law (G3)****SOCY 338: 3 s.h.****Sociology of Deviance**

Deviance as a social phenomenon. Discusses how definitions of deviance have changed over time, how people become labeled "deviant" and the utility of various theories of deviance. Offered annually. Prereq: SOCY 101.

SOCY 338H: 3 s.h.**H:Sociology of Deviance****SOCY 339: 3 s.h.****Topics In Criminology**

The nature, extent, origins and possible "solutions" to select problems in contemporary criminology. Offered periodically. Prereq: SOCY 101 and 230 or permission of instructor.

SOCY 339H: 3 s.h.**Hon: Topics in Criminology****SOCY 379: 1-3 s.h.****Experimental**

Experimental

SOCY 400: 3-12 s.h.**Co-Op Ed Experience in Soc**

Co-Op Ed Experience in Soc

SOCY 441: 3 s.h.**Urban Society**

Historical and postmodern analysis of urban development, in particular the impact of demographic, political and socioeconomic structural changes on the social fabric of U.S. metropolitan cities. Topics include inner-city life and culture, race, gender, class relations and policy implications. Offered periodically. Prereq: SOCY 101.

SOCY 441H: 3 s.h.**Hnrs: Urban Society****SOCY 448: 3 s.h.****Seminar In Sociology**

Research and group discussion for advanced students on various topics of interest. A total of 6 s.h. may be taken. Offered in fall, spring. Prereq: permission of instructor.

SOCY 479: 3 s.h.**Experimental**

Experimental

SOCY 489: 1-4 s.h.

Honors Course

Two to four semesters of supervised research through independent projects. Prereq: 3.0 GPA and recommendation by a faculty mentor. For further information, see the Special Academic Opportunities section.

SOCY 498: 1-6 s.h.

Independent Study in Sociology

For further information, see the Special Academic Opportunities section. Prereq: 3.0 GPA and permission of faculty member.

SOCY 499: 1-4 s.h.

Departmental Honors

Two to four semesters of supervised research through independent projects. Prereq: 3.0 GPA and recommendation by a faculty mentor. For further information, see the Special Academic Opportunities section.

SOCY 500: 3-12 s.h.

Co-Op Ed Experience in Soc

Co-Op Ed Experience in Soc

Social Studies, B.S.Ed.

Students wishing to teach anthropology, psychology or sociology in the secondary schools are required to complete the B.S.Ed. As part of that program, the students should select a number of courses in anthropology, sociology and psychology to prepare for the certification exams in the social sciences. Additional courses beyond the social studies program may be necessary. Upon receiving certification, students can take the test for Social Sciences Certification, which will allow them to teach anthropology, psychology and sociology.

The BSE Social Studies degree is designed for students planning to teach economics, geography, government, history, anthropology, psychology, or sociology in Grades 7-12. The program consists of three blocks of requirements: 45 hours of specific courses that make up the core of the four major disciplines of Social Studies (economics, geography, government, and history); 15 hours of electives; and 33 hours of education courses.

The curriculum for Social Studies, BSE is the same regardless of the department of advisement. However, students will have to select whether to be advised in the History, Government, Economics or Geography department for advisement in the Social Studies major.

Major in Social Studies History, BSE

Code	Title	Hours
MAJOR REQUIRED CORE FOUNDATION		
ECON 100	Introductory Economics	3
ECON 203	Introduction to World Economy	3
GEOG 120	Human Geography	3
Geography Course - Choose 1 of the following:		3
GEOG 141	World Regional Geography	
GEOG 226	Political Geography	
GEOG 248	Geography of Africa	
GEOG 342	Europe	
GEOG 343	Latin America & the Caribbean	
GEOG 344	North America	
GEOG 281	Maps and GIS	3
GOVT 111	Introduction to American Government	3
GOVT 221	Introduction to Comparative Political Systems	3

GOVT 251	Introduction to Global Politics	3
History Electives - Choose 2 of the following:		6
HIST 101	Europe and the World 1350-1789	
HIST 102	Europe and World 1789-Present	
HIST 206	World Culture & Religion to 1500	
HIST 280	Pre-Colonial Africa	
HIST 105	History Matters	3
HIST 106	Contours of US History	3
HIST 205	The Art & Craft of History	3
PSYC 100	General Psychology	3
SOCY 210	Sociology of the Family	3
Total Hours		45

BSE SST Concentration Courses

Code	Title	Hours
Due to the interdisciplinary nature of the social studies major, please work closely with your advisor to select courses appropriate to your plan. You must take 15 total credits to complete the concentration.		
Geography		0
You may take up to 9 credits of Geography (GEOG) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Government		0
You may take up to 9 credits of Government (GOVT) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
History		0
You may take up to 9 credits of History (HIST) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Anthropology		0
You may take up to 6 credits of Anthropology (ANTH) courses toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Psychology		0
You may take up to 6 credits of Psychology (PSYC) at the 200-level or higher toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Sociology		0
You may take up to 6 credits of Sociology (SOCY) courses toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Total Hours		0

Professional Education

Code	Title	Hours
EDUCATIONAL FOUNDATIONS		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3

REQUIRED EDUCATION COURSES

EDSE 321	Issues in Secondary Education	3
EDFN 330	Instructional Technology, Design & Assessment	3
EDSE 433	Teaching of Secondary Social Studies	3

ACCOMMODATIONS AND ADAPTATIONS

EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3

STUDENT TEACHING

EDSE 471	Student Teaching Seminar	3
EDSS 461	Student Teaching in Soc Sci	9

Total Hours **33**

Advanced Professional Studies, BSE

Code	Title	Hours
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*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.

APS REQUIREMENTS

English Composition - Choose 1 of the following: 3

ENGL 110	English Composition
ENGL 110H	Hnrs:English Composition

English Literature - Choose 1 of the following: 3

ENGL 230	Introduction to Literature
ENGL 231	World Literature 1
ENGL 232	World Literature 2
ENGL 233	Early British Literature
ENGL 234	Later British Literature
ENGL 235	American Literary Tradition I
ENGL 236	American Literary Tradition II
ENGL 241H	H:Explorations in World Lit
ENGL 242	Reading Our World:
ENGL 292	Science Fiction
ENGL 333	African-American Literature 1
ENGL 333H	Hnrs:African American Lit 1
ENGL 334	African American Literature 2
ENGL 334H	Hnrs:African American Lit 2
ENGL 336	New Dimensions to World Lit
ENGL 338	Folklore and Literature
ENGL 401	Old Eng Lang and Literature
ENGL 402	Middle Eng Lang and Literature

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211	Foundations Modern Education	6
& EDFN 241	and Psychological Foundations of Teaching	

48 earned (transcript) credit hours are required

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours **12**

Tell School of Music

The Tell School of Music offers three degree programs leading to the baccalaureate degree with a major in music.

The department is cognizant of the desires of many students from all segments of the University to participate in music. Accordingly, both beginning and advanced courses are available to students enrolled in any curriculum. The music department The Tell School of Music also provides the opportunity for student performance and participation in a variety of vocal and instrumental organizations ensembles. Some of these lar organizations are Large ensembles include University Choir, Orchestra, Concert Band, Wind Ensemble, Marching Band, Chorale, Glee Club, Women's Choir, Chamber Orchestra, West African Drum and Dance Ensemble, Jazz Ensembles, Commercial Ensemble, and Gospel Choir. Students can also participate in a variety of small ensembles. and various

other ensembles. A description of these organizations is included in the student handbook.

The Tell School of Music music department also offers a music minor and a dual B.A. degree in music and music education, as well as a dual B.A. degree in music and music industry.

Millersville University is accredited by the National Association of Schools of Music.

the programs

- Certificate in Kodaly (p. 167)
- Certificate in Modern Band Applications (p. 167)
- Certificate in Music Technology in Music Education (p. 167)
- Music Industry, B.S. - Music Management (p. 168)
- Music Industry, B.S. – Live Audio (p. 168)
- Music Industry, B.S. – Music Production (p. 168)
- Music Minor (p. 168)
- Music, B.A. (p. 168)
- Music, B.A. – Performance (p. 169)
- Music, B.S.Ed. (p. 170)

the faculty

Atticks, Barry; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., Elizabethtown College, 1990; M.M., California State University 1996;
Ph.D., The Pennsylvania State University, 2001

Banks, Christine; Professor
College of Arts, Humanities and Social Sciences
B.M., University of Nebraska-Lincoln, 1996; M.M., Florida State University, 1998; D.M.A., University of Nebraska-Lincoln, 2005

Cernuto, Joseph; Assistant Professor
College of Arts, Humanities and Social Sciences
B.M., University of Florida, 2003; M.M., Ibid., 2005; D.M.A., University of Iowa, 2018

Darmiento, Madeleine; Assistant Professor
College of Arts, Humanities and Social Sciences
B.A., Yale University, 1980; M.M., New England Conservatory of Music, 1982; D.M., SUNY at Stony Brook, 1987

Estes, Dain; Associate Professor
College of Arts, Humanities and Social Sciences
B.G.S., University of Kansas, 2008; J.D., University of Missouri-Kansas City, 2011

Gemmell, Jeffrey; Assistant Professor
College of Arts, Humanities and Social Sciences
B.S., Towson University, 1984; M.M., Northwestern University, 1989; D.A., University of Colorado Boulder, 1997

Houlahan, Micheal; Professor
College of Arts, Humanities and Social Sciences
M.M., the Catholic University of America; Ph.D., Ibid., 1989

Jester, Jennifer; Assistant Professor
College of Arts, Humanities and Social Sciences
B.S., Arizona State University, 2001; M.F.A., California Institute for the Arts, 2004; D.M.A., University of California, 2008

Martinez, Brandon; Assistant Professor
College of Arts, Humanities and Social Sciences
B.M., Texas Christian University, 2005; M.M., New England Conservatory, 2008; M.M. New England Conservatory, 2009

Pan, Xun; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., Central Conservatory of Music (China), 1988; M.M., Syracuse University, 1992; D.M.A., Rutgers University, 1996

Tacka, Philip; Professor
College of Arts, Humanities and Social Sciences
B.S., Towson State University, 1971; M.M., Catholic University, 1979; D.M.A., Ibid., 1982

Volchansky, Vera; Associate Professor
College of Arts, Humanities and Social Sciences
B.M., Mercyhurst College, 2000; M.M., Eastman School, 2004; D.M.A., University of Kansas, 2008

the courses

MUSI 100: 3 s.h.

Music and Culture (G1)

A general study of art music, with emphasis on listening to the compositions of Western composers. The development of music, its relationship to the other arts and its cultural influences will be examined. Designed for students with a limited musical background. Offered in fall, spring.

MUSI 103: 3 s.h.

Language of Music (D, G1)

A course designed to develop a keen sensitivity to the language of musical sounds through creating, performing, conducting music and listening with sensitive awareness. The use of a broad range of musical materials, active exploration and personal discovery will lead the student to grasp the nature of the interactions and relationships that bring meaning to music. Language of music is structured to provide the student with a means to developing greater awareness and accuracy in musical reading and hearing. Designed for students with little or no academic musical background. Offered in fall, spring.

MUSI 103H: 3 s.h.

Hnrs:Language of Music (G1)

Hnrs:Language of Music

MUSI 104: 3 s.h.

Language of Music 2 (G1)

Provides in-depth coverage of the fundamentals of music. Music materials include Western and non-Western music. This is a performance-based class structured to provide the student with a means to develop greater awareness and accuracy in musical reading, writing and hearing. MUSI 104 fulfills MUSI 103 requirements. Offered in fall.

MUSI 108: 0.5 s.h.

Pri Ins 1:

(By selection of the staff.) Private lessons in piano, organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 109: 0.5 s.h.

Pri Ins 2:

(By selection of the staff.) Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 112: 3 s.h.**Kodaly Solfege, Harmony and Analysis 1**

Provides an introduction to the structures and aesthetics of common-practice harmony for music majors and minors. Review of elements of pitch and rhythm and progresses to the introduction of triadic harmony, as well as figured bass realization. This course will investigate the harmonization of melodies and harmonic progressions through a wide range of activities. Musical materials to be studied will include selected multicultural folk music and art music examples. The study of music will be done through singing, ear training, improvisation, composition, analyses and keyboard performances. Offered in spring.

MUSI 124: .5 s.h.**Commercial Music Lab Band**

The goal of the commercial music lab band is to enable students to improve their ability to rehearse, arrange, perform and record commercial popular music repertoire in a group setting. Song selection, arrangement duties, individual rehearsal schedules and recording goals will be arranged at the beginning of each semester. At least one performance will be required each semester.

MUSI 126: .5 s.h.**Marauder Men's Glee Club**

A traditional collegiate men's choral ensemble. Focuses on choral repertoire, ensemble vocal technique, performance practice, and artistry through singing in a men's chorus setting.

MUSI 128: .5 s.h.**Marching Band Camp**

The study of music literature, ensemble technique and performance practice through musical performance in marching band. Offered in fall.

MUSI 129: .5 s.h.**Marching Band**

The study of music literature, ensemble technique and performance practice through musical performance in marching band. Offered in fall.

MUSI 131: 2 s.h.**Class Piano 1**

Practical keyboard facility through technique, sight reading, improvisation, harmonization and composition. Multicultural folk music, art songs and original piano compositions are included. Solo, duet and ensemble literature are studied and performed. This course is designed to be taken concurrently with MUSI 112. Music majors and minors only. Offered in spring.

MUSI 134: 1,2 s.h.**Maj Perf 1:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 135: 1,2 s.h.**Maj Perf 2:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 140: 3 s.h.**Singing Voice in Musical Theatre (G1)**

Trains students in good vocal technique in order to handle the many vocal challenges of musical theatre. Ranging from singing in different musical styles, singing while performing demanding dance routines, dealing with amplification, the switch from spoken to sung characterization, the health care of the voice, development of stamina to perform eight shows a week for a year or more and basic theory in order to read and learn music. Offered in the summer.

MUSI 141: 1 s.h.**Vocal Techniques**

A basic study of the technique of singing to adequately train the voice for practical and aesthetic reasons. Development of range quality, projection, control and the fundamentals of correct breathing is pursued through the use of suitable solo and choral literature. 2 hrs. lab. Enrollment limited to music education majors or permission of instructor. Offered in fall.

MUSI 151: 1 s.h.**Strings Techniques**

Strings I, Violin, Viola. Open to music majors only or permission of instructor.

MUSI 152: 1 s.h.**Woodwind Techniques**

Woodwinds I. Open to music majors only or permission of instructor.

MUSI 153: 1 s.h.**Percussion Techniques**

Percussion I. Open to music majors only or permission of instructor.

MUSI 154: 1,2 s.h.**Major Performance 1:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 155: 1,2 s.h.**Major Performance 2:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 156: 1 s.h.**Brass Techniques**

Brass I. Open to music majors only or permission of instructor.

MUSI 190: 3 s.h.**Music Industry 1**

Music Industry 1 is the introductory music business course for all music industry majors. Students learn basic terminology used in the field and are introduced to fundamentals of the music industry, copyright, royalties, contracts and networking as well as guest lecturers.

MUSI 193: 3 s.h.**Computer Applications in Music Production 1**

This introductory course is designed to develop an understanding of MIDI, sequencing, and digital audio through the integration of in-class demonstrations, lectures, and hands-on projects and activities. This course covers topics such as creating, recording, and editing MIDI sequences and digital audio data. The course will also address topics such as programming, arranging, composing, and mixing in the MIDI environment.

MUSI 202: 3 s.h.**American Broadway Musicals (G1)**

Examines the history, philosophy, music-theatre, and significance of the American Broadway musical. Will give students several opportunities to observe, discuss and report on American Broadway musical productions.

MUSI 203: 3 s.h.**Understanding Language of Music (D, G1)**

The course begins with the elements of rhythm and pitch and progresses to the introduction of scales, intervals, and tonality; notation of rhythm and meter, rudiments of harmony; and the concept of musical structure and form. Sight singing and ear training are pursued concurrently with keyboard and written theory. (This is a more in-depth course than Music 103 and the focus will include more complex repertoire and harmonic understanding). Musical materials will include selected multicultural folk music and art music examples. The use of a broad range of individualized musical materials, active exploration, and personal discovery will lead the student to grasp the nature of the interactions and relationships that bring meaning to music. Students will memorize and perform a body of folk songs representing the Anglo-American, African-American, Israeli, Hungarian, Romanian, French, Czech, Scottish, Hispanic, African, and Russian cultures or traditions. Linguistically, these songs characterize and embody the basic rhythmic structure, syntax, and melodic features of the culture, country, and/or tradition from which they emulate. Another significant outcome is to develop a community of learners with a deeper understanding of and sensitivity to cultural diversity demonstrated through research, readings (Smithsonian Folkways Collection) class discussions and written presentations. Students gain knowledge of the fundamentals of music through the performance of the songs deriving rhythmic and melodic features associated with each country's culture and/or tradition. Classes are structured to integrate academic study, written work, performance, and songs to develop a deeper and richer understanding of our shared history and cultural diversity. In this class, performance is a necessary condition for understanding; collaborative learning is fostered through group singing and performance. The philosophic approach that I use emphasizes the importance of the voice as the primary instrument. The value of singing for all ages and the use of traditional songs serves to broaden the cultural-studies approach to music. Three features are critical to this approach: 1) Students develop music skills by immersion, imitation, and sequential music reading; 2) they weave historical, cultural, and performance constructs together into a whole in written assignments; and 3) the course will facilitate opportunities for creative expression, analysis, and reflection.

MUSI 207: 3 s.h.**Love Songs Through the Ages (D, G1)**

Exploration of sex positive themes in vocal music. This course addresses diversity through a discussion of sex positivity and how this idea relates to feminism and topics within the Lesbian, Gay, Bisexual, Transgender, and Questioning (LGBTQ) community; and with other related topics such as marriage, monogamy, courtship rituals, and the like. While this is a music course and thus provides specific information about how music achieves its expressive ends, it also provides a broad perspective on relevant human issues and how music not only reflects but also helps to transmit and to shape human values. The course will examine the historical and environmental factors that underlie differences in sexual mores; examine the potential global, regional, and/or local factors that underlie these differences; engage students in articulating their personal worldview through oral and written communication; foster information literacy as it relates to diversity; and provide an academic structure for students to engage with peoples of diverse sexual practices and beliefs. The culture of embracing (or at least accepting) alternative sexual mores is a worldview that reflects beliefs, customs, values, politics, and experiences as shaped by age, economics, education, gender, geography, language, nationality, occupation, physical ability, race and ethnicity, religious affiliation, and/or sexual orientation among other factors.

MUSI 208: 0.5 s.h.**Pri Ins 3:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 209: 0.5 s.h.**Pri Ins 4:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 212: 3 s.h.**Kodaly Solfege, Harmony and Analysis 2**

Provides an in-depth coverage of the structures and aesthetics of medieval and renaissance music. Reviews basic triadic progressions in keyboard style, introduces principles of voice leading, nonchord tones, using diatonic common chords. Investigates the harmonization of melodies and harmonic progressions through a wide range of activities. Musical materials will include selected multicultural folk music and art music examples. The study of medieval and renaissance music will be done through singing, ear training, improvisation, composition, analysis and keyboard. Offered in fall. Prereq: C or higher in MUSI 112.

MUSI 220: .5 s.h.**Concert Band**

Music literature, ensemble technique and performance practice through musical performance in concert band. Offered in fall, spring.

MUSI 224: .5 s.h.**Jazz Lab Band**

Music literature, ensemble technique and performance practice through musical performance in jazz lab band. Offered in fall, spring.

MUSI 226: .5 s.h.**University Choir**

Music literature, ensemble technique and performance practice through musical performance in choir. Offered in fall, spring.

MUSI 227: .5 s.h.**Women's Choir**

Music literature, ensemble technique and performance practice through musical performance in women's choir. Offered in fall, spring.

MUSI 231: 2 s.h.**Class Piano 2**

Intermediate course in practical keyboard facility accomplished through technique, sight reading, improvisation, harmonization, composition and analysis. Primary and secondary harmonies are explored in selected multicultural folk songs, art songs and original piano compositions. MUSI 231 is designed to be taken concurrently with MUSI 212. Offered in fall. Prereq: C or higher in MUSI 131. Note: Music students majoring in piano take MUSI 377 instead of this course.

MUSI 234: 1,2 s.h.**Maj Perf 3:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 235: 1,2 s.h.**Maj Perf 4:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 254: 1,2 s.h.**Major Performance 3:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 255: 1,2 s.h.**Major Performance 4:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 263: 3 s.h.**Popular Music (D, G1)**

Musical derivatives and development of pop, jazz and rock styles. Lecture, live and recorded musical demonstration, discussion and analysis. Offered in fall, spring.

MUSI 265: 3 s.h.**Symphonic Music (G1)**

Development of symphonic music from the mid-18th century through the present. Relationships between the symphony and other musical genres. Emphasis on listening and analytical observation. Offered in fall, spring. Prereq: MUSI 100 or 162.

MUSI 267: 3 s.h.**Survey American Music (G1)**

American music from the colonization period to the present. Composers, their works, musical organizations and folk music in relation to historical developments which have shaped America's cultural heritage. Analysis of recorded musical examples is an integral part of this course. Offered in fall, spring. Prereq: MUSI 100 or permission of instructor.

MUSI 280: 3 s.h.**Technology in the Music Classroom**

Students explore the uses of technology and its application as instructional resources and content delivery devices in the modern K-12 music classroom. Topics include applications software, cloud-based software, music hardware and software evaluation, music notation software, sequencing software, MIDI interface devices and technology, recording techniques, and multimedia presentation systems. Students are provided hands-on experiences with hardware and software to develop the skills and competencies required of the professional music educator.

MUSI 290: 3 s.h.**Music Industry 2**

Music Industry 2 provides a comprehensive overview of the mainstream music industry and the for-profit world in of the music business. Students learn advanced copyright issues, the economics of the music industry, digital distribution, music publishing, entrepreneurship, and current business trends in the music industry. Offered every spring. Prereq: MUSI 190.

MUSI 293: 3 s.h.**Computer Applications in Music Production 2**

This course covers recording, editing, mixing and producing music using professional digital audio software and hardware such as ProTools. Students will be utilizing tracks from real recording sessions to gain skills in those areas focusing on vocal, bass, guitar and drum edits and mixing parameters. Students will be required to complete numerous technical and creative projects, applying their skills learned in the digital audio environment.

MUSI 294: 3 s.h.**Live Audio 1**

This course will explore the technology and techniques necessary to produce concerts in a variety of venues including those on and off campus. Students will take part in all facets of concert production as it relates to music including equipment options, signal flow, signal processing, mixing live shows, and live recording techniques.

MUSI 294H: 3 s.h.**Hon: Live Audio Production****MUSI 295: 3 s.h.****Studio Recording I**

This is an intermediate level course in modern studio recording techniques. Subjects addressed include signal routing, microphone selection & placement, signal processing, session setup, mixing consoles, and live recording issues. Students will learn how to record and mix electric and acoustic guitars, bass, amps and vocals. Students will be required to complete numerous technical and creative projects, applying their skills learned in the modern recording studio.

MUSI 300: 1-15 s.h.**Co-Op Ed Experience in Music**

Co-Op Ed Experience in Music

MUSI 300H: 3-12 s.h.**Hon: Co-Op Ed Exp in Music****MUSI 301: 3 s.h.****Music in Early Childhood (D, G1, W)**

Music in Early Childhood (Pre Kindergarten and Kindergarten) examines music through the lens of the culture(s) of young children, which (though they intersect with adult cultures) are unique, different from adult experiences, and particular to them. The course highlights the musical content of children's songs as well as the music they hear, and the kinds of musical engagements that are particular to young children. The uses, functions, and meanings of music for young children are emphasized. Musical materials to be studied will include selected multicultural folk music, as well as art and commercial music examples. The culture of childhood and the music in the culture of young children is one of the primary focuses of this course.

MUSI 301H: 3 s.h.**Hon: Music in Early Childhood (D, G1, W)****MUSI 304: 3 s.h.****Artist Management**

Artist Management is a focused examination, observation and participation class drawing on all of the facets of creating and operating an artist business model. The class will analyze the many facets of the modern music business and how it can be incorporated into practice. Students will be witness to the day to day operations of artists who record, tour, negotiate, survive and thrive. Students will participate in the discussions and decisions of the day to day operations of artists who are making recordings, marketing them either independently or in conjunction with a record label, touring, licensing music to film/TV, and all the functions of a recording and performance artist's career. Music Industry is a pre-req for this course as students need to have a basic understanding of the business to get the most of this advanced course.

MUSI 308: 0.5 s.h.**Pri Ins 5:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 309: 0.5 s.h.**Pri Ins 6:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 312: 3 s.h.**Kodaly Solfege, Harmony and Analysis 3**

This course provides in-depth coverage of the structures of seventh chords, secondary dominants and modulations and aesthetics of common practice harmony, with particular emphasis on the Classical and Baroque periods. Reviews diatonic progressions. This course investigates the harmonization of melodies and selected harmonic progressions through a wide range of activities. Musical materials will include selected multicultural folk music and art music examples. The study of Baroque and Classical examples of music will be done through ear training, improvisation, composition, analysis and keyboard performance. Offered in spring. Prereq: C or higher in MUSI 212.

MUSI 313: 3 s.h.**Sem in Jazz Thry & Improv**

Basic to intermediate/advanced level jazz theory concepts and improvisation with practical application. Information provided in this course is supplementary for students who wish to teach instrumental music and those pursuing graduate studies or professional careers in instrumental music.

MUSI 315: 1 s.h.**Music Composition**

The art of music composition through examination of the creative process, rhythmic manipulation, melodic development, counterpoint and harmonic motivation. Creative composition is an integral part of the course. May be repeated for credit. Offered periodically. Prereq: MUSI 212 or permission of instructor.

MUSI 317: 3 s.h.**The Art of Teaching Elementary Music Kodaly**

This course is designed to prepare students for teaching general music through the integration of multicultural content and practices related to the learner in an elementary school environment. Emphasis is on leading the young learner to understand musical concepts through a variety of behaviors (singing, playing instruments, moving, reading and writing, creating and listening). Also included are issues related to musical literacy development for young students. The course includes a field experience component (observation and teaching) that is intended to allow participants to apply theoretical principles in a practical setting. Offered in spring. Prereq: MUSI 212, C or higher in MUSI 171 or permission of instructor.

MUSI 323: .5 s.h.**Chamber Orchestra**

Music literature, ensemble technique and performance practice through musical performance in chamber ensemble. Offered in fall, spring.

MUSI 324: .5 s.h.**Commercial Music Ensemble**

The goal of the commercial music ensemble is to enable students to improve their ability to rehearse, arrange, perform and record commercial popular music repertoire. Song selection, arrangement duties, individual rehearsal schedules and recording goals will arranged at the beginning of each semester. At least one performance will be required each semester. The Commercial Music Ensemble class roster will be determined by individual audition.

MUSI 330: 3 s.h.**Live Audio 2**

Live Audio 2 will explore advanced concepts in the technology utilized for live sound production. Topics will include electronics, block diagrams, spec sheets, loud speaker design, mixer technologies, amplifiers, situational acoustical design, and more. Students will also take part in all facets of concert production as it relates to live audio.

MUSI 331: 2 s.h.**Class Piano 3**

This course provides in-depth experience in sight-reading technique, keyboard analysis, harmonization, improvisation, transposition, composition and score reading. 1 hr. lec., 2 hrs. lab. MUSI 331 is designed to be taken concurrently with MUSI 312. Offered in spring. Prereq: C or higher in MUSI 231.

MUSI 334: 1,2 s.h.**Maj Perf 5:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 335: 1,2 s.h.**Maj Perf 6:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 336: 1,2 s.h.**Maj Perf 5:**

Includes private study and participation in ensembles. Music majors only. Offered in fall, spring.

MUSI 337: 1,2 s.h.**Maj Perf 6:**

Includes private study and participation in ensembles. Music majors only. Offered in fall, spring.

MUSI 347: 3 s.h.**The Art of Teaching Choral Techniques**

This course provides study and application of materials and techniques for teaching vocal/choral music on the elementary, middle and high school levels. Through the discussion and practical application of strategies and techniques pertaining to vocal instruction, ensemble leadership, and the nature of working with singers of varying ages, genders and abilities, students taking this course will be able to successfully instruct and manage any kind of school choral program.

MUSI 347H: 3 s.h.**Hon: Art of Choral Techniques****MUSI 350: 3 s.h.****The Art of Teaching Modern Band**

Students explore in-depth applications of Modern Band pedagogy and curriculum in the music classroom. Key topics include Modern band instrument practical education, teaching application, composition, improvisation, approximation, scaffolding, and safe space. This series of experiences will be demonstrated through interactive lecture, performance, and group interaction on guitar, bass, drums, keyboards, technology, and vocals. Materials from this course will cover the Little Kids Rock teacher manual and songbooks. In addition, the class will cover basics of different rock instruments, with guitars, keyboards, a bass, and a drum set being provided for class study.

MUSI 354: 1,2 s.h.**Major Performance 5:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 355: 1,2 s.h.**Major Performance 6:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 362: 3 s.h.**Music History and Literature 1 (W)**

Study of Western music in its cultural, historical and philosophical contexts from 500 B.C. to 1750 A.D., including its relationship to other art forms. Introduction to research in music history. Writing projects about music. Offered in fall. Prereq: ENGL 110, MUSI 100 or 162 and 312.

MUSI 362H: 3 s.h.**H:Music History/Literature 1 (W)**

H:Music History/Literature 1

MUSI 363: 3 s.h.**Music History/Literature 2 (P)**

The history, literature and aesthetics of Western art music from 1750 through the present. Knowledge of stylistic trends and representative literature will be emphasized. A research project is associated with the course. Offered in spring. Prereq: COMM 100, ENGL 110 and junior status. Music majors should consult with the department for course requirements.

MUSI 363H: 3 s.h.**H:Music History/Literature 2 (P)**

H:Music History/Literature 2

MUSI 368: 3 s.h.**International Music and Arts (D, G1, W)**

Introduction to terminology and cultural areas of the world. General introduction to the study of world music, the ethnomusicological approach and classification and symbolism of musical instruments. The process of musical innovation and acculturation in the world, and the impact of technology and the communications media on contemporary musical styles of non-European cultures. Topics include the music of South and West Africa, Ethiopia and folk music of the Arabic. Near East, the classical music of Iran and Asia, and the musical cultures of North and South India. Offered in spring. Prereq: COMM 100, ENGL 110 and junior status. Offered periodically.

MUSI 369: 3 s.h.**Intro to West African Music and Dance (D, P)**

Survey course designed to provide an in-depth analysis of West African culture and history focusing on the musical traditions found in this region of the world. General introduction to the study of West African music and dance, the ethnomusicological approach and classification and symbolism of musical instruments will be presented. Moreover, the process of musical innovation and acculturation in West Africa and the impact of technology and the communications media on traditional and contemporary musical styles will be examined. Offered fall, spring. Prereq: COMM 110, ENGL 110 and junior status.

MUSI 371: 3 s.h.**Foreign Language Diction****MUSI 371H: 3 s.h.**

Hhrs: Foreign Lang Diction

MUSI 372: 3 s.h.**The Art of Teaching Secondary Methods**

Study of the organization, pedagogy and practice of the middle and secondary school general classroom, including focus on multicultural and popular music, folk song study and analysis. 2 hrs. lec., 2 hrs. lab. Prereq: admission to Advanced Professional Studies; C or higher in MUSI 271 or permission of instructor. This course is taught concurrently while teacher candidates are co-teaching in the field on a weekly basis as a requirement of the Professional Bloc courses in the College of Education

MUSI 373: 3 s.h.**The Art of Teaching Instrumental Music Techniques**

Provides the prospective instrumental music instructor with the information, materials and techniques for effective teaching and efficient administration of a successful instrumental music program via seminar and field experiences. 2 hrs. lec., 2 hrs. lab. Offered in spring. Prereq: admission to Advanced Professional Studies; MUSI 152, 153, 156, 171, 381 or permission of instructor.

MUSI 380: 3 s.h.**History of the Recording Industry (P)**

History of the Recording Industry analyzes the process from which the invention and implementation of various recording devices and formats have impacted the artists and its audience, the development of various styles of music, culture and the companies who built the foundation of the music industry.

MUSI 380H: 3 s.h.**Hon:History of the Rec Ind (P)****MUSI 381: 2 s.h.****Conducting 1**

Includes fundamentals of conducting, with emphasis on gesture and developing score study technique. Choral music is used throughout this course. 1 hr. lec., 2 hrs. lab. Offered in spring. Prereq: MUSI 212 or permission of instructor.

MUSI 388: 3 s.h.**Guided Study Abroad in Music (D, G1)**

Provides students the opportunity to learn about and study international culture and music through immersion in various countries. In addition, students will learn about the historical context to all music that is studied and relevancy to the culture. Although geared toward music majors and education majors, anyone who has an interest in learning about music and culture of foreign lands can participate. This special topics course will be offered periodically and will focus on music of certain cultures and populations depending on the countries visited during this course offering.

MUSI 390: 3 s.h.**Marketing and Promotion in the Music Industry**

Designed to give students a comprehensive understanding of marketing & promotion in the music industry. It will give insight into the marketing tactics employed by labels, concert promoters, distributors, independent agents and artists in the marketplace. This course will provide the basis for developing an integrated marketing campaign that can be implemented and adapted into the current music marketplace. Prereq: MUSI 190 and MUSI 290 (or MUSI 391)

MUSI 390H: 3 s.h.**Hon: Mktg & Promo in Music In****MUSI 391H: 3 s.h.****H:Music Industry****MUSI 395: 3 s.h.****Studio Recording II**

This is an advanced course in modern studio recording techniques. Students will learn how to record and mix synthesizers, piano, drum set, percussion, and other acoustic instruments. Students will be required to complete numerous technical and creative projects, including recording Millersville University music ensembles and taking part in every facet of the recording process from booking the studio through mastering the final product.

MUSI 396: 3 s.h.**Synthesis and Sampling**

This is an advanced course focusing on the theory and operation of hardware & virtual synthesizers and digital audio samplers. Students learn how to identify and manipulate the various parameters of synthesis and sampling devices for compositions and live performances. In addition, advanced topics in sequencing and digital editing will be addressed.

MUSI 397: 3 s.h.**International Music Business**

Will delve into the cultural, technological and financial components of the international music industry. We will explore and analyze global trends, revenue streams, ethics and legal policy, marketing strategies, music consumption and distribution patterns, analytics/metrics, popular musical genres and the future of the music business in the United States, Canada, Europe, United Kingdom, Asia, Australia and Latin America.

MUSI 397H: 3 s.h.**Hon: Intl Music Business****MUSI 398: 3 s.h.****Songwriting**

This course will explore the techniques necessary to write and produce commercial pop songs and scores for radio, film, commercials, and video games. Topics include melodic and harmonic development, song forms, lyric structures, orchestration, instrumentation, arranging, and demo production. Prereq: MUSI 295 and MUSI 212

MUSI 400: 1-15 s.h.**Co-Op Ed Experience in Music**

Co-Op Ed Experience in Music

MUSI 400H: 3-12 s.h.**Hon: Internship/Coop MUSI****MUSI 408: 0.5 s.h.****Pri Ins 7:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 409: 0.5 s.h.**Pri Ins 8:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 411: 2 s.h.**Orchestration**

Instruments of the orchestra and band, with particular emphasis upon their ranges, timbre, balance of tone and mixed tone color. Scoring of instruments in small and large ensembles. Offered in spring. Prereq: MUSI 212 or permission of instructor.

MUSI 412: 3 s.h.**Kodaly Solfege, Harmony and Analysis 4**

This course provides coverage of the structures and aesthetics of the Romantic Period and an introduction to 20th-century practices. Reviews chromatic harmony, introduces mode mixture, enharmonic spellings and modulations found in the late 19th century. Includes an introduction to melodic and metric reduction and modulus-twelve analysis. The study of Romantic and selected 20th-century examples of music will be done through singing, ear training, improvisation, composition, analysis and keyboard performance. Offered in fall. Prereq: C or higher in MUSI 312.

MUSI 412H: 3 s.h.**H: Kodaly, Solf, Hrmny, Anly 4****MUSI 420: .5 s.h.****Wind Ensemble**

Music literature, ensemble technique and performance practice through musical performance in wind ensemble. Offered in fall, spring.

MUSI 423: .5 s.h.**Orchestra**

Music literature, ensemble technique and performance practice through musical performance in orchestra. Offered in fall, spring.

MUSI 424: .5 s.h.**Jazz Ensemble**

Music literature, ensemble technique and performance practice through musical performance in jazz ensemble. Offered in fall, spring.

MUSI 427: .5 s.h.**Chorale**

Music literature, ensemble technique and performance practice through musical performance in chorale. Offered in fall, spring.

MUSI 434: 1,2 s.h.**Maj Perf 7:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 435: 1,2 s.h.**Maj Perf 8:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 436: 1,2 s.h.**Maj Perf 7:**

Includes private study and participation in ensembles. Music majors only. Offered in fall, spring.

MUSI 437: 1,2 s.h.**Maj Perf 8:**

Includes private study and participation in ensembles. Music majors only. Offered in fall, spring.

MUSI 454: 1,2 s.h.**Major Performance 7:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 454H: 1,2 s.h.**H: MUED/BA-Maj Perf 7:****MUSI 455: 1,2 s.h.****Major Performance 8:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 481: 2 s.h.**Conducting 2**

An advanced course with emphasis on gesture and score study and analysis. Instrumental music is used throughout the class. 1 hr. lec., two 75-min. workshop/labs per week. Offered in fall. Prereq: C or higher in MUSI 381 or permission of instructor.

MUSI 489: 1-4 s.h.**Honors Course**

Honors Course

MUSI 490: 3 s.h.**Music Management**

The capstone course spans the course of two-terms and is designed to apply core concepts in the music industry through an entrepreneurial approach by developing a business plan and launching a project into the real-world. The initial term begins with the study of the processes and procedures involved in launching entrepreneurial enterprises that monetize music industry-related intellectual property, products and services. The development of opportunity recognition, commercialization of intellectual property, use of distribution models and other resources to pursue entrepreneurial opportunities will be explored during this course. Also, capitalization structures for new ventures within the music industry will be pursued through the development of a business plan. During the second term, students will select a project to launch into the real world. Students will work in teams and collaborate to execute the successful launch of a project and analyze the successes and failures experienced during the term.

MUSI 495: 3 s.h.**Audio & Music for Video**

This course addresses the world of audio and music for video, including film, television and gaming. The course will cover topics such as the science and psychology of sound, editing sound, creating sound effects, recording voice-overs, and synchronizing music to picture.

MUSI 497: 3 s.h.**Live Audio 3**

The objective of this course is for the students to be able to configure, assemble and optimize medium and large concert audio systems and peripheral equipment. This will include knowledge of signal flow, stage patching, protocols and cabling used for the interconnection of equipment and trouble shooting. They will apply basic principles of audio wave propagation for the purpose of optimization of a sound system. They will have basic knowledge to configure a digital mixing console for FOH and monitors as well as operating knowledge of each. They will understand the terms and definitions used in the live audio industry.

MUSI 498: 1-3 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section of the University Catalog. Offered fall, spring.

MUSI 499: 1-4 s.h.**Departmental Honors (AW)**

Departmental Honors

MUSI 500: 3-12 s.h.**Co-Op Ed Experience in Music**

Co-Op Ed Experience in Music

Certificate in Kodaly

Tell School of Music students to have the unique opportunity to study with two internationally renowned scholars in the Kodály Concept of music education - Dr. Philip Tacka (<https://www.millersville.edu/music/faculty-files/faculty/philip-tacka.php>) and Dr. Micheal Houlahan (<https://www.millersville.edu/music/faculty-files/faculty/micheal-houlahan.php>) and obtain a **Certificate in Kodály Teaching** at the Tell School. The Kodály Concept of teaching allows students to have the opportunity to enhance further their pedagogical skills that promote musicianship skills through experiential learning in singing, playing instruments, conducting, learning global repertoires, and understanding how to teach music from a sound to symbol perspective. In addition, students can observe and work with Kodály teachers in public school settings. The Certificate is an additional credential to the Music Education students' transcript

showing additional, specialized study in the Kodály Concept of teaching - an attractive credential for music teachers!

Certificate in Modern Band Applications

The Modern Band Applications Certificate Program is unique to the Tell School of Music, and is an incredible way to add this skillset to one of our existing music degrees or as a stand alone certificate. Students in the program will strengthen both their teaching and performance skills in the realm of popular music making and will offer our graduates with an employment advantage in public schools, and in the music education workforce. The Certificate is an additional credential to the a students' transcript showing additional, specialized study in Modern Band Applications.

Certificate in Modern Band Applications

Code	Title	Hours
A Minimum grade of 'B' must be earned in each class in order to complete the certificate.		
MUSI 350	The Art of Teaching Modern Band	3
Live Audio Production		3
MUSI 294	Live Audio 1	
Songwriting and Composition		3
MUSI 398	Songwriting	
MUSI 124	Commercial Music Lab Band	1
& MUSI 324	and Commercial Music Ensemble	
Total Hours		10

Certificate in Music Technology in Music Education

Tell School of Music students are the only undergraduate students in Pennsylvania to have the unique opportunity to integrate a study of technology with music education. Starting in the Fall 2020 semester, Music Education students now have the option of obtaining a new Certificate in Technology in Music Education at the Tell School. The Certificate is an additional credential to the Music Education students' transcript showing additional, specialized study in technology. In the 21st century, this is an especially attractive course of study for music educators. Students who elect Technology studies will not only be prepared to help in live sound productions in their schools but also will be prepared to teach 21st century classes in Recording, Live Audio, Modern Band, or other technology-based classes.

Certificate in Music Technology in Music Education

Code	Title	Hours
A Minimum grade of 'B' must be earned in each class in order to complete the certificate.		
MUSI 280	Technology in the Music Classroom	3
MUSI 193	Computer Applications in Music Production 1	3
Live Audio Production		3
MUSI 294	Live Audio 1	
MUSI 295	Studio Recording I	3
Total Hours		12

Music Industry, B.S. - Music Management

The primary goal of this new liberal arts degree's curriculum is to provide students with a solid foundation in music technology, music business, and music performance while increasing their level of specificity through track options. Thus, students will be more prepared for the job market and more competitive with graduates from private institutions from other programs.

Music Industry, B.S. – Live Audio

The primary goal of the Live Audio concentration is to provide students with a solid foundation in live audio technology, music business, and music performance. This concentration will allow them to increase their specificity in live audio technology, thus resulting in students who will be more prepared for the job market and more competitive with graduates from private institutions. In addition, this concentration will explore the technology and techniques necessary to produce concerts in various venues, including those on and off campus. Students will participate in all facets of music-related concert production, including equipment options, signal flow, signal processing, mixing live shows, and live recording techniques.

Music Industry, B.S. – Music Production

The primary goal of this music industry degree track's curriculum is to provide students with a solid foundation in music production and music industry studies. In addition, students will increase their specificity in music production, thus resulting in students who will be more prepared for the job market and more competitive with graduates from private institutions.

Music Minor

The music unit offers a minor in music to students with a major outside of music. The music minor is designed for non-music major students interested in further developing performance skills on an instrument or voice. Courses, in addition to private lessons and performing in an ensemble, are designed to reinforce the broad musical background of the student. Admission to the program is by audition for students who elect major performance and ensemble participation. Students who do not select major performance and only wish for concentrated liberal art minor in music may apply to the program through the music unit chair and secretary.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.

6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Music

Code	Title	Hours
MUSI 100	Music and Culture	3
Language of Music I or II - Choose 1 of the following:		3
MUSI 103	Language of Music	
MUSI 104	Language of Music 2	
100 and 200 level electives - Choose 6 hours from:		6
Any 1-level MUSI course(s)		
Any 2-level MUSI course(s)		
300 and 400 level electives - Choose 6 hours from:		6
Any 3-level MUSI course(s)		
Any 4-level MUSI course(s)		
Music Performance		0
OPTIONAL: 3 credits Major Performance (audition required) with requirement to take 3 semesters of ensemble concurrently.		
Total Hours		18

Music, B.A.

The B.A. in music consists of a liberal arts curriculum designed to provide students with a broad coverage of courses in music. The B.A. degree with a concentration in performance develops a student's ability to perform repertoire with technical and artistic understanding.

The Bachelor of Arts degree in music provides a strong education in the liberal arts. The major in music offers a broad knowledge of music theory and the history and development of music. Students can audition to select a performance concentration. This degree serves individuals who seek a broad overview of music combined with general education. Students who complete the B.A. and/or the B.A. concentration in performance pursue graduate work in music performance, music education, music business, and music therapy. Students also pursue careers in private teaching, working with Arts and Educational organizations, or become involved with rather than intense specialization in the undergraduate years.

Major in Music, BA

Code	Title	Hours
BASIC MUSICIANSHIP		
MUSI 104	Language of Music 2	3
MUSI 112	Kodaly Solfege, Harmony and Analysis 1	3
MUSI 131	Class Piano 1	2
MUSI 212	Kodaly Solfege, Harmony and Analysis 2	3
MUSI 231	Class Piano 2	2
MUSI 362	Music History and Literature 1	3
MUSI 381	Conducting 1	2
PERFORMANCE		
Students interested in Kodaly Certification must complete 3 semesters of Chorale, in addition to their degree ensemble requirements.		
BA Music Performance Requirement - Choose 6 hours from:		6
MUSI 154	Major Performance 1:	

MUSI 155	Major Performance 2:
MUSI 254	Major Performance 3:
MUSI 255	Major Performance 4:
MUSI 354	Major Performance 5:
MUSI 355	Major Performance 6:
MUSI 454	Major Performance 7:
MUSI 455	Major Performance 8:

Applied Musicianship, Ensembles 2 CREDITS required - Choose 2 hours from:

- Any 12-level MUSI course(s)
- Any 22-level MUSI course(s)
- Any 32-level MUSI course(s)
- Any 42-level MUSI course(s)

Note: This requirement may not be satisfied with MUSI 128, MUSI 228, MUSI 328, or MUSI 428.

Applied Musicianship, Ensembles 8 CLASSES required - Choose 8 classes from:

- Any 12-level MUSI course(s)
- Any 22-level MUSI course(s)
- Any 32-level MUSI course(s)
- Any 42-level MUSI course(s)

Note: This requirement may not be satisfied with MUSI 128, MUSI 228, MUSI 328, or MUSI 428.

SENIOR PROJECT AND STUDIO PERFORMANCE EVALUATIONS

Senior Project Required
All students must pass their Senior Project for the BA in Music.

Studio Performance Evaluation Needed
BA Music Performance Students must pass Studio Performance Evaluations with a Level 4 in Studio Performance. BA Music Students must pass Studio Performance Evaluations with a Level 2 in Studio Performance.

REQUIRED MUSIC ELECTIVES (3 CREDITS REQUIRED)

undefined - Choose 3 hours from:	3
MUSI 312	Kodaly Solfege, Harmony and Analysis 3
MUSI 313	Sem in Jazz Thry & Improv
MUSI 331	Class Piano 3
MUSI 412	Kodaly Solfege, Harmony and Analysis 4
MUSI 481	Conducting 2

MUSIC ELECTIVES

undefined - Choose 9 hours from:	9
MUSI 140	Singing Voice in Musicl Theatr
MUSI 202	American Broadway Musicals
MUSI 207	Love Songs Through the Ages
MUSI 263	Popular Music
MUSI 280	Technology in the Music Classroom
MUSI 303	
MUSI 312	Kodaly Solfege, Harmony and Analysis 3
MUSI 313	Sem in Jazz Thry & Improv
MUSI 331	Class Piano 3
MUSI 347	The Art of Teaching Choral Techniques
MUSI 369	Intro to West African Music and Dance
MUSI 371	Foreign Language Diction
MUSI 371H	Hnrs: Foreign Lang Diction

MUSI 373	The Art of Teaching Instrumental Music Techniques
MUSI 388	Guided Study Abroad in Music
MUSI 412	Kodaly Solfege, Harmony and Analysis 4
MUSI 481	Conducting 2

BA MUSI (no Performance option) - A combination of electives should be taken from the Required and Additional elective options to total 12 credits, for 38 total credits in the MUSI major

Total Hours 38

Music, B.A. – Performance

The Bachelor of Arts with a concentration in Performance is a music degree that prepares students for future careers as performers, accompanists, private teachers, or work collaboratively with other musicians. Concentrations are available in instrumental and vocal music.

Major in Music, BA

Code	Title	Hours
BASIC MUSICIANSHIP		
MUSI 112	Kodaly Solfege, Harmony and Analysis 1	3
MUSI 131	Class Piano 1	2
MUSI 212	Kodaly Solfege, Harmony and Analysis 2	3
MUSI 231	Class Piano 2	2
MUSI 312	Kodaly Solfege, Harmony and Analysis 3	3
MUSI 331	Class Piano 3	2
MUSI 362	Music History and Literature 1	3
MUSI 363	Music History/Literature 2	3
MUSI 381	Conducting 1	2

PERFORMANCE		
Students interested in Kodaly Certification must complete 3 semesters of Chorale, in addition to their degree ensemble requirements.		
BA Music Performance Concentration Performance Requirement		16

MUSI 154	Major Performance 1:
MUSI 155	Major Performance 2:
MUSI 254	Major Performance 3:
MUSI 255	Major Performance 4:
MUSI 354	Major Performance 5:
MUSI 355	Major Performance 6:
MUSI 454	Major Performance 7:
MUSI 455	Major Performance 8:

Applied Musicianship, Ensembles 2 CREDITS required - Choose 2 hours from:

- Any 12-level MUSI course(s)
- Any 22-level MUSI course(s)
- Any 32-level MUSI course(s)
- Any 42-level MUSI course(s)

Note: This requirement may not be satisfied with MUSI 128, MUSI 228, MUSI 328, or MUSI 428.

Applied Musicianship, Ensembles 8 CLASSES required - Choose 8 classes from:

- Any 12-level MUSI course(s)
- Any 22-level MUSI course(s)
- Any 32-level MUSI course(s)

Any 42-level MUSI course(s)

Note: This requirement may not be satisfied with MUSI 128, MUSI 228, MUSI 328, or MUSI 428.

SENIOR PROJECT AND STUDIO PERFORMANCE EVALUATIONS

Senior Project Required

All students must pass their Senior Project for the BA in Music.

Studio Performance Evaluation Needed

BA Music Performance Students must pass Studio Performance Evaluations with a Level 4 in Studio Performance. BA Music Students must pass Studio Performance Evaluations with a Level 2 in Studio Performance.

REQUIRED MUSIC ELECTIVE (3 CREDITS REQUIRED)

undefined - Choose 3 hours from: 3

MUSI 347 The Art of Teaching Choral Techniques

MUSI 373 The Art of Teaching Instrumental Music Techniques

MUSIC ELECTIVES

undefined - Choose 6 hours from: 6

MUSI 104 Language of Music 2

MUSI 140 Singing Voice in Musical Theatre

MUSI 141 Vocal Techniques

MUSI 171

MUSI 190 Music Industry 1

MUSI 193 Computer Applications in Music Production 1

MUSI 202 American Broadway Musicals

MUSI 207 Love Songs Through the Ages

MUSI 263 Popular Music

MUSI 280 Technology in the Music Classroom

MUSI 290 Music Industry 2

MUSI 293 Computer Applications in Music Production 2

MUSI 294 Live Audio 1

MUSI 295 Studio Recording I

MUSI 301 Music in Early Childhood

MUSI 303

MUSI 304 Artist Management

MUSI 313 Sem in Jazz Theory & Improv

MUSI 330 Live Audio 2

MUSI 347 The Art of Teaching Choral Techniques

MUSI 369 Intro to West African Music and Dance

MUSI 371 Foreign Language Diction

MUSI 371H Hrs: Foreign Language Diction

MUSI 372 The Art of Teaching Secondary Methods

MUSI 373 The Art of Teaching Instrumental Music Techniques

MUSI 380 History of the Recording Industry

MUSI 388 Guided Study Abroad in Music

MUSI 390 Marketing and Promotion in the Music Industry

MUSI 392

MUSI 395 Studio Recording II

MUSI 396 Synthesis and Sampling

MUSI 397 International Music Business

MUSI 398 Songwriting

MUSI 412 Kodaly Solfege, Harmony and Analysis 4

MUSI 481 Conducting 2

MUSI 495 Audio & Music for Video

MUSI 497 Live Audio 3

MUSI 587 Topics in Music

BA MUSI (no Performance option) - A combination of electives should be taken from the Required and Additional elective options to total 12 credits, for 38 total credits in the MUSI major

Total Hours 50

Req Related for Music, BA

Code	Title	Hours
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The department recommends the addition of an Entrepreneurship Minor for Music Majors.

ENTR 201	The Art of Entrepreneurship	3
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RECOMMENDED RELATED COURSES

These courses are not required for completion of a BA in MUSI, but are recommended.

PHYS 205	Musical Acoustics	0
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	Foreign Languages	0
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Total Hours 3

Music, B.S.Ed.

Major in Music, BSE

Code	Title	Hours
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BASIC MUSICIANSHIP

MUSI 112	Kodaly Solfege, Harmony and Analysis 1	3
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MUSI 131	Class Piano 1	2
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MUSI 212	Kodaly Solfege, Harmony and Analysis 2	3
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MUSI 231	Class Piano 2	2
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MUSI 312	Kodaly Solfege, Harmony and Analysis 3	3
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MUSI 331	Class Piano 3	2
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MUSI 362	Music History and Literature 1	3
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MUSI 363	Music History/Literature 2	3
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MUSI 381	Conducting 1	2
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MUSI 412	Kodaly Solfege, Harmony and Analysis 4	3
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MUSI 481	Conducting 2	2
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MUSIC EDUCATION COURSES

	Class Voice I	1
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MUSI 141	Vocal Techniques	
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MUSI 151	Strings Techniques	1
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MUSI 152	Woodwind Techniques	1
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MUSI 153	Percussion Techniques	1
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MUSI 156	Brass Techniques	1
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MUSI 350	The Art of Teaching Modern Band	3
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MUSI 280	Technology in the Music Classroom	3
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MUSI 317	The Art of Teaching Elementary Music Kodaly	3
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MUSI 347	The Art of Teaching Choral Techniques	3
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	The Art of Teaching Middle Level Music Kodaly	3
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MUSI 372	The Art of Teaching Secondary Methods	
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MUSI 373	The Art of Teaching Instrumental Music Techniques	3
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MAJOR PERFORMANCE

Music Education Major Performance - Choose 7 hours from:		7
MUSI 154	Major Performance 1:	
MUSI 155	Major Performance 2:	
MUSI 254	Major Performance 3:	
MUSI 255	Major Performance 4:	
MUSI 354	Major Performance 5:	
MUSI 355	Major Performance 6:	
MUSI 454	Major Performance 7:	
MUSI 455	Major Performance 8:	

JUNIOR REVIEW AND STUDENT PERFORMANCE EXAMS

Junior Level Review Required

All students must complete their Junior Review during Junior Year (between 60 and 89 earned credits)

Studio Performance Exam Needed

Music Education Students must pass Studio Performance Exams with a Level 3 in Studio Performance.

APPLIED MUSICIANSHIP

Students must complete a minimum of 7 semesters of ensembles Except for MUSI 128, 129, 228 or 229

Bands/Orchestra/Choirs Classes - Choose 7 classes from:

Any 12-level MUSI course(s)

Any 22-level MUSI course(s)

Any 32-level MUSI course(s)

Any 42-level MUSI course(s)

Note: This requirement may not be satisfied with MUSI 128, MUSI 129, MUSI 228, or MUSI 229.

Bands/Orchestra/Choirs Credits - Choose 2 hours from:

Any 12-level MUSI course(s)

Any 22-level MUSI course(s)

Any 32-level MUSI course(s)

Any 42-level MUSI course(s)

Note: This requirement may not be satisfied with MUSI 128, MUSI 129, MUSI 228, or MUSI 229.

MARCHING BAND

Strings/Voice/Piano take 1 semester of Marching Band/MB Camp
Brass/Woodwinds/Perc take 2 semesters of Marching Band/MB Camp

Marching Band and Camp (2 semesters)

Marching Band and Marching Band Camp are taken simultaneously.

MUSIC ELECTIVES

MUSI 251, 294, 369 Recommended Electives 0

MUSI 140, 202, 207, 263, 303, 313, 371, 388, 398 Electives 0

Total Hours 60

Professional Education

Code	Title	Hours
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EDUCATIONAL FOUNDATIONS

EDFN 211 Foundations Modern Education 3

EDFN 241 Psychological Foundations of Teaching 3

ACCOMMODATIONS AND ADAPTATIONS

EDSE 340 Content Area Literacy for Diverse Classrooms 3

SPED 346 Secondary Students w/Disabilities in Inclusive Settings 3

STUDENT TEACHING

EDSE 471 Student Teaching Seminar 3

Student Teaching 9

EDMU 461 Musi Stu Teaching

Total Hours 24

Req Related for Music, BSE

Code	Title	Hours
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ENTR 201 The Art of Entrepreneurship 3

Musical Acoustics 0

PHYS 205 is not required, but is recommended and will count in G2

Total Hours 3

Advanced Professional Studies, BSE

Code	Title	Hours
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*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.

APS REQUIREMENTS

English Composition - Choose 1 of the following: 3

ENGL 110 English Composition

ENGL 110H Hnrs:English Composition

English Literature - Choose 1 of the following: 3

ENGL 230 Introduction to Literature

ENGL 231 World Literature 1

ENGL 232 World Literature 2

ENGL 233 Early British Literature

ENGL 234 Later British Literature

ENGL 235 American Literary Tradition I

ENGL 236 American Literary Tradition II

ENGL 241H H:Explorations in World Lit

ENGL 242 Reading Our World:

ENGL 292 Science Fiction

ENGL 333 African-American Literature 1

ENGL 333H Hnrs:African American Lit 1

ENGL 334 African American Literature 2

ENGL 334H Hnrs:African American Lit 2

ENGL 336 New Dimensions to World Lit

ENGL 338 Folklore and Literature

ENGL 401 Old Eng Lang and Literature

ENGL 402 Middle Eng Lang and Literature

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211 Foundations Modern Education 6

& EDFN 241 and Psychological Foundations of Teaching

48 earned (transcript) credit hours are required

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. [Click here for the application.](#)

Total Hours

12

Women's, Gender and Sexuality Studies

The Program in Women's, Gender and Sexuality Studies at Millersville University is dedicated to incorporating new scholarship on women and gender into the university curriculum. Active in the classroom—as well as in the laboratory, the archive, and, the field—faculty and students work together to investigate women's experiences and gender relations across a wide array of disciplines.

In the classroom, as in our research, we reach across divisions of historical, political, economic, representational, technological, and scientific analysis in order to offer students innovative methods and theories that enhance the broad reach of their studies and their everyday lives.

Students probe how social, historical, and psychological forces, organized by gender, shape individuals, communities, and societies. Learning about the diverse experiences of women of different economic classes, sexual orientations, and cultural, and racial backgrounds, students transfer the critical and analytical skills they develop in the study of gender and society to their other classes and beyond the classroom to other activities on campus and in the broader community. Courses and events sponsored by Women and Gender Studies provide valuable resources for all members of the university community.

Many students identify courses in the Women's, Gender and Sexuality Studies Program as among the most exciting and enlightening they take at Millersville. The students who enroll in our classes each semester find their background in Women's, Gender and Sexuality Studies to be a valuable resource for their professional development and lifelong intellectual growth. Through their developed competencies in cultural and gender dynamics, graduates have found themselves well prepared to pursue advanced degrees and training in the professions, to gain employment in community service agencies, to engage in artistic expression in the creative arts, and to assume leadership roles and positions in both business and government. As more career opportunities require credentials in diversity and inclusion, Women's, Gender and Sexuality Studies provides a thoughtful choice as a minor for careers in medicine, business, teaching, social work, government, law, and other endeavors where equity and social sensitivity are expected.

the programs

- Women's, Gender and Sexuality Studies Minor (p. 173)

the faculty

Dr. Jill Craven, coordinator

the courses

WSTU 220: 3 s.h.

Introduction to Women's & Gender Studies (G3)

Interdisciplinary and multicultural study of women's roles and relationships and the ways they differ among women by race, ethnicity, class and sexual orientation. Overview of theoretical perspectives on gender and examination of contemporary issues facing women.

WSTU 300: 3-12 s.h.

Co-Op Ed Experience in Wstu

Co-Op Ed Experience in Wstu

WSTU 330: 3 s.h.

Feminist Theory (P)

This course explores diverse strains of feminist theory, including liberal, radical, black, global, socialist/Marxist and lesbian feminisms. This is a required course for all women's studies minors. Prereq: COMM 110, ENGL 110, WSTU 220, junior status or instructor permission.

WSTU 330H: 3 s.h.

Hon: Feminist Theory (P)

WSTU 379: 3 s.h.

Experimental

Experimental

WSTU 400: 3-12 s.h.

Co-Op Ed Experience in Wstu

Co-Op Ed Experience in Wstu

WSTU 488: 3 s.h.**Senior Seminar (G3, W)**

Interdisciplinary and multicultural examination of how feminist perspectives and a focus on women can restructure social institutions, ways of thinking and academic disciplines. Prereq: ENGL 110, junior or senior status, and WSTU 220 or another approved women's studies course or permission of instructor.

WSTU 489: 1-4 s.h.**Honors Course**

Honors Course

WSTU 491: 1-3 s.h.**Topics Women's & Gender Study**

Investigates topics related to women's and gender studies in history, literature, music, art, anthropology, sociology, communications, business, science or other field.

WSTU 498: 1-6 s.h.**Ind Study:**

Allows students to pursue an academic area of interest not available through an established course, with faculty supervision and guidance. For further information, see the Special Academic Opportunities section of the catalog, and consult with the director of women's studies.

WSTU 500: 3-12 s.h.**Co-Op Ed Experience in Wstu**

Co-Op Ed Experience in Wstu

Women's, Gender and Sexuality Studies Minor

The program in Women's, Gender, and Sexuality Studies (<https://www.millersville.edu/wstudies/>) at Millersville University incorporates new and current scholarship on women, gender, and sexuality into the university curriculum. In classes, in labs, and in archives, students explore how social, economic, legal, historical, and psychological forces shape individuals, communities, and societies.

As more career opportunities require credentials in diversity and inclusion, Women's, Gender, and Sexuality Studies (<https://www.millersville.edu/wstudies/>) provides a thoughtful choice as a minor for careers in medicine, business, teaching, education, sports management, social work, government, law, and other endeavors where equity, social sensitivity, and cultural knowledge are expected.

WGSS interdisciplinary scholars reach across divisions of historical, political, economic, legal, representational, technological, and scientific analysis; they offer students innovative methods and theories to expand the breadth of their studies as well as their everyday lives.

Students who enroll in WGSS classes find their background in *Women's, Gender, and Sexuality Studies* to be not only a valuable resource for their professional development, but also for their lifelong intellectual and personal growth. Many students identify courses in the *Women's, Gender, and Sexuality Studies* program as among the most exciting and enlightening they take at Millersville.

Through their understanding of complex, intersectional identities, WGSS minors have found themselves well prepared to pursue advanced degrees and training in the professions, to gain employment in community service agencies, to engage in artistic expression in the creative arts, and to assume leadership roles and positions in both business and law/government. Their increased sensitivity to diversity and inclusion makes them sought-after employees.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Women's, Gender and Sexuality Studies

Code	Title	Hours
WSTU 220	Introduction to Women's & Gender Studies	3
Feminist Theory - Choose 1 of the following:		3-6
WSTU 330	Feminist Theory	
SOCY 329	Topics in Sociology (Topics: Feminist Theory)	
WSTU 488	Senior Seminar	3
Elective Courses - Choose 3 of the following: ¹		9
ANTH 344	Gender, Race, and Class	
ART 305	Women in Art	
ART 404	Contemporary Movements in Art	
COMM 330	Media and Women's Culture	
COMM 333	Gender and Communication	
EDFN 312	Women and Education	
EDFN 376	Whose School Is It?	
EDUC 433	Gender and Race Issues	
ENGL 242	Reading Our World:	
ENGL 337	Women Writers in Middle Ages	
ENGL 416	The Woman Writer	
ENGL 435	Journlsm Thru Women's Prspctvs	
ENGL 429	Smnr Sel Am Auth: (Smnr Sel Am Auth:Women Authors)	
HIST 250	Women in American History	
HIST 320	Renaissance and Reformation	
GOVT 212	Women & American Politics	
NURS 316	Women, Health, and Health Care	
PHIL 391	Gender, Utopia, Human Nature	
SSCI 212	The Black Woman	
SOCY 337	Gender and the Law	
SOWK 312	SOWK & Wmn: Strgth, Need & Opp	
SOWK 313	Family Violence	
WSTU 491	Topics Women's & Gender Study	
Students will pick courses to satisfy the electives with the Women's Gender Studies Steering Committee and their Women's Gender Studies adviser. Must include at least one 300-400 level course.		

Total Hours

18-21

The Lombardo College of Business

The Lombardo College of Business is nationally accredited by the Association of Collegiate Business Schools and Programs to offer Bachelor of Science (B.S.) degrees in accounting, finance, management and marketing, and business administration with concentrations in general business and international business. The curriculum is designed to provide study in the subjects required for employment in any business or organization. The College's program has a diverse faculty with extensive academic training and business experience.

The curriculum also provides excellent preparation for graduate and professional studies leading to degrees such as the M.B.A., M.S., Ph.D. and the J.D. Accounting students have available all the necessary coursework to sit for either the CPA or CMA, CIA, or the CFE examination.

Internships are an integral part of our program and commonly link students with local industry. Minor study can also be incorporated. Studies in disciplines outside business are required to help develop the well-rounded and liberally educated person employers seek.

Admission into the Bachelor of Science program from other departments of the University is always possible. Those interested should apply to the appropriate chairperson. Transfers from other institutions should check with the Office of Admissions. The department offers minors in general business, accounting, finance, management and marketing. Please see the appropriate chairperson for an application. Students who are interested in online degree options should contact the Office of Online Programs.

THE DEPARTMENTS

- Accounting and Finance (p. 174)
- Management and Marketing (p. 182)

THE PROGRAMS

- Accounting Minor (p. 178)
- Accounting, B.S. (p. 178)
- Business Administration, B.S. - General Business (p. 178)
- Business Administration, B.S. - International Business (p. 179)
- Cybersecurity Minor (p. 188)
- Finance Minor (p. 180)
- Finance, B.S. (p. 180)
- Finance, B.S. - Wealth Management (p. 181)
- General Business Minor (p. 182)
- Information Technology Minor (p. 188)
- Information Technology, B.S. (p. 187)
- Information Technology, B.S. - Cybersecurity (p. 188)
- Management Minor (p. 189)
- Management, B.S. (p. 190)
- Management, B.S. - Human Resources Management (p. 190)
- Marketing Minor (p. 191)
- Marketing, B.S. (p. 191)
- Marketing, Sub-Baccalaureate Certificate (p. 192)

Accounting and Finance

accounting and finance department

The Department of Accounting and Finance offers a Bachelor of Science in Accounting, Bachelor of Science in Finance, and a Bachelor of Science in Business Administration with two possible concentrations (General Business and International Business). We also offer minors in Accounting, Finance and General Business.

The BS in General Business program equips students with the essential elements of Accounting, Finance, International Business, Management and Marketing to pursue employment in any business or organization, or to continue their professional studies. Through their coursework, students will be able to integrate concepts learned across the main areas of business to solve complex business problems.

The program's core curriculum provides you with knowledge, skills and experience across a wide range of business topics including financial and managerial accounting, principles of management and marketing, information systems, business law, finance and more. Our minors and concentration allow you to dig deeper into fields of interest. Our flexible curriculum encourages hands-on learning and provides opportunities for internships with businesses and not-for-profit organizations. You can earn credits, develop skills and gain valuable work experience, often while being paid.

the programs

- Accounting Minor (p. 178)
- Accounting, B.S. (p. 178)
- Business Administration, B.S. - General Business (p. 178)
- Business Administration, B.S. - International Business (p. 179)
- Finance Minor (p. 180)
- Finance, B.S. (p. 180)
- Finance, B.S. - Wealth Management (p. 181)
- General Business Minor (p. 182)

the faculty

Blazer, Eric; Associate Professor
Lombardo College of Business
B.S., Virginia Tech., 1984; M.S., Ibid., 1986; Ph.D., Ibid., 1996

Chen, Baizhou; Assistant Professor
Lombardo College of Business
B.S., University of Minnesota, 2003; M.B.A., St. John's University, 2005; D.B.A., Jacksonville University, 2020

Galante, Joseph; Professor
Lombardo College of Business
B.B.A., Iona College, 1978; M.B.A., Ibid., 1980; M.A., Rutgers University, 1989; J.D., Western Michigan University, The Thomas M. Cooley Law School, 1992

Trout, Brian; Assistant Professor
Lombardo College of Business
B.S., Millersville University, 2000; M.S., Stetson University, 2013; D.B.A., Wilmington University, 2019

the courses

ACCT 179: 3 s.h.

Experimental

Experimental course in Accounting.

ACCT 279: 3 s.h.

Experimental

Experimental Course in Accounting

ACCT 302: 3 s.h.

Organizations and Transactions

Continuation of BUAD 202. Includes such topics as consumer law, debtor-creditor law, secured transactions, bankruptcy, forms of business organization, securities regulation, antitrust, labor-management relations, employment discrimination, environmental law, international business, wills and trusts. Recommended for students studying for the CPA exam, or for business students who wish to broaden their knowledge of the legal environment of business. Counts as a business administration departmental elective, or as an accounting elective in the accounting option. Offered annually. Prereq: BUAD 202.

ACCT 361: 3 s.h.

Intermediate Accounting 1

Financial statement preparation with special attention to revenue recognition and asset valuation. Emphasis on generally accepted accounting principles and accounting theory. Students will develop a familiarity with the official pronouncements. Offered in fall, spring. Prereq: C- or higher in BUAD 162.

ACCT 362: 3 s.h.

Intermediate Accounting 2

Examination of generally accepted accounting principles as they apply to long term liabilities and equity. This course is a continuation of Intermediate Accounting I. Includes issues of current interest. Selected readings from pronouncements. Offered in fall, spring. Prereq: C- or higher in BUAD 341 and ACCT (formerly BUAD) 361.

ACCT 363: 3 s.h.

Accounting Information System

Special emphasis on current problems and issues using small business accounting software. Offered infrequently. Prereq: C- or higher in ACCT (formerly BUAD) 361.

ACCT 364: 3 s.h.

Cost Accounting

Investigates cost accounting techniques such as budgeting, accounting controls, standard cost, operation evaluation techniques, variance analysis and performance analysis. The role of cost accounting in profit planning and decision making is examined. Offered in fall, spring. Prereq: C- or higher in BUAD 162, 206 (formerly 306).

ACCT 365: 3 s.h.

Not-For-Profit Accounting

A review of fund accounting, application of fund accounting to nonprofit organizations such as state and local governments and health care institutions. Offered infrequently. Prereq: BUAD 161.

ACCT 366: 3 s.h.

Federal Income Tax 1

Study of federal income tax laws as they relate to individuals and businesses. Topics include gross income, deductions, basis, gains and losses and tax computations. Students are introduced to tax research techniques and applications. Offered annually. Prereq: C- or higher in both BUAD 162 and 202.

ACCT 367: 3 s.h.

Federal Income Tax 2

Study of corporate, S Corporations and partnership taxation. Topics include corporate organization, distribution, reorganization, accumulated earnings, S elections, partnership formation, operation, and transfers. Introduction to estate planning and wealth accumulation. Offered annually. Prereq: ACCT (formerly BUAD) 366.

ACCT 368: 3 s.h.

Business Applications: Excel

Application of Microsoft Excel for accounting and other business functions. Preparation for the official Microsoft Excel Certification exams. Prereq: BUAD 206

ACCT 379: 3 s.h.

Experimental

Experimental Course in Accounting

ACCT 405: 3 s.h.

Topics in Accounting

Advanced, innovative, or exploratory topics and disciplines within accounting. Specific content items developed by instructor. Most topics will be for business majors only. Offered periodically. Prerequisites may vary. Consult the current course offering.

ACCT 461: 3 s.h.

Auditing

Study of the attest function of the independent auditor and review of theory and procedures for evaluating internal control and financial information. Includes generally accepted auditing standards as developed and applied to different audit areas in order to establish the fairness of financial information. Offered annually. Prereq: C- or higher in ACCT (formerly BUAD) 361.

ACCT 465: 3 s.h.

Advanced Accounting

Accounting formation, operation and liquidation of the partnership and corporate forms of business. Emphasis on preparing consolidated financial statements. Review of topics such as nonprofit accounting and multinational business. Offered annually. Prereq: ACCT (formerly BUAD) 362.

ACCT 479: 3 s.h.

Experimental

Experimental Course in Accounting

ACCT 499: 1-4 s.h.

Departmental Honors

Departmental Honors

ACFN 300: 3-12 s.h.

Co-Op Ed Exp in Acct/Fin

Cooperative Education in Accounting and/or Finance

ACFN 400: 3-12 s.h.

Co-Op Ed Exp in Acct/Fin

Cooperative Education Experience in Accounting/Finance

ACFN 489: 1-4 s.h.

Honors Course

Honors Course

ACFN 498: 1-4 s.h.

Independent Study

Independent Study in Accounting and Finance. See catalog or department for eligibility and registration information.

ACFN 500: 3-12 s.h.**Co-Op Ed Exp in Acct/Fin**

Cooperative Education Experience in Accounting/Finance

BUAD 101A: 3 s.h.**Introduction to Business (G3)**

Introduction of basic business concepts such as institutional setting, organizational structures, decision making, accounting, finance, labor relations, management, marketing and government-business relations. No credit for BUAD majors, except as departmental elective if taken before becoming a BUAD major. Offered in spring, fall.

BUAD 101B: 3 s.h.**Introduction to Business (G3)**

Introduction of basic business concepts such as institutional setting, organizational structures, decision making, accounting, finance, labor relations, management, marketing and government-business relations. No credit for BUAD majors, except as departmental elective if taken before becoming a BUAD major. Offered in spring, fall.

BUAD 161: 3 s.h.**Intro to Financial Accounting**

Examination of the account cycle and systems and procedures for developing financial information; introduction to the conceptual and theoretical foundation of financial information systems; and interpretation of financial statements. Offered in fall, spring. Prereq: MATH 101 or MATH placement beyond MATH 101 (MATH 151, 155H, 160, 161, 163H).

BUAD 162: 3 s.h.**Intro to Managerial Accounting**

Problem-oriented introduction to the interpretation and application of accounting information from the viewpoint of management with emphasis on planning and control and long-range strategies. Offered in fall, spring. Prereq: C- or higher in BUAD 161.

BUAD 202: 3 s.h.**Legal Environment of Business (G3)**

The American legal system and its impact on business. Includes the court system, litigation and alternative dispute resolution, contract law, torts in the business environment, product and service liability, property, and criminal law. Offered in fall, spring.

BUAD 202H: 3 s.h.**Hon: Legal Environ/Business (G3)****BUAD 206: 3 s.h.****Business Research Methods**

The theory and practice of a number of widely used research techniques as an aid to decision making. Business application will be emphasized with cases and problems from the areas of management, marketing, finance and accounting. Uses computer programs for data analysis, interpretation and presentation of research results. Prereq: MATH 235.

BUAD 231: 3 s.h.**Principles of Marketing**

Explores the role of marketing in the free enterprise system. Defines marketing and its relationship to society. Reviews the controllable elements of the marketing mix: product, place, promotion, and price. Explains marketing concepts and terminology. Applies terminology and concepts to real world problems. Covers basic analytic skills needed to solve marketing problems. Offered in fall, spring. Prereq: C- or better in ECON 101 and 102.

BUAD 231H: 3 s.h.**H:Principles of Marketing**

H:Principles of Marketing

BUAD 251: 3 s.h.**Principles of Management (G3, W)**

Examines management processes of planning, organizing, leading and controlling and provides basic knowledge of management history, managers' roles and functions, environment influences, effective decision making, leadership and team management, ethical and social responsibilities, and current trends in management. Prereq: C- or higher in ECON 101, 102 and ENGL 110.

BUAD 251H: 3 s.h.**Hrs:Principles of Managemnt (G3, W)**

Hrs:Organizatn and Managemnt

BUAD 307: 3 s.h.**Management Information Systems**

Technology, application and management of computer-based management information systems. Covers identification of the need for management information, the assignment of resources and establishment of an information system. Includes case studies. Offered in fall, spring. Prereq: BUAD 162, 251.

BUAD 310: 3 s.h.**Economics of Justice (D, P)**

Economic concepts and models used to explain legal principles. The effects of legal decision-making on economic efficiency. Topics include property, contracts, torts and criminal law. Offered annually. Prereq: BUAD 202, ECON 102, COMM 100, ENGL 110, junior status.

BUAD 310H: 3 s.h.**H:Economics of Justice (D, P)****BUAD 341: 3 s.h.****Managerial Finance 1 (W)**

Fundamental topics in corporate finance, including: use of financial statements, time value of money, capital budgeting and working capital management. Offered in fall, spring. Prereq: ECON 102, C- or higher in BUAD 162, and ENGL 110.

BUAD 352: 3 s.h.**Human Resource Management**

Survey course familiarizes students with the human resource function. Topics include recruitment, orientation, training, compensation, safety, performance evaluation and labor relations. Offered in fall, spring. Prereq: C- or higher in BUAD 251.

BUAD 352H: 3 s.h.**H:Human Resource Management**

H:Human Resource Management

BUAD 358: 3 s.h.**Management Science**

An introduction to management science techniques in order to facilitate quantitative reasoning as an aid for managerial decision making. Emphasis on developing analytical skills. Decision-making cases and problems presented with the aid of computers. Topics include linear programming (including modeling, computer solution and sensitivity analysis), assignment/transportation/transshipment problems, project management techniques (PERT/CPM), queuing models, simulation, inventory control models, decision theory, analytic hierarchy process (AHP) and Markov processes. Prereq: MATH 235, and BUAD 206 (306).

BUAD 372H: 3 s.h.**Hon:Organizational Behavior**

BUAD 455: 3 s.h.**Strategy and Policy (W)**

Theory and practice of modern strategic management. Includes strategy formulation, planning, decision techniques, organizational design to implement change and control systems to monitor change. Prereq: BUAD 202, 206, 307, 231, 358, 341, 352 and ENGL 110.

BUAD 488A: 3 s.h.**Seminar in Accounting and Finance (W)**

Research on a topic including preparation and critical analysis of a paper. Topic need not be from student's option. Offered in fall, spring. Prereq: ENGL 110 and senior status. Prerequisites will vary.

BUAD 488B: 3 s.h.**Seminar in Management and Marketing (W)**

Research on a topic including preparation and critical analysis of a paper. Topic need not be from student's option. Offered in fall, spring. Prereq: ENGL 110 and senior status. Prerequisites will vary.

FIN 179: 3 s.h.**Experimental**

Experimental Finance Course

FIN 203: 3 s.h.**Personal Finance (G3)**

Theoretical tools of economics and business management are applied to personal financial planning and management. Topics include financial planning, consumer credit, budgeting, insurance, retirement and estate planning.

FIN 203H: 3 s.h.**Hon: Personal Finance (G3)****FIN 279: 3 s.h.****Experimental**

Experimental Course in Finance

FIN 342: 3 s.h.**Managerial Finance 2**

Advanced topics in corporate finance, including risk analysis of operating and financial decisions, capital budgeting and cash flow analysis. Offered fall. Prereq: MATH 235 and BUAD 206 or ECON 332 or ECON 333 and C- or higher in BUAD 341,

FIN 343: 3 s.h.**Real Estate Fundamentals**

Introduces special characteristics of real estate and how real estate decisions are made. Includes real estate terms, laws, commercial and residential markets, and property valuation. Offered periodically. Prereq: C- or higher in BUAD 341.

FIN 344: 3 s.h.**International Finance**

The international financial environment and a comprehensive analysis of foreign exchange rates and instruments. Topics include the international monetary system, balance of payments, contemporary currency trading and quotation, forward contracts, international parity conditions and foreign currency options. Offered annually. Prereq: C- or higher in BUAD 341.

FIN 345: 3 s.h.**Investment Analysis**

Analysis of investment objectives and functioning of capital markets, including market trading strategies and techniques of portfolio management. Study of stocks and bonds, mutual funds, options and futures. Offered annually. Prereq: C- or higher in BUAD 341.

FIN 346: 3 s.h.**Princip of Bank Administration**

Bank investment practices, liquidity management, deposits acquisition and administration, branch location decisions, optimal bank capital, mathematical model in banking, management science in banking, computers and checkless banking. Offered periodically. Prereq: C- or higher in BUAD 341.

FIN 347: 3 s.h.**Risk and Insurance**

Introduces principles and mechanics of insurance. Includes the conceptual and historical framework of insurance and the actual mechanics of insurance risk management as they pertain to personal and business needs. Offered periodically. Prereq: C- or higher in BUAD 341.

FIN 379: 3 s.h.**Experimental**

Experimental Course in Finance

FIN 405: 3 s.h.**Topics in Finance**

Advanced, innovative, or exploratory topics and disciplines within finance. Specific content items developed by instructor. Most topics will be for business majors only. Offered periodically. Prerequisites may vary. Consult the current course offering.

FIN 422: 3 s.h.**Behavioral Finance**

A comprehensive examination of the relatively new discipline of behavioral finance. Designed to expose students to the decision-making biases that cause investors and managers to deviate from actions predicted by economic and financial models, and that cause financial markets to behave in ways counter to these theories. Experiments are used throughout the semester to help students better understand the effects of human behavior and conflicting goals on individual investors and market outcomes. Prerequisites a C- or better in FIN203 and BUAD341.

FIN 445: 3 s.h.**Financial Markets**

Classical and modern thought on markets. Numerous modern markets are investigated in terms of functionality, strategy and development. Offered annually. Prereq: ECON 101 and C- or higher in BUAD 341.

FIN 447: 3 s.h.**Cases in Finance (W)**

Continuation of the study of financial theory and its application using the case method. Real-world financial problems for which elementary or traditional analysis may be deficient. Emphasizes the interrelationship of finance to other areas of study (such as marketing, personnel). Offered spring. Prereq: C- or higher in FIN 342 and ENGL 110.

FIN 479: 3 s.h.**Experimental**

Experimental Course in Finance

FIN 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

INTB 179: 3 s.h.**Experimental**

Experimental Course International Business

INTB 279: 3 s.h.**Experimental**

Experimental Course in International Business

INTB 321A: 3 s.h.**Intro to International Business (G3)**

A survey of international business (IB). Introduces major issues, institutions, opportunities, problems and managerial processes unique to international business. Includes micro and macro context, theory, impact of environmental factors on international business operations, and identification and analysis of managerial issues. Course content relates to current events. Offered in fall, spring. Prereq: ECON 101, 102.

INTB 321B: 3 s.h.**Intro to International Business (G3)**

A survey of international business (IB). Introduces major issues, institutions, opportunities, problems and managerial processes unique to international business. Includes micro and macro context, theory, impact of environmental factors on international business operations, and identification and analysis of managerial issues. Course content relates to current events. Offered in fall, spring. Prereq: ECON 101, 102.

INTB 379: 3 s.h.**Experimental**

Experimental Course in International Business

INTB 405: 3 s.h.**Topics in Internatl Business**

Advanced, innovative, or exploratory topics and disciplines within international business. Specific content items developed by instructor. Most topics will be for business majors only. Offered periodically. Prerequisites may vary. Consult the current course offering.

INTB 479: 3 s.h.**Experimental**

Experimental Course in International Business

INTB 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

Accounting Minor

The Accounting Minor is for non-business majors who want a better understanding accounting systems and financial information, but without pursuing a full degree in business. It is a popular choice and provides important knowledge for students pursuing a variety of majors including Math (Actuarial Science), Computer Science, Pre-Law, and Economics.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Accounting, B.S.

Accounting is your path to challenging and rewarding careers in industry, public accounting, or not-for-profit and public sector organizations. The

curriculum includes courses in intermediate and cost accounting, tax, audit, information systems, fraud awareness and more. Upon graduation students have available all the necessary coursework to sit for the CPA, CMA, CIA or CFE examinations. Most courses incorporate review material for professional certifications.

Business Administration, B.S. - General Business

The BS in General Business program equips students with the essential elements of Accounting, Finance, International Business, Management and Marketing to pursue employment in any business or organization, or to continue their professional studies.

Major in Business Administration

Code	Title	Hours
BUSINESS FOUNDATIONS BLOCK		9
BUAD 161	Intro to Financial Accounting (C- minimum)	
BUAD 162	Intro to Managerial Accounting (C- minimum)	
BUAD 202	Legal Environment of Business (C- minimum)	
BUSINESS CORE REQUIREMENTS		24
A grade of C- or higher is required in BUAD 231 (Marketing), BUAD 251 (Management), and BUAD 341 (Finance) as a pre-requisite for the upper level courses in the respective areas.		
BUAD 206	Business Research Methods	
BUAD 231	Principles of Marketing	
BUAD 251	Principles of Management	
BUAD 307	Management Information Systems	
BUAD 341	Managerial Finance 1	
BUAD 352	Human Resource Management	
BUAD 358	Management Science	
BUAD 455	Strategy and Policy	
DEPARTMENTAL ELECTIVES - Choose 9 hours from:		9
Any ACCT course(s)		
Any BUAD course(s)		
Any FIN course(s)		
Any MGMT course(s)		
Any MKTG course(s)		
Any ACFN course(s)		
Any MGМК course(s)		
Any INTB course(s)		
Any INTE course(s)		
Note: This requirement may not be satisfied with BUAD 161, BUAD 162, BUAD 202, BUAD 206, BUAD 231, BUAD 251, BUAD 307, BUAD 341, BUAD 352, BUAD 358, or BUAD 455.		
For 'Departmental Electives', you may select any three BUAD courses (including COOP/Internships), or you may also take certain approved non-business elective courses to fill this requirement. You may click here to see the current list of non-business electives. Declaring more than one business concentration, a second major, or a minor will waive departmental electives.		
OPTION DECLARED		
Concentration in General Business - See separate block		
Total Hours		42

Concentration in General Business

Code	Title	Hours
Electives for General Business - Choose 15 hours from:		15
Any 3-level ACCT course(s)		
Any 4-level ACCT course(s)		
Any 3-level FIN course(s)		
Any 4-level FIN course(s)		
Any 3-level MGMT course(s)		
Any 4-level MGMT course(s)		
Any 3-level MKTG course(s)		
Any 4-level MKTG course(s)		
Any 3-level INTB course(s)		
Any 4-level INTB course(s)		
BUAD 488A	Seminar in Accounting and Finance	
BUAD 488B	Seminar in Management and Marketing	
Internships/Co-ops numbered 300 and 400 will not count as General Business concentration electives. However, they may be used as Departmental electives in the major requirements.		
Total Hours		15

Req Related for Business Administration

Code	Title	Hours
Required Related Credits		
	true	
ECON 101	Principles of Macroeconomics (C- minimum)	3
ECON 102	Principles of Microeconomics	3
Data Visualization and Communication - Choose 1 of the following:		4
MATH 256	Data Visualization and Communication	
MATH 279	Experimental (Data Visualization Comm)	
MATH 235	Survey of Statistics	3
Total Hours		13

Business Administration, B.S. - International Business

The International Business concentration, which is housed within the General Business major, emphasizes the importance of foundations in finance, accounting, management and marketing to ground a growing perspective of international business. A degree in International Business enables students to succeed in organizations throughout our interconnected world. This program of study prepares students to work in international businesses or global financial firms. Millersville University's General Business program is internationally accredited by the Accreditation Council for Business Schools and Programs (ACBSP).

Major in Business Administration

Code	Title	Hours
BUSINESS FOUNDATIONS BLOCK		9
BUAD 161	Intro to Financial Accounting (C- minimum)	
BUAD 162	Intro to Managerial Accounting (C- minimum)	
BUAD 202	Legal Environment of Business (C- minimum)	
BUSINESS CORE REQUIREMENTS		24

A grade of C- or higher is required in BUAD 231 (Marketing), BUAD 251 (Management), and BUAD 341 (Finance) as a pre-requisite for the upper level courses in the respective areas.

BUAD 206	Business Research Methods
BUAD 231	Principles of Marketing
BUAD 251	Principles of Management
BUAD 307	Management Information Systems
BUAD 341	Managerial Finance 1
BUAD 352	Human Resource Management
BUAD 358	Management Science
BUAD 455	Strategy and Policy

DEPARTMENTAL ELECTIVES - Choose 9 hours from:		9
Any ACCT course(s)		
Any BUAD course(s)		
Any FIN course(s)		
Any MGMT course(s)		
Any MKTG course(s)		
Any ACFN course(s)		
Any MGMC course(s)		
Any INTB course(s)		
Any INTE course(s)		

Note: This requirement may not be satisfied with BUAD 161, BUAD 162, BUAD 202, BUAD 206, BUAD 231, BUAD 251, BUAD 307, BUAD 341, BUAD 352, BUAD 358, or BUAD 455.

For 'Departmental Electives', you may select any three BUAD courses (including COOP/Internships), or you may also take certain approved non-business elective courses to fill this requirement. You may click here to see the current list of non-business electives. Declaring more than one business concentration, a second major, or a minor will waive departmental electives.

OPTION DECLARED

Concentration in International Business - See separate block

Total Hours **42**

Concentration in International Business-BUAD

Code	Title	Hours
Introduction to International Business - Choose 1 of the following:		3
INTB 321A	Intro to International Business	
INTB 321B	Intro to International Business	
International Business Directed Electives - Choose 3 of the following:		9
FIN 344	International Finance	
MGMT 357	International Management	
MKTG 435	International Marketing	
ECON 325	International Economics	
International Business Electives - Choose 1 class from:		
ANTH 121	Cultural Anthropology	
Any 33-level MKTG course(s)		
Any 43-level MKTG course(s)		
Any 34-level FIN course(s)		
Any 44-level FIN course(s)		
Any 35-level MGMT course(s)		
Any 45-level MGMT course(s)		
Any 36-level ACCT course(s)		

Any 46-level ACCT course(s)	
BUAD 488A	Seminar in Accounting and Finance
BUAD 488B	Seminar in Management and Marketing
GEOG 222	Economic Geography
GOVT 251	Introduction to Global Politics
GOVT 325	Modern Asia
GOVT 351	International Law
Total Hours	12

Req Related for Business Administration

Code	Title	Hours
Required Related Credits		
true		
ECON 101	Principles of Macroeconomics (C- minimum)	3
ECON 102	Principles of Microeconomics	3
Data Visualization and Communication - Choose 1 of the following:		4
MATH 256	Data Visualization and Communication	
MATH 279	Experimental (Data Visualiation Comm)	
MATH 235	Survey of Statistics	3
Recommended Foreign Language Proficiency		0
Foreign language courses at the intermediate level or above.		
Students with an International Business option are recommended to fulfill the business electives by attaining proficiency in a foreign language at the intermediate level or above.		
Total Hours		13

Finance Minor

The Finance Minor is for non-business majors who want a better understanding corporate finance, investments, financial modeling, and financial markets pursuing a full degree in business. It is a popular choice and provides important knowledge for students pursuing a variety of majors including Math (Actuarial Science), Computer Science, Pre-Law, and Economics.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Finance

Code	Title	Hours
FINANCE MINOR FOR NON-BUSINESS MAJORS		
	Intro to Business - Choose 1 of the following:	3

BUAD 101A	Introduction to Business	
BUAD 101B	Introduction to Business	
BUAD 161	Intro to Financial Accounting	3
BUAD 162	Intro to Managerial Accounting	3
BUAD 341	Managerial Finance 1	3
FIN 342	Managerial Finance 2	3
Investment Analysis or Financial Markets - Choose 1 of the following:		3
FIN 345	Investment Analysis	
FIN 445	Financial Markets	
Total Hours		18

Finance, B.S.

The BS in Finance offers a variety of courses including corporate and international finance, financial markets, spreadsheets modeling and investments. It provides the tools, skills and knowledge necessary for careers in corporate finance, banking, wealth management, public finance and more. While in school students are encouraged to sit for a variety of professional licensing exams including the Series 6, 7, 63, and 66 exams.

Major in Finance

Code	Title	Hours
BUSINESS FOUNDATIONS BLOCK		
BUAD 161	Intro to Financial Accounting (C- minimum)	3
BUAD 162	Intro to Managerial Accounting (C- minimum)	3
BUAD 202	Legal Environment of Business (C- minimum)	3
REQUIRED BUSINESS COURSES		
A grade of C- or higher is required in BUAD 231 (Marketing), BUAD 251 (Management), and BUAD 341 (Finance) as a pre-requisite for the upper level courses in the respective areas.		
BUAD 206	Business Research Methods	3
BUAD 231	Principles of Marketing	3
BUAD 251	Principles of Management	3
BUAD 307	Management Information Systems	3
BUAD 341	Managerial Finance 1	3
BUAD 352	Human Resource Management	3
BUAD 358	Management Science	3
BUAD 455	Strategy and Policy	3
UPPER LEVEL FINANCE COURSES		
FIN 342	Managerial Finance 2	3
FIN 447	Cases in Finance	3
Internship in Finance - Choose 3 hours from:		3
ACFN 300	Co-Op Ed Exp in Acct/Fin	
Finance Electives - Choose 15 hours from:		15
FIN 203	Personal Finance	
Any 34-level FIN course(s)		
Any 44-level FIN course(s)		
FIN 405	Topics in Finance	
BUAD 488A	Seminar in Accounting and Finance (Seminar: Future of Business)	
ACCT 368	Business Applications: Excel	
DEPARTMENTAL ELECTIVES		
undefined - Choose 6 hours from:		6
Any ACCT course(s)		

Any BUAD course(s)
Any FIN course(s)
Any MGMT course(s)
Any MKTG course(s)
Any ACFN course(s)
Any MGМК course(s)
Any INTB course(s)
Any INTE course(s)
Note: This requirement may not be satisfied with BUAD 161, BUAD 162, BUAD 202, BUAD 206, BUAD 231, BUAD 251, BUAD 307, BUAD 341, BUAD 352, BUAD 358, or BUAD 455.

For 'Departmental Electives', you may select any three BUAD courses (including COOP/Internships), or you may also take certain approved non-business elective courses to fill this requirement. You may click here to see the current list of non-business electives. Declaring a concentration, a second major, or a minor will waive departmental electives.

Total Hours **63**

Req Related for Finance

Code	Title	Hours
ECON 101	Principles of Macroeconomics	3
ECON 102	Principles of Microeconomics	3
Data Visualization and Communication - Choose 1 of the following:		4
MATH 256	Data Visualization and Communication	
MATH 279	Experimental (Data Visualization Comm)	
MATH 235	Survey of Statistics	3
WRIT 316	Business Writing (AW)	3
Total Hours		16

Finance, B.S. - Wealth Management

The wealth management concentration builds upon Millersville's very successful finance program. The demand for financial planners is on an upward trajectory in the United States, lifted by rising income levels and life expectancies. These trends are exacerbated in our area; the Lancaster region's demographics show an increasing population, driven in part by families and retirees moving from the Maryland-DC area. This program's curriculum is designed to build students' expertise in portfolio choice, risk, behavior-based investing decisions, and financial literacy. The wealth management concentration helps our students enter this field with the business skills and interpersonal training to excel in their careers.

Major in Finance

Code	Title	Hours
BUSINESS FOUNDATIONS BLOCK		9
BUAD 161	Intro to Financial Accounting (C- minimum)	
BUAD 162	Intro to Managerial Accounting (C- minimum)	
BUAD 202	Legal Environment of Business (C- minimum)	
REQUIRED BUSINESS COURSES		24
A grade of C- or higher is required in BUAD 231 (Marketing), BUAD 251 (Management), and BUAD 341 (Finance) as a pre-requisite for the upper level courses in the respective areas.		
BUAD 206	Business Research Methods	
BUAD 231	Principles of Marketing	
BUAD 251	Principles of Management	

BUAD 307	Management Information Systems
BUAD 341	Managerial Finance 1
BUAD 352	Human Resource Management
BUAD 358	Management Science
BUAD 455	Strategy and Policy

CONCENTRATION IN WEALTH MANAGEMENT - See separate block

Wealth Management Concentration – Departmental Electives Waived

For 'Departmental Electives', you may select any three BUAD courses (including COOP/Internships), or you may also take certain approved non-business elective courses to fill this requirement. You may click here to see the current list of non-business electives. Declaring a concentration, a second major, or a minor will waive departmental electives.

Total Hours **33**

Concentration in Wealth Management

Code	Title	Hours
FIN 203	Personal Finance	3
FIN 422	Behavioral Finance	3
FIN 345	Investment Analysis	3
FIN 347	Risk and Insurance	3
Series Exams Capstone		3
FIN 405	Topics in Finance (Topics: Series Exams Capstone)	
Internship		12
ACFN 300	Co-Op Ed Exp in Acct/Fin	
Wealth Management Electives - Choose 2 of the following:		6
ACCT 367	Federal Income Tax 2	
ECON 215	Money, Credit, and Banking	
MKTG 333	Personal Selling	
FIN 445	Financial Markets	
FIN 405	Topics in Finance (Topics: Financial Planning)	

Choose any 2 Business Electives - Choose 2 classes from:

Any ACCT course(s)
Any BUAD course(s)
Any FIN course(s)
Any MGMT course(s)
Any MKTG course(s)
Any ACFN course(s)
Any MGМК course(s)
Any INTB course(s)

Total Hours **33**

Req Related for Finance

Code	Title	Hours
ECON 101	Principles of Macroeconomics	3
ECON 102	Principles of Microeconomics	3
Data Visualization and Communication - Choose 1 of the following:		4
MATH 256	Data Visualization and Communication	
MATH 279	Experimental (Data Visualization Comm)	
MATH 235	Survey of Statistics	3
WRIT 316	Business Writing (AW)	3
Total Hours		16

General Business Minor

The General Business Minor is for non-business majors who want a broad understanding of business, but without pursuing a full degree in business. It is a popular choice and provides important knowledge for students pursuing a variety of majors.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Business Administration/General Business

Code	Title	Hours
Intro to Business - Choose 1 of the following:		3
BUAD 101A	Introduction to Business	
BUAD 101B	Introduction to Business	
BUAD 161	Intro to Financial Accounting	3
BUAD 162	Intro to Managerial Accounting	3
BUAD 231	Principles of Marketing	3
BUAD 251	Principles of Management	3
Managerial Finance or Personal Finance - Choose 1 of the following:		3
BUAD 341	Managerial Finance 1	
FIN 203	Personal Finance	
Total Hours		18

Management and Marketing management and marketing department

The Management & Marketing Department is one of the largest at MU, with over 400 students enrolled in our core programs including Marketing, Management and Information Technology. We have fully online degree completion programs, an undergraduate certificate in marketing specializations in Human Resource Management and Cybersecurity. We offer skills that are sought after by businesses large and small in both the for profit and non-profit sectors. We offer a wide array of courses in the business core curriculum as well as a number of elective courses for business majors, minors and students seeking general electives, or simply greater business knowledge.

Our eight faculty and numerous adjuncts are experts in their field. You will find them to be accessible, helpful and supportive on your journey toward graduation. We are also accommodating and flexible with our course offerings, by actively offering a variety of courses in the summer and winter terms, and many of our classes are also available online.

the programs

- Cybersecurity Minor (p. 188)
- Information Technology Minor (p. 188)
- Information Technology, B.S. (p. 187)
- Information Technology, B.S. - Cybersecurity (p. 188)
- Management Minor (p. 189)
- Management, B.S. (p. 190)
- Management, B.S. - Human Resources Management (p. 190)
- Marketing Minor (p. 191)
- Marketing, B.S. (p. 191)
- Marketing, Sub-Baccalaureate Certificate (p. 192)

the faculty

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B.S., Shippensburg University, 2004; M.B.A., Temple University, 2005;
Ph.D., Temple University, 2009

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B.S., Kansas State University, 1997; M.B.A., Fontbonne University, 1999;
Ph.D., University of South Florida, 2006

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B.S., Tehran College of Insurance, 1975; M.B.A., Oklahoma City University, 1977; Ph.D., University of Arkansas, 1987

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B.A., University of Kansas, 2007; M.S., Sogang University (South Korea), 2016; Ph.D., University of Rhode Island, 2021

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B.A., Northwestern University, 1978; M.B.A., Indiana University, 1980;
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B.S. Rajiv Gandhi University (India), 2003; M.S., University of Texas-Pan American, 2005; Ph.D., University of Texas-Rio Grande Valley, 2011

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the courses

BUAD 101A: 3 s.h.

Introduction to Business (G3)

Introduction of basic business concepts such as institutional setting, organizational structures, decision making, accounting, finance, labor relations, management, marketing and government-business relations. No credit for BUAD majors, except as departmental elective if taken before becoming a BUAD major. Offered in spring, fall.

BUAD 101B: 3 s.h.**Introduction to Business (G3)**

Introduction of basic business concepts such as institutional setting, organizational structures, decision making, accounting, finance, labor relations, management, marketing and government-business relations. No credit for BUAD majors, except as departmental elective if taken before becoming a BUAD major. Offered in spring, fall.

BUAD 161: 3 s.h.**Intro to Financial Accounting**

Examination of the account cycle and systems and procedures for developing financial information; introduction to the conceptual and theoretical foundation of financial information systems; and interpretation of financial statements. Offered in fall, spring. Prereq: MATH 101 or MATH placement beyond MATH 101 (MATH 151, 155H, 160, 161, 163H).

BUAD 162: 3 s.h.**Intro to Managerial Accounting**

Problem-oriented introduction to the interpretation and application of accounting information from the viewpoint of management with emphasis on planning and control and long-range strategies. Offered in fall, spring. Prereq: C- or higher in BUAD 161.

BUAD 202: 3 s.h.**Legal Environment of Business (G3)**

The American legal system and its impact on business. Includes the court system, litigation and alternative dispute resolution, contract law, torts in the business environment, product and service liability, property, and criminal law. Offered in fall, spring.

BUAD 202H: 3 s.h.**Hon: Legal Environ/Business (G3)****BUAD 206: 3 s.h.****Business Research Methods**

The theory and practice of a number of widely used research techniques as an aid to decision making. Business application will be emphasized with cases and problems from the areas of management, marketing, finance and accounting. Uses computer programs for data analysis, interpretation and presentation of research results. Prereq: MATH 235.

BUAD 231: 3 s.h.**Principles of Marketing**

Explores the role of marketing in the free enterprise system. Defines marketing and its relationship to society. Reviews the controllable elements of the marketing mix: product, place, promotion, and price. Explains marketing concepts and terminology. Applies terminology and concepts to real world problems. Covers basic analytic skills needed to solve marketing problems. Offered in fall, spring. Prereq: C- or better in ECON 101 and 102.

BUAD 231H: 3 s.h.**H:Principles of Marketing**

H:Principles of Marketing

BUAD 251: 3 s.h.**Principles of Management (G3, W)**

Examines management processes of planning, organizing, leading and controlling and provides basic knowledge of management history, managers' roles and functions, environment influences, effective decision making, leadership and team management, ethical and social responsibilities, and current trends in management. Prereq: C- or higher in ECON 101, 102 and ENGL 110.

BUAD 251H: 3 s.h.**Hnrs:Principles of Managemnt (G3, W)**

Hnrs:Organizatn and Managemnt

BUAD 307: 3 s.h.**Management Information Systems**

Technology, application and management of computer-based management information systems. Covers identification of the need for management information, the assignment of resources and establishment of an information system. Includes case studies. Offered in fall, spring. Prereq: BUAD 162, 251.

BUAD 310: 3 s.h.**Economics of Justice (D, P)**

Economic concepts and models used to explain legal principles. The effects of legal decision-making on economic efficiency. Topics include property, contracts, torts and criminal law. Offered annually. Prereq: BUAD 202, ECON 102, COMM 100, ENGL 110, junior status.

BUAD 310H: 3 s.h.**H:Economics of Justice (D, P)****BUAD 341: 3 s.h.****Managerial Finance 1 (W)**

Fundamental topics in corporate finance, including: use of financial statements, time value of money, capital budgeting and working capital management. Offered in fall, spring. Prereq: ECON 102, C- or higher in BUAD 162, and ENGL 110.

BUAD 352: 3 s.h.**Human Resource Management**

Survey course familiarizes students with the human resource function. Topics include recruitment, orientation, training, compensation, safety, performance evaluation and labor relations. Offered in fall, spring. Prereq: C- or higher in BUAD 251.

BUAD 352H: 3 s.h.**H:Human Resource Management**

H:Human Resource Management

BUAD 358: 3 s.h.**Management Science**

An introduction to management science techniques in order to facilitate quantitative reasoning as an aid for managerial decision making. Emphasis on developing analytical skills. Decision-making cases and problems presented with the aid of computers. Topics include linear programming (including modeling, computer solution and sensitivity analysis), assignment/transportation/transshipment problems, project management techniques (PERT/CPM), queuing models, simulation, inventory control models, decision theory, analytic hierarchy process (AHP) and Markov processes. Prereq: MATH 235, and BUAD 206 (306).

BUAD 372H: 3 s.h.**Hon:Organizational Behavior****BUAD 455: 3 s.h.****Strategy and Policy (W)**

Theory and practice of modern strategic management. Includes strategy formulation, planning, decision techniques, organizational design to implement change and control systems to monitor change. Prereq: BUAD 202, 206, 307, 231, 358, 341, 352 and ENGL 110.

BUAD 488A: 3 s.h.**Seminar in Accounting and Finance (W)**

Research on a topic including preparation and critical analysis of a paper. Topic need not be from student's option. Offered in fall, spring. Prereq: ENGL 110 and senior status. Prerequisites will vary.

BUAD 488B: 3 s.h.**Seminar in Management and Marketing (W)**

Research on a topic including preparation and critical analysis of a paper. Topic need not be from student's option. Offered in fall, spring. Prereq: ENGL 110 and senior status. Prerequisites will vary.

INTE 120: 4 s.h.**Integrated Information Technology Application Projects**

Introduction to the use of information technology to retrieve, filter, process, classify, sort, and evaluate data and information in a business environment. Developing word processing, spreadsheets, database, scripting, and presentation skills to create integrated projects for business and workplace environments.

INTE 130: 4 s.h.**Fundamentals of Information Technology**

This course provides students with a working knowledge of the terminology, processes, and components associated with information technology. Students will be introduced to the creation, organization, analysis, storage, retrieval, representation, and transmission of data and information as well as work force considerations, and related societal and ethical issues with respect to IT.

INTE 230: 4 s.h.**Network Concepts, Security and Administration**

An introduction to computer network concepts that includes fundamental protocols and administration. Computer network communications will be discussed including LAN and WAN topologies, protocols and services, such as TCP/IP, and Ethernet, within the context of the OSI Reference Model, multimedia, and content distribution networks. Topics in network management will also be covered, including users/groups, file permissions, system maintenance, and trouble shooting. Network management, packet analyzer, and network simulation tools may be used.

INTE 240: 4 s.h.**The Fundamentals of Web Technology**

Introduction to web-based information systems that includes the principles and practices of website development process, website project implementation, and evaluation of web-based applications including related software, databases, programming interfaces, and platforms. Security and privacy issues related to web-based information systems are explored. Applications of architectural principles of scalability, reliability, and redundancy in website development are discussed.

INTE 255: 3 s.h.**Intro to Data Analytics**

Introduction to data analysis techniques and programming that enables real-time decision making in IT organizations. Includes skills and applications in pre-processing, preparing, and reporting data for further analysis. (Cross-listed with MATH 255, credit may not be received for both courses.)

INTE 300: 3-12 s.h.**Co-Op/Internship in INTE**

Internship in Information Technology

INTE 335: 3 s.h.**Advanced Computer Networking**

This is an advanced-level course on computer networks. This course is the continuation discussion on INTE 230 Network Concepts. The course has a comprehensive overview on advanced topics in network protocols, and networked systems. This course starts with a brief overview of TCP/IP protocol suite and reference model. The main discussions are fundamentals of network technology, Routing Algorithms, Routing Among the ISPs, Software Defined Networking (SDN), Network Management and SNMP, Error-Detection and Correction Techniques in Link Layer, Link-Layer Addressing and ARP, Virtual Local Area Networks (VLANs), Data Center Networking, Wireless and Mobile Networks, Mobility Management, and Security in Computer Networks. Some Network security topics are discussed such as: Principles of Cryptography, Digital Signatures, End-Point Authentication, Securing E-Mail, Transport Layer Security (TLS), Virtual Private Networks (VPNs), and Firewalls. Prerequisites: INTE 230

INTE 350: 4 s.h.**Cybersecurity**

Investigate vulnerability of computer networks, systems, and computer applications. Learn methods of mitigation and/or prevention of cybercrime. Attributes of cybercrime such as virus attacks, identity theft, electronic funds transfers, and phishing will be examined along with an introduction to the cybersecurity script programming paradigm.

INTE 360: 4 s.h.**IT Risk Management and Security**

Explores Networking Security from the perspective of risk management to develop strategies to mitigate and manage risks. Focuses on assessment strategies for effective mitigation measures and risk management practices in terms of cybersecurity. Risk Management Fundamentals and Managing Risks as Threats, Vulnerabilities, and Exploits will be covered and methods on how they are applied in cyber security decisions will be investigated.

INTE 365: 3 s.h.**Health Care Information Management**

Students will apply fundamental skills in information technology to database design, data structures, software applications, and their management functions in health services organizations. Techniques in database design and management in the health care system will be discussed.

INTE 400: 3-12 s.h.**Co-Op/Internship INTE**

Internship in Information Technology

INTE 410: 4 s.h.**IT Project Management**

This course covers technical and behavioral aspects of the successful management of information systems developments. Topics include needs identification, system project manager and team, system project organizations, project communications, system project planning, scheduling, control, associated costs, and using project management software tools. Examples of IT project management process will be explored for different industry lines with respect to system development activities and System Development Life Cycle. INTE 360 is recommended.

INTE 420: 4 s.h.**Fundamentals of Operating Systems Management**

This is an introduction to the foundational principles of operating systems. Topics include system management in memory, processor, process and thread mechanics, devices, network, file and directory, graphical and command line user interfaces. Essentials for effective administration and maintenance of an operating system and its services will be discussed. In addition, students will learn to install, manage, and secure an operating system.

INTE 425: 3 s.h.**Data Explor and Visualization**

Students will learn dataset elements, data collection, representation and querying techniques, visual variables and statistical tools for graphing, and preparation of data for further analysis, with emphasis on issues related to healthcare. Students will also be introduced to data science tools and related coding techniques.

INTE 435: 3 s.h.**IT Security, Privacy & Ethics**

Examination of information technology security and privacy issues in the context of law and ethics. This course explores the civil and common law issues that apply to information technology. The course studies jurisdictional, statutes, and constitutional issues related to cybercrime and privacy issues in the information age.

INTE 440: 4 s.h.**Human-Computer Interaction**

This course studies the effective and productive information systems, including interactive computer systems, input and output devices, screen layouts, machine design, health issues, organizational impacts, and access for people with disabilities. Topics include interaction system design, conceptualizing interaction, cognitive aspect of users, social interaction, emotional interaction with systems, and interfaces. The process of designing user-friendly interfaces will be discussed including data gathering, data analysis, interpretation, and presentation.

INTE 465: 3 s.h.**Data Analytics in Health Care**

An introduction into the uses of data analytics in population health practices and their administration. Students will explore the development of validated predictive analytics and their application in clinical interventions. The intersection of data analytics with ethics will also be discussed.

INTE 466: 3 s.h.**Ethical Hacking and Penetration Testing**

Discussion of advanced topics in Cybersecurity, such as security testing, system defense, and countermeasures. The implications of information security vulnerabilities in systems, networks, and applications are explored. Students will be able to identify solutions before adversaries exploit the flaws. In this course, students discover techniques that attackers use to compromise network and systems security. Demonstrating how an adversary could hack into systems by simulate a hack of systems to uncover and exploit vulnerabilities in an isolated penetration test computer laboratory. The course offers learning on how to protect network and systems through hands-on lab activities utilizing the tools and methods that intruders use. Methods of security assessments for the strength of the organizational cybersecurity posture are discussed. Additional topics include firewall and intrusion detection system exploration, denial of service attack issues, Internet security mechanisms, spoofing, session hijacking, and sniffers.

INTE 489: 1-4 s.h.**Honors Course**

Honors Course Information Technology

INTE 498: 1-4 s.h.**Independent Study****INTE 499: 1-4 s.h.****Departmental Honors**

Departmental Honors Thesis Course

MGMK 300: 3-12 s.h.**Co-Op Ed Exp in Mgmt/Mktg**

Cooperative Education in Management and/or Marketing

MGMK 400: 3-12 s.h.**Co-Op Ed Exp in Mgmt/Mktg**

Cooperative Education Experience in Management/Marketing

MGMK 489: 1-4 s.h.**Honors Course**

Honors Course

MGMK 498: 1-4 s.h.**Independent Study**

Independent Study. See catalog or department for eligibility and registration information.

MGMK 500: 3-12 s.h.**Co-Op Ed Exp in Mgmt/Mktg**

Cooperative Education Experience in Management/Marketing

MGMT 179: 3 s.h.**Experimental**

Experimental Course in Management

MGMT 279: 3 s.h.**Experimental**

Experimental Course in Management

MGMT 351: 3 s.h.**Organization Theory & Design**

Introduction of the perspective of business as a system dedicated to the reduction of uncertainties. Focus is on determining strategy and building a structure that supports organizational effectiveness. Factors considered include the external environment, interorganizational relationships, globalization, internal technologies and control systems, organizational life cycle, cultural and ethical values, innovation, and change management. Prereq: C- or higher in BUAD 251.

MGMT 353: 3 s.h.**Labor-Management Relations**

Course covers roles of management and labor unions using an analytical framework for labor relations problems, contract negotiations and administration. Offered periodically. Prereq: C- or higher in BUAD 251.

MGMT 354: 3 s.h.**Compensation Management**

Specific focus on methods for determining wages. Salaries, incentive payments, point classification and factor comparison systems are discussed in detail. Management of benefits, including hospitalization, major medical, life insurance, long-term disability and pension administration is emphasized. Offered periodically. Prereq: BUAD 352.

MGMT 355: 3 s.h.**Business and Society (G3)**

Relationships between economic decision-makers (business) and the various interests affected by their decisions (society). Emphasis on the ethical dimensions of decision making in business. Specific issues include cultural relativism, social and economic justice, private property and the choice of an economic system, corporate social responsibility, acceptable risks for consumers, acceptable risks to the environment, affirmative action and reverse discrimination, sexual harassment and comparable worth, disclosing and concealing information in sales, insider trading and whistleblowing. Offered in fall, spring.

MGMT 356: 3 s.h.**Entrepreneurial Management**

Managing a new venture while continually juggling vital issues such as: mission and values statement; goals and objectives; growth strategy; people and resources; organizational capabilities; financing strategy; vision of success. The course addresses differences between Entrepreneurial Management and Corporate Management. Prereq: BUAD 231 and C- or better in BUAD 251

MGMT 357: 3 s.h.**International Management (G3)**

Examination of management challenges associated with developing strategies and managing operations of firms whose activities extend across national boundaries. Theoretical, institutional, and case analysis of major issues, including the impact of international codes and organizations on corporate policies, the effect of government policies, techniques for assessing foreign environments, and strategies for managing international business operations are covered. Prereq: C- or higher in BUAD 251.

MGMT 371: 3 s.h.**Principles of Entrepreneurship**

Introduction to the process of turning an idea into a successful start-up business. The entrepreneurial mind-set, initiating ventures, developing the plan through understanding legal, marketing, and financial challenges, strategic growth, valuation of the enterprise, and harvesting the enterprise are studied within the context of the entrepreneurial process. Pre-req: C- or better in BUAD 231 and 251.

MGMT 372: 3 s.h.**Organizational Behavior**

Examines individual, group, and organizational-level behavioral and social science theories and applies those theories to managing human behavior in diverse organizations operating in a global business environment. Topics include personality, values, perception, motivation, teams, leadership, conflict resolution, communication, organizational culture, and change management. Pre-req: C- or better in BUAD 251

MGMT 373: 3 s.h.**Management Skills**

Focuses on developing business and interpersonal skills through engaging in activities designed to assess, practice, and improve various skill areas such as time management, teamwork, stress management, coaching and counseling, creativity, conflict management, problem solving, critical thinking, and motivating others. Students will be expected to demonstrate skills during semester activities. Prereq: C- or higher in BUAD 251.

MGMT 374: 3 s.h.**Leadership**

Examines various concepts related to leadership. Topics include trait, contingency, and behavioral approaches to leadership; values and ethics, diversity, motivation, power, and multiculturalism in leadership etc. The emphasis will be on learning and application of behaviors that are critical to effective leadership. Prereq: C- or higher in BUAD 251.

MGMT 374H: 3 s.h.**Hon: Leadership****MGMT 375: 3 s.h.****Business Web Development**

Prepares individuals to plan, manage, supervise, and market electronic business operations, products, and services provided online via the Internet. Builds skills to develop a modern business website using technologies such as HTML, CSS and JavaScript. Includes coverage of web client-server architecture, security, performance issues, monetization, website promotion, database integration through server-side scripting and commercial deployment. The course supports Entrepreneurial and Small Business Operations. Offered periodically. Prereq: BUAD 307

MGMT 379: 3 s.h.**Experimental**

Experimental Course in Management

MGMT 381: 3 s.h.**Data & Information Management**

Builds on the core concepts of data and information management. It is centered around the core skills of identifying organizational information requirements, modeling them using conceptual data modeling techniques, converting the conceptual data models into relational data models and verifying its structural characteristics with normalization techniques, and implementing and utilizing a relational database using an industrial-strength database management system. Includes coverage of basic database administration tasks. In addition to developing database applications, the course helps the students understand how large-scale packaged systems are highly dependent on the use of DBMSs. Building on the transactional database understanding, the course also provides an introduction to data and information management technologies that provide decision support capabilities under the broad business intelligence umbrella. Prereq: BUAD 307

MGMT 405: 3 s.h.**Topics in Management**

Advanced, innovative, or exploratory topics and disciplines within management. Specific content items developed by instructor. Most topics will be for business majors only. Offered periodically. Prerequisites may vary. Consult the current course offering.

MGMT 452: 3 s.h.**Operations and Supply Chain Management**

Survey of basic principles, concepts and techniques of operations management applicable to manufacturing as well as service organizations. Examines positioning, design and operating decisions and their interrelationships in the context of the overall competitive strategy of the firm. Explores current trends and innovations in operations management theory and practice. Topics include operations strategy, quality control/TQM, product/service design, capacity planning, process design, facility layout, design of work systems, location planning, supply chain management, inventory control, MRP/ERP, just-in-time systems, scheduling and project management. Prereq: MATH 130 or 235 and C- or higher in BUAD 251.

MGMT 453: 3 s.h.**Supply Chain Logistics Mgmt**

Study of the forward and reverse logistics supply chain management and arising globalization and sustainability challenges. Topics include strategic design of supply chain; management and control of flow and storage of products, services, and information from suppliers to consumers; and effective management of the reverse flow of returns, buybacks and end-of-life products to recapture value through refurbishing, remanufacturing, recycling, or proper disposal. Identification and analysis of emerging managerial issues in meeting complex mandated and competitive requirements of lean and green logistics systems. Prereq: MATH 235 and BUAD 231 (C- or higher) or BUAD 251 (C- or higher).

MGMT 454: 3 s.h.**Talent Acquisition**

Focused on providing a detailed understanding of the staffing process in organizations. The role of staffers is analyzed; major trends and the legal framework associated with staffing process is highlighted. Topics include: staffing strategies, strategic job analysis and competency modeling, forecasting, measurement, interviewing techniques etc.

MGMT 479: 3 s.h.**Experimental**

Experimental Course in Management

MGMT 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

MKTG 179: 3 s.h.**Experimental**

Experimental Course in Marketing

MKTG 279: 3 s.h.**Experimental**

Experimental Course in Marketing

MKTG 332: 3 s.h.**Consumer Behavior**

Analysis of individual and collective consumer behavior patterns both within and outside the marketplace through theoretical model building and empirical research findings. Emphasis on the role of consumer research in identifying, planning, implementing and evaluating both short-term and long-term marketing strategies. Offered annually. Prereq: C- or higher in BUAD 231.

MKTG 332H: 3 s.h.**Hon: Consumer Behavior****MKTG 333: 3 s.h.****Personal Selling**

Covers skills and knowledge required of sales representatives to understand customers' needs and make effective presentations. Includes prospecting and contacting customers, making presentations, handling objections, closing the sale and developing long-term relationships. Emphasis on individual role-play and group presentations. Offered annually. Prereq: C- or higher in BUAD 231.

MKTG 335: 3 s.h.**Advertising**

Economic and social roles of advertising in a contemporary business setting. Emphasis on the creation, development, implementation and evaluation of advertising campaigns through the analysis of creative processes, managerial techniques, media resources, budgeting methods and the concept of social responsibility. Offered annually. Prereq: C- or higher in BUAD 231.

MKTG 336: 3 s.h.**Retail Marketing**

The role of retail institutions in the marketing system. Emphasis on strategy development in the retailing context. Offered infrequently. Prereq: C- or higher in BUAD 231.

MKTG 337: 3 s.h.**Sales Force Administration**

Planning, direction and control of the sales force. Includes recruiting, selecting, training, supervising, compensating, motivating and evaluating sales representatives. Emphasis on acquisition of basic sales and managerial skills. Offered annually. Prereq: C- or higher in BUAD 231.

MKTG 379: 3 s.h.**Experimental**

Experimental Course in Marketing

MKTG 405: 3 s.h.**Topics in Marketing**

Advanced, innovative, or exploratory topics and disciplines within marketing. Specific content items developed by instructor. Most topics will be for business majors only. Offered periodically. Prerequisites may vary. Consult the current course offering.

MKTG 431: 3 s.h.**Marketing Research**

Research theory and techniques used in marketing activities. Stresses formulation of research objectives, instrument design, sample selection, data collection, statistical analysis, computer applications and report writing for managerial use. Offered fall, spring. Prereq: MATH 235, C- or higher in BUAD 231.

MKTG 431H: 3 s.h.**Hon: Marketing Research****MKTG 435: 3 s.h.****International Marketing**

The development of marketing strategy for entering and competing with businesses in foreign countries. Uniqueness of foreign markets and their impact on the marketing manager's decision-making processes are examined. Offered annually. Prereq: C- or higher in BUAD 231.

MKTG 436: 3 s.h.**Marketing Strategy**

Analysis of opportunities and problems confronting the marketing manager in decision making. Includes market segmentation, target marketing, positioning, market research, product life cycle strategies, marketing mix implementation and social responsibility. Emphasis on case analysis to bridge the gap between marketing theory and application. Offered annually. Prereq: MKTG (Formerly BUAD) 431 and 90 credits (Senior Standing).

MKTG 479: 3 s.h.**Experimental**

Experimental Course in Marketing

MKTG 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

Information Technology, B.S.

The Information Technology (INTE) major at Millersville University helps students to gain comprehensive knowledge in this field with practical hands-on skills crucial to support organizational Information Technology infrastructure and users. Information Technology is the application of technology to solve organizational problems and increase business

operation efficiency. Information Technology incorporates the selection, creation, application, communication technologies, integration, and administration of computing devices to meet the organizational needs, individual user demands, and society at large. This program addresses the importance of applied skills and practical experiences in Information Technology by allowing students to gain hands on experiences with fundamental Information Technology topics and get prepared for emerging careers in Information Technology.

Cybersecurity Minor

The Cybersecurity minor provides students with the necessary and durable skills needed to effectively protect personal and organizational information systems and tomorrow's technological threats and risks in the cyber world.

The Cybersecurity minor in the information technology program provides coursework that helps students develop technical skills to identify threats and recognize system vulnerabilities to mitigate cybersecurity risks and respond to cyberattacks. This minor teaches students the risk-management strategies, and how to identify security risks. Students will also learn how to develop communication plans for interacting with businesses and their users when it comes to integrating Cybersecurity plans.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Cybersecurity

Code	Title	Hours
This minor requires Computer Science courses (CSCI 151 or 161) that, with appropriate advising, can be incorporated into the General Education program requirements.		
INTE 120	Integrated Information Technology Application Projects	4
Network Concepts, Security and Administration or Computer Networks - Choose 1 of the following:		
INTE 230	Network Concepts, Security and Administration	4
CSCI 395	Computer Networks	
INTE 350	Cybersecurity	4
INTE 360	IT Risk Management and Security	4
Cybersecurity Elective - Choose 1 of the following:		
INTE 435	IT Security, Privacy & Ethics	3-4
INTE 465	Data Analytics in Health Care	
INTE 466	Ethical Hacking and Penetration Testing	
CSCI 415	Computer and Network Security	

Only 1 CSCI course can be used in fulfillment of the cybersecurity minor.

Total Hours

19-20

Information Technology Minor

Information Technology is the application of technology to solve organizational problems and increase business operation efficiency. Information Technology incorporates the selection, creation, application, communication technologies, integration, and administration of computing devices to meet the organizational needs, individual user demands, and society at large. This program addresses the importance of applied skills and practical experiences in Information Technology by allowing students to gain hands on experiences with fundamental Information Technology topics and get prepared for emerging careers in Information Technology.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Information Technology

Code	Title	Hours
INTE 120	Integrated Information Technology Application Projects	4
INTE 130	Fundamentals of Information Technology	4
INTE 230	Network Concepts, Security and Administration	4
INTE 360	IT Risk Management and Security	4
300- or 400- level INTE Elective - Choose 1 class from:		
Any 3-level INTE course(s)		
Any 4-level INTE course(s)		

Total Hours

16

Information Technology, B.S. - Cybersecurity

The Cybersecurity Concentration adds to the fundamental topics in Information Technology that INTE students learn through the program's core requirements, providing students with the necessary and durable skills needed to effectively protect personal and organizational information systems and tomorrow's technological threats and risks in the cyber world.

There is a huge demand in Cybersecurity experts in industry including non-tech companies. Cybersecurity training is the practice of implementing policies, processes, and technologies to protect

organizations and their critical information systems and sensitive data from digital attacks.

The Cybersecurity concentration in INTE program provides training that helps students develop technical skills to identify threats and recognize system vulnerabilities to mitigate cybersecurity risks and respond to cyberattacks. This concentration teaches students the risk-management strategies, and how to identify security risks. Students will also learn how to develop communication plans for interacting with businesses and their users when it comes to integrating Cybersecurity plans. Students will practice methods on how to align Cybersecurity strategies with business operations by the benefit of communication management. As part of risk assessment strategies, the program teaches students how to make prediction of potential problems before they turn into genuine threats.

Major in Information Technology, BS

Code	Title	Hours
INTE 120	Integrated Information Technology Application Projects	4
INTE 130	Fundamentals of Information Technology	4
INTE 230	Network Concepts, Security and Administration	4
INTE 240	The Fundamentals of Web Technology	4
INTE 360	IT Risk Management and Security	4
INTE 410	IT Project Management	4
INTE 420	Fundamentals of Operating Systems Management	4
INTE 440	Human-Computer Interaction	4
OPTION IN CYBERSECURITY - See separate block		
Total Hours		32

Option in Cybersecurity

Code	Title	Hours
CYBERSECURITY REQUIREMENTS		
Advanced Computer Networking or Computer Networks - Choose 1 of 3-4 the following:		
INTE 335	Advanced Computer Networking	
CSCI 395	Computer Networks	
INTE 350	Cybersecurity	4
INTE 435	IT Security, Privacy & Ethics	3
Internship in Cybersecurity		12
INTE 400	Co-Op/Internship INTE	
Cybersecurity Elective - Choose 2 of the following:		6-7
INTE 465	Data Analytics in Health Care	
INTE 466	Ethical Hacking and Penetration Testing	
CSCI 415	Computer and Network Security	
Total Hours		28-30

Req Related for Information Technology, BS

Code	Title	Hours
COMPUTER SCIENCE		
CSCI 161	Introduction to Programming 1 (G2)	4
CSCI 162	Introduction to Programming 2	4
CSCI 366	Database Systems	4
MATHEMATICS		
Statistics (G2) - Choose 1 of the following:		3-4
MATH 130	Elements of Statistics 1	

MATH 234	Statistics for Health Sciences	
MATH 235	Survey of Statistics	
MATH 120	Logic for Information Technology	2
ECONOMICS		
ECON 102	Principles of Microeconomics (G3)	3
RECOMMENDED COURSES (NOT REQUIRED)		
These courses are recommended, but not required. They are advised as complimentary courses which can fulfill the General Education requirements noted		
COMM 335	Communications and Emerging Technologies (G1, W)	0
MATH 151	Calculus for Management, Life and Social Sciences	0
Total Hours		20-21

Management Minor

The Management Minor is a highly flexible curriculum designed for non-business majors who wish to attain a leadership position in their chosen discipline at some point in their careers and is a popular choice for a wide array of different types of students across MU. It allows for a high degree of high level Management Course options so that students can choose the best set of classes to match their interests.

Regulations Governing Minor Course Work

- There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
- Only one course which counts toward your major may be counted toward your minor.
- Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
- At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
- No course needed for the minor may be taken Pass-Fail.
- One-half or more of the work required for the minor must be completed at Millersville University.
- No student may minor in his or her major.

Minor in Management

Code	Title	Hours
MANAGEMENT MINOR REQUIREMENTS		
Intro to Business - Choose 1 of the following:		3
BUAD 101A	Introduction to Business	
BUAD 101B	Introduction to Business	
BUAD 251	Principles of Management	3
Business Electives - Choose 4 classes from:		
BUAD 307	Management Information Systems	
BUAD 352	Human Resource Management	
Any 35-level MGMT course(s)		
Any 45-level MGMT course(s)		
Any 37-level MGMT course(s)		
MGMT 381	Data & Information Management	
MGMT 405	Topics in Management	
Total Hours		6

Management, B.S.

The Management program at Millersville University equips students for a variety of roles and allows them to enter the business field at a high-level position upon graduation. A BS in Management helps students earn a leadership role in a business or non-profit firm. All organizations require leaders, and our management program teaches the fundamentals of managing resources, hiring, training, and developing teams, as well as creating effective organizational structures. Our management program exposes students to all major functional areas of a business but also will allow you to focus on courses in human resources, entrepreneurship, operations, or leadership based on your individual career goals.

Major in Management

Code	Title	Hours
BUSINESS FOUNDATIONS BLOCK		
BUAD 161	Intro to Financial Accounting (C- minimum)	3
BUAD 162	Intro to Managerial Accounting (C- minimum)	3
BUAD 202	Legal Environment of Business (C- minimum)	3
REQUIRED BUSINESS COURSES		
A grade of C- or higher is required in BUAD 231 (Marketing), BUAD 251 (Management), and BUAD 341 (Finance) as a pre-requisite for the upper level courses in the respective areas.		
BUAD 206	Business Research Methods	3
BUAD 231	Principles of Marketing	3
BUAD 251	Principles of Management	3
BUAD 307	Management Information Systems	3
BUAD 341	Managerial Finance 1	3
BUAD 352	Human Resource Management	3
BUAD 358	Management Science	3
BUAD 455	Strategy and Policy	3
UPPER LEVEL MANAGEMENT COURSES		
MGMT 355	Business and Society	3
MGMT 357	International Management	3
MGMT 452	Operations and Supply Chain Management	3
Seminar in Business Administration - Choose 1 of the following:		
BUAD 488A	Seminar in Accounting and Finance	
BUAD 488B	Seminar in Management and Marketing	
BUAD 488A	Seminar in Accounting and Finance	
Co-Op Ed Exp in Mgmt/Mktg - Choose 3 hours from:		
MGMK 300	Co-Op Ed Exp in Mgmt/Mktg	3
Management Electives - Choose 9 hours from:		
Any 35-level MGMT course(s)		
Any 45-level MGMT course(s)		
Any 37-level MGMT course(s)		
MGMT 381	Data & Information Management	
MGMT 405	Topics in Management	
DEPARTMENTAL ELECTIVES		
undefined - Choose 6 hours from:		
Any ACCT course(s)		
Any BUAD course(s)		
Any FIN course(s)		
Any MGMT course(s)		
Any MKTG course(s)		

Any ACFN course(s)
Any MGMK course(s)
Any INTB course(s)
Any INTE course(s)
Note: This requirement may not be satisfied with BUAD 161, BUAD 162, BUAD 202, BUAD 206, BUAD 231, BUAD 251, BUAD 307, BUAD 341, BUAD 352, BUAD 358, or BUAD 455.
For 'Departmental Electives', you may select any three BUAD courses (including COOP/Internships), or you may also take certain approved non-business elective courses to fill this requirement. You may click here to see the current list of non-business electives. Declaring a concentration, a second major, or a minor will waive departmental electives.

Total Hours **63**

Req Related for Management

Code	Title	Hours
ECON 101	Principles of Macroeconomics	3
ECON 102	Principles of Microeconomics	3
Data Visualization and Communication - Choose 1 of the following:		4
MATH 256	Data Visualization and Communication	
MATH 279	Experimental (Data Visualiation Comm)	
MATH 235	Survey of Statistics	3
WRIT 316	Business Writing (AW)	3
Total Hours		16

Management, B.S. - Human Resources Management

The Human Resource Management (HRM) concentration is designed for students who are pursuing a Management Degree from the Lombardo College of Business. The concentration will prepare them for general management and human resource management careers. In general, positions in the HRM include but are not limited to the employee relations specialists, HR staff, HR directors, staffing managers, compensation and benefits managers, corporate recruiters, and training managers. Students are encouraged to become involved in the Society for Human Resource Management (SHRM) and take SHRM exam for acquiring HR certificate after completing the program and internships. Management majors who seek the concentration will take HRM specific courses instead of general management or business electives, thus keeping the total credit hours required to achieve the Bachelor's of Science in Management the whether students pursue this concentration or not.

Major in Management

Code	Title	Hours
BUSINESS FOUNDATIONS BLOCK		
BUAD 161	Intro to Financial Accounting (C- minimum)	3
BUAD 162	Intro to Managerial Accounting (C- minimum)	3
BUAD 202	Legal Environment of Business (C- minimum)	3
REQUIRED BUSINESS COURSES		
A grade of C- or higher is required in BUAD 231 (Marketing), BUAD 251 (Management), and BUAD 341 (Finance) as a pre-requisite for the upper level courses in the respective areas.		
BUAD 206	Business Research Methods	3
BUAD 231	Principles of Marketing	3

BUAD 251	Principles of Management	3
BUAD 307	Management Information Systems	3
BUAD 341	Managerial Finance 1	3
BUAD 352	Human Resource Management	3
BUAD 358	Management Science	3
BUAD 455	Strategy and Policy	3

UPPER LEVEL MANAGEMENT COURSES

MGMT 355	Business and Society	3
MGMT 357	International Management	3
MGMT 452	Operations and Supply Chain Management	3
Seminar in Business Administration - Choose 1 of the following:		3
BUAD 488A	Seminar in Accounting and Finance	
BUAD 488B	Seminar in Management and Marketing	
BUAD 488A	Seminar in Accounting and Finance	
Co-Op Ed Exp in Mgmt/Mktg - Choose 3 hours from:		3
MGMK 300	Co-Op Ed Exp in Mgmt/Mktg	

CONCENTRATION IN HUMAN RESOURCE MANAGEMENT

undefined - See separate block

For 'Departmental Electives', you may select any three BUAD courses (including COOP/Internships), or you may also take certain approved non-business elective courses to fill this requirement. You may click here to see the current list of non-business electives. Declaring a concentration, a second major, or a minor will waive departmental electives.

Total Hours 48

Concentration in Human Resource Management

Code	Title	Hours
MGMT 354	Compensation Management	3
MGMT 374	Leadership	3
Labor-Management Relation and Employment Law		3
MGMT 353	Labor-Management Relations	
MGMT 454	Talent Acquisition	3
Organizational Behavior or Management Skills - Choose 1 of the following:		3
MGMT 372	Organizational Behavior	
MGMT 373	Management Skills	

Total Hours 15

Req Related for Management

Code	Title	Hours
ECON 101	Principles of Macroeconomics	3
ECON 102	Principles of Microeconomics	3
Data Visualization and Communication - Choose 1 of the following:		4
MATH 256	Data Visualization and Communication	
MATH 279	Experimental (Data Visualiation Comm)	
MATH 235	Survey of Statistics	3
WRIT 316	Business Writing (AW)	3

Total Hours 16

Marketing Minor

The Marketing Minor is for non-business majors who want to learn marketing skills, but without pursuing a full degree option in business and

is a popular choice for a variety of different students across MU including but not limited to the following majors: Art/Design, Communications, Psychology and Economics.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Marketing

Code	Title	Hours
MARKETING MINOR REQUIREMENTS		
Intro to Business - Choose 1 of the following:		3
BUAD 101A	Introduction to Business	
BUAD 101B	Introduction to Business	
BUAD 231	Principles of Marketing	3
MKTG 431	Marketing Research	3
MKTG 436	Marketing Strategy	3
Marketing Electives - Choose 2 classes from:		
Any 33-level MKTG course(s)		
Any 43-level MKTG course(s)		
MKTG 405	Topics in Marketing	

Total Hours 12

Marketing, B.S.

Millersville University's Marketing program produces creative professionals who are well versed in interacting with customers and researching market trends. The marketing program helps students understand how to effectively develop attractive products and services, how to price offerings competitively, and how to stand out from other firms by using cutting edge advertising strategies. #through our courses in consumers behavior, marketing research, marketing strategy and our multiple marketing elective courses, students develop strong communication skills, consumer research ability, and strategic business acumen.

Millersville University's Marketing program produces creative professionals who are well versed in interacting with customers and researching market trends. The marketing program helps students understand how to effectively develop attractive products and services, how to price offerings competitively, and how to stand out from other firms by using cutting edge advertising strategies. #through our courses in consumers behavior, marketing research, marketing strategy and our multiple marketing elective courses, students develop strong communication skills, consumer research ability, and strategic business acumen. Our marketing graduates will be able to gather data and develop strategies to help organizations best serve their markets and customers.

Marketing, Sub-Baccalaureate Certificate

Marketing Certificate (post-associate/pre-baccalaureate). The undergraduate certificate in marketing offers a higher-level credential to students with an associate degree who need additional expertise in marketing to fulfill their career goals.

The undergraduate certificate in marketing offers a higher-level credential to students with an associate degree who need additional expertise in marketing to fulfill their career goals. Through selected courses in consumers behavior, marketing research, marketing strategy and our multiple marketing elective courses, students develop strong communication skills, consumer research ability, and strategic business acumen.

Major in Marketing

Code	Title	Hours
REQUIRED MARKETING COURSES		
BUAD 231	Principles of Marketing	3
MKTG 332	Consumer Behavior	3
ELECTIVE MARKETING COURSES		
Marketing Electives - Choose 3 of the following:		9
MKTG 333	Personal Selling	
MKTG 335	Advertising	
MKTG 336	Retail Marketing	
MKTG 337	Sales Force Administration	
MKTG 431	Marketing Research	
MKTG 435	International Marketing	
MKTG 436	Marketing Strategy	
Total Hours		15

College of Education and Human Services

The College of Education and Human Services inspires students to fulfill their dreams of becoming teachers, school leaders, psychologists, coaches, social workers and more.

Together we partner with students to provide them with the knowledge and skills needed to become strong, independent professionals in their fields.

Since 1855, when Millersville University became Pennsylvania's first Normal School, our education programs have been at the forefront in the region. Education and educator preparation have certainly evolved since then, so we have integrated 21st century approaches to teaching and learning into our early childhood, middle level, secondary and special education programs.

Our psychology faculty take undergraduate students on a journey through human behavior. We also prepare graduate students for careers in clinical psychology, school psychology and school counseling.

If you have a commitment to greatness and are interested in sports journalism, sports management, athletic training or coaching, Wellness and Sports Sciences is the place for you.

Our School of Social Work offers bachelor's, master's and doctoral programs to begin or continue your career to be a positive agent of social change.

In the classroom, in the community and abroad, together we will achieve the remarkable. Your passion will be guided by some of the nation's top professors leading to a 95 percent employment rate. We invite you to visit our campus, meet our faculty and students, and become a Millersville Marauder.

the departments

- Early, Middle & Exceptional Education (p. 192)
- Educational Foundations (p. 204)
- Psychology (p. 206)
- School of Social Work (p. 211)
- Special Education (p. 217)
- Wellness & Sport Sciences (p. 225)

the programs

- Athletic Coaching Minor (p. 228)
- Early Childhood Education - PreK - Grade 4, B.S.Ed. (p. 200)
- Gerontology Minor (p. 216)
- Middle Level Education Grade 4-8 B.S.Ed. - Social Studies (p. 202)
- Middle Level Education Grade 4-8, B.S.Ed. (p. 202)
- Middle Level Education Grade 4-8, B.S.Ed. - English Language Arts (p. 204)
- Middle Level Education Grade 4-8, B.S.Ed. - Mathematics (p. 204)
- Middle Level Education Grade 4-8, B.S.Ed. - Science (p. 204)
- Psychology Minor (p. 211)
- Psychology, B.A. (p. 211)
- Social Justice Minor (p. 216)
- Social Work, B.A. (p. 216)
- Special Education, BS.Ed. (p. 223)
- Sport Administration, B.S. (p. 228)
- Sport Administration, B.S. - Sport Business Option (p. 228)
- Sport Studies Minor (p. 228)

Early, Middle & Exceptional Education

We welcome you as participants in our new Early Childhood, Middle Level, and Special Education programs. Many rewarding experiences and challenges await you. We are looking forward to working with you to make this a successful and memorable learning endeavor.

the programs

- Early Childhood Education - PreK - Grade 4, B.S.Ed. (p. 200)
- Middle Level Education Grade 4-8 B.S.Ed. - Social Studies (p. 202)
- Middle Level Education Grade 4-8, B.S.Ed. (p. 202)
- Middle Level Education Grade 4-8, B.S.Ed. - English Language Arts (p. 204)
- Middle Level Education Grade 4-8, B.S.Ed. - Mathematics (p. 204)
- Middle Level Education Grade 4-8, B.S.Ed. - Science (p. 204)

the faculty

Burke, Jennifer; Associate Professor

College of Education and Human Services
B.S., Seton Hall University, 2004; M.A., Ibid., 2008; Ph.D., Rutgers University, 2016

Colabucci, Lesley; Associate Professor
College of Education and Human Services
B.A., University of Maryland, 1992; M.S., University of Wisconsin-Madison, 1994; Ph.D., The Ohio State University, 2004

Heilshorn, Kimberly; Associate Professor
College of Education and Human Services
B.A., Boston College, 1990; M.Ed., Millersville University, 1992; Ed.D., Widener University, 2003

Himmele, William; Professor
College of Education and Human Services
B.S., State University of New York at Buffalo, 1988; M.A., Biola University, 1994; Ph.D., Ibid., 2001

Himmele, Persida; Professor
College of Education and Human Services
B.A., State University of New York at Buffalo, 1988; Ed.M., Ibid., 1991; Ph.D., Biola University, 2001

Hossain, Kazi; Associate Professor
College of Education and Human Services
B.S., Dhaka University (Bangladesh), 1984; M.Ed., Edinboro University of Pennsylvania, 1991; Ed.D., Indiana University of Pennsylvania, 2000

Hower, Aileen; Associate Professor
College of Education and Human Services
B.A., Bloomsburg University, 1992; M.A., University of Wyoming, 1994; M.A., The College of New Jersey, 1997; Ed.D., Widener University, 2013

Jackson, Sarah; Assistant Professor
College of Education and Human Services
B.A., University of Puget Sound, 2007; M.F.A., Savannah College of Art and Design, 2011; M.A., Hollins University, 2014; Ph.D., The Ohio State University, A.B.D.

Petula, Jason; Associate Professor
College of Education and Human Services
B.S., The Pennsylvania State University, 1995; M.Ed., Temple University, 1999; M.S., Wilkes University, 2001; Ph.D., The Pennsylvania State University, 2007

Powers-Costello, Elizabeth; Associate Professor
College of Education and Human Services
B.S., Bloomsburg University of Pennsylvania, 1989; M.Ed., Ibid., 1993; M.Ed., Antioch New England University, 1997; Ph.D., University of North Carolina, 2007

Shettel, Jennifer; Professor
College of Education and Human Services
B.S.Ed., Millersville University, 1992; M.Ed., The Pennsylvania State University, 1997; Ed.D., Widener University, 2009

Wolfgang, Charlton; Associate Professor
College of Education and Human Services
B.S., Messiah College, 1993; M.S.Ed., Lebanon Valley College, 2002; Ph.D., Drexel University, 2013

the courses

EDUC 179: 3 s.h.

Experimental
Experimental

EDUC 279: 3 s.h.

Experimental
Experimental

EDUC 305: 1,3 s.h.

Field Experience

Specific work and study assignments constituting the field experience will be developed. Regular discussions, conferences and group seminars will be conducted by faculty members and field supervisors to clarify generalizations that link practice to theory. In most instances the assignments will be in public schools; however, social agencies may be included in this practicum program. Offered in fall, spring.

EDUC 325: 3 s.h.

The Teaching of Literacy: Processes, Skills, & Strategies

This course integrates the teaching of the four communication skills: reading, writing, listening and speaking in the pre-K through 12th grade classroom. The teaching strategies and techniques that will be presented in this course are consistent with national and state standards, assessments and curriculum frameworks. Course content will be consistent with the Pennsylvania Core Standards for each of these subject areas. Credit may not be received for this course and ERCH 422. Reserved for Special Education Majors. Pre-req: ERCH 225

EDUC 330: 3 s.h.

LGBTQ+ Issues in Education (P)

Provides an overview of past, current, and emerging LGBTQ+ issues, policies, and advocacy in P-12 and higher education. Investigates these issues from a variety of historical, cultural, and theoretical perspectives.

EDUC 379: 3 s.h.

Experimental
Experimental

EDUC 403: 3 s.h.

Pluralism in Society (D, P)

Provides historical and present day information about different racial, cultural, and linguistic groups represented in our society. It explores the challenge of providing an equitable and effective education to all and provides strategies that can be used to deal with cultural issues in society. Prereq: ENGL 110 and Junior Standing (60 credits)

EDUC 403H: 3 s.h.

Hon: Pluralism in Society (D, P)

EDUC 424: 3 s.h.

Diagnostic Reading Disability (W)

The first of two elective courses in diagnostic reading for undergraduate students will be an introduction to various formal and informal means to assess the reading strengths and needs of children. Offered in fall, spring. Prereq: EDUC 220 or ERCH 225, ENGL 110.

EDUC 424H: 3 s.h.

H:Diagnostic Reading Disability (W)

H:Diagnostic Reading Disability

EDUC 433: 3 s.h.

Gender and Race Issues (D, P)

Children's literature will be examined in light of recent psychological, sociological and educational research on sexism and racism. Offered in fall, spring. Prereq: COMM 100, ENGL 110, junior status.

EDUC 433H: 3 s.h.**Hnrs:Gender And Race Issues (P)**

Hnrs:Gender And Race Issues

EDUC 461: 3 s.h.**Second Language Acquisition: Theory, Programs, and Assessment**

Provides prospective and practicing teachers with a foundational understanding of English language structure, first and second language acquisition, and oral language assessment methods for K-12 classrooms. Historical and evolving legislative policies and programs related to schooling and English language learners in the U.S. Prereq: admission to Advanced Professional Studies.

EDUC 462: 3 s.h.**Methods for Teaching English Language Learners**

Provides prospective and practicing teachers with an opportunity to apply theoretical foundations of second language acquisition to teaching in the classroom. Methods for developing English language learners' conversational and academic language, as well as strategies for learning in the content areas.

EDUC 463: 3 s.h.**Linguistic and Cultural Diversity in the Classroom**

Examines U.S. and world cultures, sources of cross-cultural conflict and approaches to cross-cultural conflict resolution as it relates to K-12 settings. Explores approaches for creating classrooms that promote equity and an appreciation for diversity.

EDUC 464: 3 s.h.**Assessment, Policies and Practices in Teaching English Language Learners**

Focuses on the use of various tools in assessing and planning for the linguistic and instructional needs of English learners. Contains a public school field experience component where participants apply methods and principles for supporting English language learners in K-12 settings. Examines state and federal policies as they relate to schooling and English learners.

EDUC 475: 3 s.h.**Current Trends in Education**

A survey of current and future curricular and instructional trends in education. Emphasis on identification, examination and evaluation of topics, methods, strategies and issues affecting teaching and learning. Offered infrequently.

EDUC 479: 2,3 s.h.**Experimental**

Experimental

EDUC 486: 3 s.h.**Topics In Education**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics/methods will vary according to the needs of students and faculty. Offered infrequently.

EDUC 486H: 3 s.h.**HNRS:Topics in Education****EDUC 487: 3 s.h.****Teaching English Learners**

This course prepares teacher candidates to understand cross-cultural and linguistic foundations of acquiring a new language. Teacher candidates will apply research-based strategies for providing English learners (ELs) optimal learning environments that provide meaningful access to standards-based instruction. Candidates will demonstrate the ability to use assessment data to differentiate and modify instruction. Candidates will also demonstrate an understanding of schools' legal responsibilities toward ELLs and their families. Equivalent to ERCH 485, credit may not be earned for both courses.

EDUC 498: 1-4 s.h.**Independent Study****ERCH 110: 3 s.h.****Introduction to Early Childhood Education**

Designed to provide an overview of the field of early childhood education. Historical, theoretical and philosophical influences on past and current approaches to teaching young children will be traced and analyzed. The course introduces students to the early childhood education profession, developmental characteristics of young children (birth–age 9), developmentally appropriate practices (NAEYC, 2009), and an overview of effective curriculum, instruction and assessment of young children. In the concurrent field experience, students reflect on their ability to cope with classroom reality as they affirm or change their choice of teaching as a profession. Prereq: Act 34 Clearance, Act 151 Clearance and Act 114 FBI Clearance. Offered spring, fall.

ERCH 110H: 3 s.h.**Hon:Intro Erly Child Ed****ERCH 190: 3 s.h.****Introduction to Integrative STEM Pedagogy**

Serves as an introduction to students enrolled in the Integrative Science, Technology, Engineering & Math (STEM) Education Methods Minor. Students will learn basic information regarding integrative STEM education and examine various curricular models.

ERCH 225: 3 s.h.**Foundations of Reading**

Introduces topics in the field of teaching reading in early childhood, including emergent literacy, approaches to reading instruction, word recognition and vocabulary development, comprehension instruction, assessment techniques and reading instruction for the multicultural and the exceptional child. Supplemented by a field experience. Offered in fall, spring. Prereq: ELED 210 or ERCH 110, Act 34 Clearance, Act 151 Clearance and Act 114 FBI Clearance.

ERCH 290: 3 s.h.**Children's Engineering**

The intent of this course is to teach students about fundamentals of electricity, mechanisms, fluidics (liquids and gases under pressure), computer-control, and structures. Content will be delivered through a series of hands-on activities that will allow the students to immerse themselves in the content through problem-based learning by doing. Simple knowledge and skill building activities will lead to more complex open-ended problem solving and prototyping activities to build deeper understandings of scientific, technological, engineering, and mathematical (STEM) concepts for teachers of young children. Cross-listed with EDTE 290, students may not receive credit for both courses.

ERCH 300: 3-12 s.h.**Co-Op Experience in ERCH**

Co-op experience in Early Childhood Education

ERCH 315: 3 s.h.**Family & Community: Aspects of Diversity (D, W)**

A focus on collaborative relationship building between home, school and community that facilitates positive influence on the individual child's development. These collaborative relationships create an inclusive learning environment for all children, including culturally and linguistically diverse. The collaborative relationships are based on developing reciprocal communication techniques, cultural sensitivity and rapport with children and their families. Promotes effective communication and advocacy skills for students with disabilities and their families between school, agency personnel and community members. Empowerment techniques and parent workshops are developed to encourage parent involvement, with emphasis on families who traditionally have been excluded from the collaborative process in the schools and developing parental self-efficacy skills. Offered spring, fall. Prereq: ENG 110 or ENGL 110H; EDUC 220 or ERCH 225; EDFN 211, 241; Coreq: ERCH 345 and EDFN 320.

ERCH 315H: 3 s.h.**H:Fam/Commun:Aspcts of Divers (D, W)****ERCH 316: 3 s.h.****Creative Experiences for the Young Child**

An emphasis on making appropriate instructional and curricular decisions to provide creative opportunities for young children; special attention to rhythmic, aesthetic and dramatic avenues of expression; application of ideas through actual experiences with young children. Offered in fall, spring. Prereq: C- or higher in ELED 210 or ERCH 110; Act 34 Clearance, Act 151 Clearance and Act 114 FBI Clearance.

ERCH 316H: 3 s.h.**Hon: Creative Exp/Yng Chld****ERCH 345: 3 s.h.****Social Studies for the Young Learner**

Teacher candidates will apply the standards and thematic strands of social studies as defined by the National Council for the Social Studies for the PreK–4 developmental level. Emphasis is on the learner building civil competence and acquiring knowledge, skills and attitudes in civics and government, economics, history and geography. Offered in fall, spring. Prereq: EDFN 211, EDFN 241 and ERCH 225 or EDUC 220.

ERCH 345H: 3 s.h.**Hon: Social Stdy fo Young Lrn****ERCH 421: 3 s.h.****Language Development & Emergent Literacy (W)**

Examines children's oral language development and its contribution to emergent literacy, the period between birth and the time when children learn to read and write in a conventional manner. Appropriate content and skill competencies will be covered. Strategies to enhance the family/ home/ school connection will be explored. A field experience will be part of this course. Prereq: admission to Advanced Professional Studies. Coreq: ERCH 496.

ERCH 421H: 3 s.h.**H:Lang Dev and Emergent Litrcy (W)****ERCH 422: 6 s.h.****Tching of Literacy, PreK-4: Process, Skills & Strategies**

This course develops pedagogy in the teaching of reading and the related language arts in grades PreK-4. Keeping with current theory that the communication processes—reading, writing, listening and speaking — cannot arbitrarily be divided, this course will present pedagogy in an interrelated and integrated format. Understandings, teaching strategies, and techniques will be consistent with the state testing system and the state standards for literacy instruction. Throughout this course, students will be expected to exhibit professional behaviors as delineated in Administrative Guidelines for the Assessment of the Professional and Ethical Dispositions of Professional Education Unit Candidates (www.millersville.edu/academics/educ/education/files/Dispositions.pdf). Students will have opportunities to establish the habit of ongoing professional growth. Offered periodically. Prereq: admission to Advanced Professional Studies. Coreqs: ERCH 455, 465, SPED 331. Credit may not be received for this course and EDUC 325.

ERCH 422H: 6 s.h.**H:Tchg Literacy PK-4****ERCH 435: 3 s.h.****Literature for the Young Child**

Prepares early childhood teacher candidates to recognize high-quality literature for children from birth to age nine. The use of literature to promote children's language, intellectual, emotional, social/moral and aesthetic/creative development is highlighted. A focus on children's response to literature is provided. Offered fall, spring. Prereq: PSYC 227; EDFN 211, 241; ERCH 225 or EDUC 220.

ERCH 435H: 3 s.h.**Hon: Lit for the Young Child****ERCH 455: 3 s.h.****Teaching Mathematics to Young Children**

Teacher candidates will apply the principles that guide all mathematics instruction as specified by the National Council of Teachers of Mathematics for the PreK through 4th-grade developmental level. Candidates will effectively deliver core mathematics content as well as have skills to stay current with the research on best practices in mathematics education. Prereq: Math 105, admission to Advanced Professional Studies. Coreq: ERCH 465, 422, SPED 331

ERCH 455H: 3 s.h.**Hon:Tchg Math/Yng Chldrn****ERCH 465: 3 s.h.****Science for the Young Learner**

Provides overview of the content and processes included in an early childhood (Pre K-4) science program. The course includes a study of methodology appropriate to the school setting. Prereq: admission to Advanced Professional Studies. Coreq: ERCH 422, 455, SPED 331.

ERCH 465H: 3 s.h.**Hnrs: Science for Yng Learner**

ERCH 485: 3 s.h.**Teaching Young English Language Learners**

Prepares early childhood teacher candidates to understand the social and linguistic foundations for first and second language development in the early years. Teacher candidates will be able to apply research-based strategies for supplying first language development in the home and for preparing young learners for the transitions to schooling in a second language. Candidates will demonstrate an understanding of the resources that young learners bring to academic settings, and of ways to support young learners and their families in their adjustments to English-speaking schools. Candidates will demonstrate the ability to use assessment data to differentiate and modify instruction according to the needs of their students. Teacher candidates will be prepared to support young English language learners in their acquisition of language and content within optimal learning environments that provide meaningful access to standards-based instruction. Prereq: ENGL 110, admission to Advanced Professional Studies. Equivalent to EDUC 487, credit may not be received for both courses.

ERCH 485H: 3 s.h.**H: Tchng Young Engl Lang Learne****ERCH 489: 1-3 s.h.****Honors Course**

Early Childhood Education Honors Course

ERCH 495: 3 s.h.**Integrative STEM Practicum**

This clinical practicum course provides opportunities for teacher candidates to bridge theory and practice. Students will demonstrate and apply knowledge, skills, and dispositions related to the implementation of integrative science, technology, engineering and math (STEM) education at the pre-K to grade 4 level. Emphasis is placed on the planning, development, implementation and assessment of integrative STEM instructional activities and lessons that use problem-based and experiential learning techniques targeted for Pre-K to grade 4 students. Includes field experiences. Prerequisites ERCH 110, ERCH 190, EDTE/ERCH 290, ITEC 344, EDTE 490 or 690 or Permission of Instructor; Advanced Professional Studies (APS) status required. Cross-listed with EDTE 495, credit may not be received for both courses.

ERCH 496: 6 s.h.**Curric, Instr & Assesss: Engaging the Young Child**

Designed to prepare teacher candidates in the general areas of curriculum, instruction, and assessment for the youngest learners (i.e., infancy-kindergarten). The course will focus on curricular philosophy and theory, approaches to early childhood education, pedagogical content knowledge, child development, and assessment of young learners. Current research, practice, and trends in early childhood education will be considered. Co-requisite for this course is ERCH 421: Language Development and Emergent Literacy. This is a six-credit course with a field experience embedded into the course.

ERCH 496H: 6 s.h.**H: Curriculum, Instrctn & Assesm****ERCH 498: 1-3 s.h.****Ind Stdy:****ERCH 499: 1-4 s.h.****Dept Hnrs:****GFED 370: 3 s.h.****Teaching Gifted Learners**

Designed to acquaint prospective teachers with some viable techniques for dealing with gifted and able children in their classrooms. Some attention will also be paid to reviewing existing programs and means of identification. Some work with gifted students in the schools will be another component of the course. Offered annually.

GFED 377: 3 s.h.**The Gifted in Pop Culture (D, P)**

This course will introduce students to various characteristics, issues and needs of gifted individuals. Through the lens of popular culture media (e.g., film, television, graphic novels, literature) portrayals of fictional gifted characters will be examined in regards to topics such as identification, education, socialization, gender, ethnicity, poverty and disability. These portrayals will then be juxtaposed with current research to gain an authentic understanding of this group and their unique needs. Pre-requisites: ENGL 110 or ENGL 110H, COMM 100 or COMM 100H and 60 credits (Junior Standing).

GFED 377H: 3 s.h.**Hon: Gifted in Pop Culture (D, P)****MDLV 323: 3 s.h.****Teaching Reading in the Content Areas (W)**

An elective course designed to help students develop an understanding of the reading process in the major subject areas. Specific literacy strategies, study skills and reference techniques used in various subjects are investigated. Offered in fall. Prereq: ENGL 110 and Admission to Advanced Professional Studies (APS)

MDLV 335: 3 s.h.**Literature for Children & Young Adolescents**

Prepares middle level teacher candidates to recognize high-quality literature for youth from age 10 to 14. Grounded in adolescent psychology, it guides teacher candidates in the identification of literature, across genres and content areas, that is relevant to the lives of adolescents. The course engages teacher candidates in collaborative approaches to literature study, modeling best practices for the instruction of adolescents. Response to literature receives emphasis. Offered annually. Prereq: PSYC 227.

MDLV 335H: 3 s.h.**Hnrs: Lit for Childrn and Yng****MDLV 425: 3 s.h.****Teaching of Literacy, Gr 4-8: Processes, Skills & Strategies**

Develops pedagogy in the teaching of reading and the related language arts in grades 4-8. Keeping with current theory that the communication processes—reading, writing, listening and speaking—cannot arbitrarily be divided, this course will present pedagogy in an interrelated and integrated format. Understandings, teaching strategies and techniques will be consistent with the state testing system and the state standards for literacy instruction. Throughout this course, students will be expected to exhibit professional behaviors. Offered fall, spring. Prereq: admission to Advanced Professional Studies.

MDLV 446: 3 s.h.**Teaching of Social Studies**

In this course, teacher candidates will apply the standards and thematic strands of social studies as defined by the National Council for the Social Studies for middle level learners (Grades 4-8). Emphasis is on the learner building civil competence and acquiring knowledge, skills, and attitudes in civics and government, economics, history, and geography.

MDLV 456: 3 s.h.**Teaching Middle Level Mathematics**

Pedagogy for teaching middle level mathematics is aligned with national and state standards, current research, forms of assessment and curricular frameworks. Technology and hands-on instructional strategies are utilized. Prereq: MATH 205, MATH 230 and admission to Advanced Professional Studies. Coreq: MDLV 425, 466, SPED 331.

MDLV 466: 3 s.h.**Teaching of Science: An Inquiry Approach (W)**

Focuses on the teaching of science through inquiry in the middle grades. Inquiry based strategies stress evidence based argumentation, experimentation, and the building of student understanding of the nature of science through active involvement. Prereq: ENGL 110, admission to Advanced Professional Studies. Coreq: MDLV 425, 456, SPED 331.

MDLV 486: 3 s.h.**Teaching English Language Learners in the Middle Level (P)**

Prepares teacher candidates to understand cross-cultural and linguistic foundations of acquiring a new language. Teacher candidates will apply research-based strategies for providing English language learners (ELLs) with optimal learning environments that provide meaningful access to standards-based instruction in grades 4-8. This course places a special emphasis on instructional planning that facilitates student success with academic language and academic texts in upper-elementary settings. Candidates will demonstrate the ability to use assessment data to differentiate and modify instruction. Candidates will also demonstrate an understanding of schools' legal responsibilities toward ELLs and their families. Offered in fall. Prereq: COMM 100, ENGL 110 and admission to Advanced Professional Studies.

MDLV 486H: 3 s.h.**Hon: Teaching Mid-Level Eng La (P)****MDLV 499: 1-3 s.h.****Dept Hhrs:****SPED 101: 3 s.h.****Orientation to Special Educ**

This introductory course is designed to prepare future special educators with the knowledge base for the identification, placement and instruction of learners with disabilities who are eligible to receive special education services across the continuum of educational environments. Included are historical considerations, educational and developmental needs of individuals with disabilities, special education programs, services, resources, and materials. In addition, practical exposure to individuals with disabilities will be emphasized.

SPED 179: 3 s.h.**Experimental**

Experimental

SPED 237: 3 s.h.**Applied Foundations of Contemporary Special Education**

This course identifies the complex sociocultural history that has brought us to where we are in special education practice today. It presents the contemporary and historical influences of the American school system and how special education is integrated into the modern classroom. The overrepresentation of economically disadvantaged, and culturally and linguistically diverse populations in special education is explored through careful consideration of cultural collaboration, current sociological variables and analysis of causes and prevention strategies. Individual learning differences and the development of academic and functional performance needs of students with disabilities are considered historically, legally, educationally, culturally and socially. Prereq: requires submission of satisfactory FBI, Act 34/151 clearances. Offered in fall, spring. Coreq: must be taken simultaneously with EDFN 211, 241, ERCH 225.

SPED 279: 3 s.h.**Experimental**

Experimental

SPED 300: 3-12 s.h.**Co-Op Ed Experience in Sped**

Co-Op Ed Experience in Sped

SPED 311: 3 s.h.**Assessment for Designing & Implementing Instruction (W)**

This course enables teacher candidates to develop competencies for assessing students in an inclusive classroom setting, design instruction and make instructional decisions to enhance students' learning. Teacher candidates learn how to assess, analyze and interpret data from formal (standardized) and informal (traditional and alternative) testing sources and measurement. Teacher candidates learn how to interpret reports as relevant to students from diverse learning backgrounds and use these interpretive results along with behavioral observation, task analysis and other types of measurement to design instruction. Offered in fall, spring, summer. Prereq: Act 34, 151, 114 clearances and admission to Advanced Professional Studies.

SPED 311H: 3 s.h.**Hon: Design/Implement Instruc (W)****SPED 312: 3 s.h.****Disabl in Inclusive Settings**

Prepares educators to effectively teach children with disabilities in inclusive classrooms by incorporating theory, identification, services, instruction and legal aspects of special education. Course participants will learn to plan, adapt and implement effective instruction and assessment to facilitate academic achievement for learners with mild and moderate disabilities in an inclusive setting. Offered in fall, spring. Prereq: ERCH 110 and Foundations Bloc 1 (EDFN 211, 241, EDUC 220). Course may be taken as a corequisite with Foundations Bloc 1.

SPED 321: 3 s.h.**Serving Individuals in Inclusive Settings (W)**

This course prepares teacher candidates to effectively teach students with severe and multiple disabilities within an inclusive educational system. By incorporating theory with aspects for identification, specialized support services, instruction and relevant special education law, teacher candidates become knowledgeable of their responsibilities as teachers of students with severe and multiple disabilities. Teacher candidates learn to differentiate and individualize instruction for the developmental and chronological requirements of their students. Teacher candidates become practiced in referencing alternate learning standards and general education curricula to facilitate the achievement of their students with severe and multiple disabilities in a variety of learning environments. Offered in spring. Prereq: ENGL 110; Act 34, 151, 114 clearances and admission to Advanced Professional Studies (APS). Coreq: ERCH 421, SPED 341.

SPED 328: 3 s.h.**Assessment in Special Educatn**

The administration, scoring and interpretation of assessment devices typically used in psychometric evaluations are stressed. Critical evaluation of such devices in terms of reliability, validity and norming groups is also developed. The integration of the interpretive results of psychometric evaluation with behavioral observation, task analysis and other assessments developed in prerequisite courses is demonstrated. Offered in fall, spring.

SPED 330: 3 s.h.**Discrimination and Oppression of People with Disabilities (D, P)**

Examines social discrimination through consideration of the policies and practices of societies. Creates an understanding of the social, political and cultural, rather than the physical or psychological, determinants of the experience of disability. Disentangles impairments from the myths, ideology and stigma that influence social interaction and social policy. Through course content and activities, students will challenge the idea that the economic and social statuses and the assigned roles of people with disabilities are the inevitable outcomes of their condition. Offered in fall, spring, summer. Prereq: COMM 100, ENGL 110 and junior status.

SPED 330H: 3 s.h.**H:Discrim/Oppress People/Disab (D, P)****SPED 331: 3 s.h.****Positive Learning Environments for all Students**

Students will develop the ability to effectively analyze and design inclusive educational environments to optimize the achievement of every student, and will receive the knowledge and skills to modify their teaching methods to motivate and support positive social skills in diverse students. Through the use of appropriate assessments and data collection techniques for individual student behaviors, students will develop the ability to conduct functional behavior assessments and apply behavior-intervention plans and positive techniques as needed using the Response to Intervention framework. Offered in fall, spring. Required submission of satisfactory FBI, Act 34/151 clearances; admission to Advanced Professional Studies (APS).

SPED 331H: 3 s.h.**Hon: Positive Lrng Env for All****SPED 337H: 3 s.h.****Hon: Gender and the Law (G3)****SPED 341: 3 s.h.****Early Intervention to Kindergarten**

This course examines the implications of federal mandates for providing educational and supportive services for infants/toddlers/preschoolers with disabilities and their families. The teacher candidates gain knowledge in interpreting data from formal and informal sources to be utilized in developing Individualized Family Service Plans (IFSP). The teacher candidates use case study and field experience data to recommend appropriate school-based programs for young children with disabilities. They also implement effective teaching strategies to meet the family, academic, social, emotional and behavioral needs of young children with disabilities in inclusionary environments. These strategies will be applied in field placements during the semester. Offered in spring. Prereq: EDFN 211, 241, ERCH 225 or EDUC 220; SPED 237; Act 34, 151, 114 clearances and admission to Advanced Professional Studies (APS). Coreq: ERCH 421, SPED 321.

SPED 346: 3 s.h.**Secondary Students w/Disabilities in Inclusive Settings**

This course is designated to prepare secondary education majors to effectively teach students with disabilities in inclusive classrooms. Participants will learn legal mandates, secondary general educators' role in the special education process, and the academic and social implications of inclusion. Participants also will learn to facilitate academic achievement for students with mild and moderate disabilities in inclusive secondary education by planning, adapting and implementing effective instruction. Offered in fall, spring. Prereq: required submission of satisfactory FBI, Act 34/151 clearances; EDFN 211, 241. Cross-listed with SPED 546, credit may not be received for both.

SPED 351: 3 s.h.**Managing Challenging Behaviors**

Provides various strategies to support students with challenging behaviors. Candidates will conduct Functional Behavior Assessment and prepare Behavior Intervention Plan focusing on decrease negative behaviors while increasing positive behaviors. Candidates will develop their ability to effectively analyze behaviors and design inclusive educational and community environments to optimize the achievement of every student. Candidates will demonstrate the knowledge and skills to modify teaching methods and learning environments to promote positive social skills in students with disabilities. Admission to Advanced Professional Studies required.

SPED 361: 3 s.h.**Formal Assessment for Students with Disabilities**

Designed to prepare Special Education teacher candidates to effectively develop competencies for assessing PK-12 students with disabilities according to IDEA (Individuals with Disabilities Education Act). Teacher candidates will acquire knowledge for administration, scoring, and interpretation of formal assessment devices typically used in educational evaluations. Furthermore, teacher candidates will learn how to properly select formal assessment tools in terms of reliability, validity and norm populations and learn about integrated systems of assessment and data collection for identification of students struggling to meet academic and behavioral expectations. Teacher candidates will learn the role of educational evaluations in developing Individual Education Programs (IEP) for students in need of support in the general education curriculum. Teacher candidates will learn professional ways to collaborate with parents and include them as equal partners in the assessment process.

SPED 400: 3-12 s.h.**Co-Op Ed Experience in Sped**

Co-Op Ed Experience in Sped

SPED 411: 3 s.h.**Assmt/Devl of Indiv Ed Prgram**

This course provides teacher candidates with the necessary skills to administer, score and interpret a range of formal and informal educational assessments typically used with students with severe and multiple disabilities. Teacher candidates develop their ability to apply variables such as reliability, validity and norm references to select appropriate assessment tools for their students and to develop informal evaluations as needed. Teacher candidates apply their knowledge of required procedures, with students' assessment results, to construct appropriate Individual Education Program, (IEP) with multidisciplinary team members and use those IEPs to plan instruction. Prereq: Act 34, 151, 114 clearances, admission to Advanced Professional Studies and Professional Bloc I courses of ERCH 421; SPED 321, 341. Coreq: SPED 441, 451, 453, 454. Offered in spring.

SPED 412: 3 s.h.**Assessmnt for Mild/Mod Disabl**

This course prepares teacher candidates to develop competencies for administration, scoring and interpretation of formal assessment devices typically used in educational evaluations. Teacher candidates acquire knowledge of the process of how to select formal assessment tools in terms of reliability, validity and norm populations, and learn about integrated systems of assessment and data collection for identification of students struggling to meet academic and behavioral expectations. Teacher candidates will learn the role of educational evaluations in developing Individual Education Programs (IEP) for students in need of support in the general education curriculum. Teacher candidates learn how to collaborate with parents and include them as equal partners in the assessment process. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies; Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand II: SPED 442, SPED 452, SPED 453, SPED 454. Offered in fall, spring.

SPED 432: 3 s.h.**Curr & Mthds Mild/Moder Disabl**

Designed to develop competencies to identify curriculum content and implement effective methodologies needed to direct the education program for students with disabilities in the secondary classroom setting. Includes approx. 150 hrs field experience. Offered in fall, spring. Prereq: Admission to APS

SPED 441: 3 s.h.**Support for Specialized Curriculum**

This course provides teacher candidates with research-based methods and special techniques to effectively instruct students with severe/profound and multiple disabilities within a variety of educational settings. Teacher candidates develop the teaching skills required to plan for and institute positive intervention strategies in relevant curricular areas, including perceptual, motor, daily living, communication, leisure and socialization. The emphasis of this course will be upon implementing the Individualized Education Programs (IEP). Focus will be upon lesson plans, task analyses and accommodating students who require extensive or pervasive instructional supports and adapting specialized curricula to meet their learning needs. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies; Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand I: SPED 411, SPED 451, SPED 453, SPED 454. Offered in spring.

SPED 441H: 3 s.h.**H: Supprt for Specialzd Curric****SPED 442: 3 s.h.****Eff Instr for Stdnts w Disabil**

This course is designed to prepare teacher candidates to provide effective instruction to children with mild disabilities. The course will focus on developing skills for high-quality instruction based on research-based practices used to design and adapt curriculum to provide high-quality, standard-based instruction for students with mild disabilities, with an emphasis on the inclusive classroom. Course participants will learn to plan, implement and assess the results of effective instruction aligned with students' academic, social, emotional and behavioral needs to facilitate academic achievement, with an emphasis in development of literacy skills for students in need of supports in general education. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies; Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand II: SPED 412, SPED 452, SPED 453, SPED 454. Offered in fall, spring.

SPED 443: 3 s.h.**Reflective Practices (D, W)**

This course prepares teacher candidates with the necessary skills to develop cultural sensitivity to work effectively with diverse families and their students with disabilities (mild/moderate disabilities). Teacher candidates explore culture and diversity as they apply to families, educators, and influences on daily activities, identity development, and systems of power and privilege in the educational system. Teacher candidates develop their ability to be culturally responsive, open, and respectful educators. Teacher candidates develop their professional dispositions consistent with family and student centered educational planning, program implementation and community collaboration centered on students with disabilities (mild/moderate; severe/multiple disabilities) and their diverse families.

SPED 443H: 3 s.h.**Hon: Reflective Practices (D, W)****SPED 444: 3 s.h.****Transition Planning and Secondary Programming for Individuals with Disabilities**

This course is intended to develop competencies for individual program planning and instructional management. It prepares students to develop strategies to deliver curriculum in inclusive environments through the Individualized Education Program (IEP). The transition components of the IEP will be emphasized to prepare secondary teachers to understand their role in developing goals, planning and selecting options for postsecondary education, employment, and independent living goals for youth with disabilities.

SPED 445: 3 s.h.**Individualized Educational Planning**

This course prepares teacher candidates will identify students' strengths, needs, preferences, and interests to incorporate into Individualized Education Programs. Teacher candidates will compile the necessary data with the intent of facilitating success in current and future experiences, planning instruction, and implementing supports focused on an inclusive lifespan perspective of students with disabilities. Teacher candidates will learn to develop effective strategies for grade to grade transition practices to support services in the least restrictive environment. Teacher candidates will develop their knowledge of the variety of appropriate K-12 educational environments and supports for students and plan for these based upon current special education laws and regulations and the most effective research-based practices. This course must be taken as a co-requisite with other Professional Bloc II courses. Prerequisite: Admission to Advanced Professional Studies Status, successful completion of Professional Block I.

SPED 451: 3 s.h.**Indiv Ed Plnng for Svr Disabl**

This course prepares teacher candidates with the skills to plan, design and deliver instruction focused on integrated life-span perspectives of students with severe and multiple disabilities. A student's success in school can be linked, at least in part, to effective grade-to-grade transition practices and strategies. Teacher candidates learn to develop strategies for vertical (sequential and occurring over time) or horizontal (occurring at the same time) transitions. Teacher candidates develop their knowledge of the variety of appropriate K-8 educational environments for their students and plan for these transitions based upon current special education laws and regulations and the most effective research-based practices. Teacher candidates identify their students' needs, preferences and interests and incorporate this information into their goals, objectives and plans. In keeping with a student's Individualized Education Program (IEP), teacher candidates compile necessary data with the intent of facilitating successful future experiences. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies and Professional Bloc I courses of ERCH 421; SPED 321, 341. Coreq: SPED 411, 441, 453, 454. Offered in spring.

SPED 451H: 3 s.h.**H:Ind Ed Plnng for Svr Disabl****SPED 452: 3 s.h.****Individualized Educ Planning**

This course prepares teacher candidates with the skills to plan, design and deliver instruction focused on integrated life-span perspectives of students with mild to moderate disabilities. There is a great deal of information indicating that a child's success in school can be linked, at least in part, to effective grade-to-grade transition practices and strategies. Teacher candidates learn to develop strategies for vertical (sequential and occurring over time) or horizontal (occurring at the same time) transitions. Teacher candidates develop their knowledge of the variety of appropriate K-8 educational environments for their students and plan for these transitions based upon current special education laws and regulations, and the most effective research-based practices. Teacher candidates conduct and use comprehensive grade-to-grade transition evaluations and learn strategies to identify their students' needs, preferences, and interests and incorporate this information into their goals, objectives and plans. In keeping with a student's Individualized Education Program (IEP), teacher candidates compile necessary data with the intent of facilitating successful future experiences. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies and Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand II: SPED 412, SPED 442, SPED 453, SPED 454. Offered in fall, spring.

SPED 453H: 3 s.h.**Hnrs: Reflective Practices (D, W)****SPED 463: 3 s.h.****EBPs for Math, Lit, Cntnt Area**

This seminar, taken in conjunction with Student Teaching, is for all teacher candidates in the PK-12 Special Education Certification program. This seminar provides teacher candidates the opportunity to refine their knowledge of evidence-based practices in literacy, mathematics, and the core content areas for students with exceptionalities in grades PK-12 (for example peer-assisted learning strategies, self-regulated strategy instruction, etc.). Teacher candidates will select, implement, and evaluate the success of evidence-based practices through the collection and analysis of student data.

SPED 479: 3 s.h.**Experimental**

Experimental

SPED 489: 1-4 s.h.**Honors Course**

For the definition of departmental honors and eligibility, refer to the Special Academic Opportunities section of this catalog.

SPED 498: 1-3 s.h.**Independent Study**

For further information, see the Special Academic Opportunities section.

SPED 499: 1-4 s.h.**Departmental Honors**

For the definition of departmental honors and eligibility, refer to the Special Academic Opportunities section of this catalog.

Early Childhood Education - PreK - Grade 4, B.S.Ed.

The student may elect to earn Pennsylvania licensure (certification) in early childhood education (PreK–Grade 4). The program in early childhood education is designed to provide the student with an in-depth knowledge of subject matter and pedagogy appropriate for all students, including those for whom English is a second language. The program also provides extensive and varied field experiences.

The student who completes the early childhood program at Millersville University receives a Bachelor of Science in Education degree and may apply for a Pennsylvania Instructional I teaching certificate after successfully passing the Pennsylvania Educator Certification Test (PECT). Each student is strongly urged to complete an academic minor from the University's list of approved minors, which includes a minor in Integrative STEM Education Methods.

Major in Early Childhood Education, BSE

Code	Title	Hours
A grade of 'S' is required in EDEL 461 and 462. A grade of 'C' or better is required in all other major courses.		
REQUIRED EDUCATION COURSES		
ERCH 110	Introduction to Early Childhood Education	3
SPED 101	Orientation to Special Educ	3
ERCH 316	Creative Experiences for the Young Child	3
ERCH 315	Family & Community: Aspects of Diversity	3
ERCH 435	Literature for the Young Child	3
ERCH 485	Teaching Young English Language Learners	3
EDFN 320	Instructional Technology in Elementary Education	3
SPED 311	Assessment for Designing & Implementing Instruction	3
SPED 331	Positive Learning Environments for all Students	3
FOUNDATION BLOCK		
See Foundation Block in Professional Education section for additional courses in Foundations.		
ERCH 225	Foundations of Reading	3
PROFESSIONAL BLOCK I - BIRTH-KINDERGARTEN		
ERCH 496	Curric, Instr & Assesss: Engaging the Young Child	6
ERCH 421	Language Development & Emergent Literacy	3
PROFESSIONAL BLOCK II - GRADES 1-4		

ERCH 345	Social Studies for the Young Learner	3
ERCH 422	Tching of Literacy, PreK-4: Process, Skills & Strategies	6
ERCH 455	Teaching Mathematics to Young Children	3
ERCH 465	Science for the Young Learner	3
Total Hours		54

Professional Education- Early Childhood Education

Code	Title	Hours
FOUNDATION BLOCK (GRADES OF C or BETTER REQUIRED)		
EDFN 211	Foundations Modern Education (C or Better)	3
EDFN 241	Psychological Foundations of Teaching (C or Better)	3
ERCH 225	Foundations of Reading	3
STUDENT TEACHING		
Student Teaching		6
EDEL 461	Eled Stu Teaching	
Student Teaching		6
EDEL 462	Eled Stu Teaching	
Total Hours		21

Req Related for Early Childhood Education, BSE

Code	Title	Hours
A grade of 'C' or higher needed for all required related coursework.		
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ART 128	Art Integration	3
MATH 104	Fundamentals of Math 1	3
MATH 105	Fundamentals of Math 2	3
PSYC 227	Development of the Child and Adolescent	3
Health, Safety Nutrition for the Developing Child		3
WELL 240	Health, Safety, Nutr for Child	
Total Hours		18

Advanced Professional Studies, BSE

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		

APS REQUIREMENTS

English Composition - Choose 1 of the following:		3
ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211	Foundations Modern Education	6
& EDFN 241	and Psychological Foundations of Teaching	
48 earned (transcript) credit hours are required		

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. [Click here for the application.](#)

Total Hours **12**

Middle Level Education Grade 4-8 B.S.Ed. - Social Studies

The program in middle level education is designed to provide the student with an in-depth knowledge of subject matter (30 credit hours) in a content area to teach 4th through 8th grades. In addition to the concentration area, candidates are expected to complete 12 credit hours in each of the remaining content areas and in social studies, a minimum of 27 credit hours in the Professional Core, and 12 credits in student teaching. Students who complete the middle level education program at Millersville University receive a Bachelor of Science in Education degree and may apply for a Pennsylvania Instructional I teaching certificate. This program can be completed in eight (8) semesters.

Middle Level Education Grade 4-8, B.S.Ed.

The student may elect to earn Pennsylvania licensure (certification) in middle-level education (Grade 4–Grade 8). The program in middle-level education is designed to provide the student with an in-depth knowledge of subject matter and pedagogy appropriate for all students, including those for whom English is a second language. The program also provides extensive and varied field experiences.

The student will complete a minimum of 30 credit hours in one of the four content areas of English language arts, mathematics, science or social studies. In addition, the student will complete a minimum of 12 credit hours in each of the three remaining content areas, a minimum of 27 credit hours in the Professional Core and 12 credit hours in student teaching.

The student who completes the middle-level program at Millersville University receives a Bachelor of Science in Education degree and may apply for a Pennsylvania Instructional I teaching certificate after successfully passing the MDLV Praxis requirements. Each student is strongly urged to complete an academic minor from the University's list of approved minors.

Major in Middle Level Education, BSE

Code **Title** **Hours**
A grade of 'C' or better is required in all Middle Level Education requirements.

REQUIRED CORE COURSES

MDLV 335	Literature for Children & Young Adolescents	3
	Development Children and Adolescents	3
PSYC 227	Development of the Child and Adolescent	
SPED 101	Orientation to Special Educ	3
SPED 311	Assessment for Designing & Implementing Instruction	3
SPED 331	Positive Learning Environments for all Students	3

PROFESSIONAL BLOCK I

MDLV 323	Teaching Reading in the Content Areas	3
MDLV 486	Teaching English Language Learners in the Middle Level	3

PROFESSIONAL BLOCK II

	Tching of Literacy, Gr 4-8: Processes, Skills Strateg	3
MDLV 425	Teaching of Literacy, Gr 4-8: Processes, Skills & Strategies	
MDLV 446	Teaching of Social Studies	3
MDLV 456	Teaching Middle Level Mathematics	3
MDLV 466	Teaching of Science: An Inquiry Approach	3

A CONCENTRATION IS REQUIRED

Students must declare a concentration in English Language Arts, Mathematics, Science, or Social Studies. Please consult your advisor.

Total Hours **33**

Professional Education- Middle Level

Code	Title	Hours
FOUNDATIONS BLOCK (C or BETTER REQUIRED)		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
PROFESSIONAL BLOCK III - STUDENT TEACHING		
	Student Teaching	6
EDEL 461	Eled Stu Teaching	
	Student Teaching	6
EDEL 462	Eled Stu Teaching	

Total Hours **18**

Required Related for Middle Level Education

Code	Title	Hours
A grade of 'C' or better is required in all required related coursework for Middle Level Education.		
REQUIRED ELA COURSES		
ENGL 242	Reading Our World:	3
ENGL 220	Introduction to Language Study	3

REQUIRED MATH COURSES

MATH 104	Fundamentals of Math 1	3
Algebraic Foundations for the Middle-Level Teacher		
MATH 204	Algebraic Foundations for Mid-Level Teacher	
MATH 205	Geometry for the Middle-Level Teacher	3
Data Analysis and Probability for Middle-Level Teacher		
MATH 230	Probability and Stats for Mid-Level Teacher	3

REQUIRED SCIENCE COURSES

BIOL 100	General Biology	3
PHYS 101	Survey of Physics	3
Environmental Course - Choose 1 of the following:		
GEOG 130	Intro to Environmental Science	
ESCI 120	Environmental Geology	
BIOL 140	Introductory Ecology	
BIOL 340	Prspctv in Environm Awareness	
Gen Organic and Biochemistry 1 or Introductory Chemistry 1 - Choose 3-4		
1 of the following:		
CHEM 103	Gen Organic and Biochemistry 1	
CHEM 111	Introductory Chemistry 1	

REQUIRED SOCIAL STUDIES COURSES

ECON 100	Introductory Economics	3
GOVT 111	Introduction to American Government	3
GEOG 141	World Regional Geography	3
HIST 200	Reimagining Holidays & Heroes	3

Total Hours 42-43

Advanced Professional Studies, BSE

Code	Title	Hours
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*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.

APS REQUIREMENTS

English Composition - Choose 1 of the following:		
ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	
English Literature - Choose 1 of the following:		
ENGL 230	Introduction to Literature	3
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	

ENGL 402	Middle Eng Lang and Literature	
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Mathematics
Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211	Foundations Modern Education	6
& EDFN 241	and Psychological Foundations of Teaching	

48 earned (transcript) credit hours are required
APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours 12

Middle Level Education Grade 4-8, B.S.Ed. - English Language Arts

The program in middle level education is designed to provide the student with an in-depth knowledge of subject matter (30 credit hours) in a content area to teach 4th through 8th grades. In addition to the concentration area, candidates are expected to complete 12 credit hours in each of the remaining content areas and in social studies, a minimum of 27 credit hours in the Professional Core, and 12 credits in student teaching. Students who complete the middle level education program at Millersville University receive a Bachelor of Science in Education degree and may apply for a Pennsylvania Instructional I teaching certificate. This program can be completed in eight (8) semesters.

Middle Level Education Grade 4-8, B.S.Ed. - Mathematics

The program in middle level education is designed to provide the student with an in-depth knowledge of subject matter (30 credit hours) in a content area to teach 4th through 8th grades. In addition to the concentration area, candidates are expected to complete 12 credit hours in each of the remaining content areas and in social studies, a minimum of 27 credit hours in the Professional Core, and 12 credits in student teaching. Students who complete the middle level education program at Millersville University receive a Bachelor of Science in Education degree and may apply for a Pennsylvania Instructional I teaching certificate. This program can be completed in eight (8) semesters.

Middle Level Education Grade 4-8, B.S.Ed. - Science

The program in middle level education is designed to provide the student with an in-depth knowledge of subject matter (30 credit hours) in a content area to teach 4th through 8th grades. In addition to the concentration area, candidates are expected to complete 12 credit hours in each of the remaining content areas and in social studies, a minimum of 27 credit hours in the Professional Core, and 12 credits in student teaching. Students who complete the middle level education program at Millersville University receive a Bachelor of Science in Education degree and may apply for a Pennsylvania Instructional I teaching certificate. This program can be completed in eight (8) semesters.

Educational Foundations

Educational Foundations (EDFN) is the education home to secondary BSE majors. We believe strongly that teachers must both know the subjects they teach and how to teach them to students. Because of this belief, we value our partnership with liberal arts departments in providing education courses, field experience, and co-advisors for our undergraduate secondary education students. This partnership also includes content specific preparation.

Educational Foundations is also home to two multidisciplinary concentrations, Educational Studies and Applied Disability Studies.

The Programs

- English, B.S.Ed. (p. 110)
- Mathematics, B.S.Ed. (p. 327)

- Social Studies, B.S.Ed. (p. 158)
- Biology, B.S.Ed. (p. 274)
- Chemistry, B.S.Ed. (p. 288)
- Physics, B.S.Ed. (p. 333)
- Language & Culture Studies, B.A. - Teacher Education - Spanish (p. 112)

the faculty

Brooks, Sarah; Associate Professor
College of Education and Human Services
B.A., Gordon College, 2002; M.A., University of Connecticut, 2006; Ph.D., University of Virginia, 2010

Deemer, Sandra; Professor
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Dietrich, Nanette; Professor
College of Education and Human Services
Ph.D., University of Delaware, 2005

Dreon, Oliver; Professor
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B.S., University of Pittsburgh, 1991; M.A., Ibid., 1992; Ph.D., The Pennsylvania State University, 2008

Gaudio, Ann; Professor
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B.S., University of Michigan, 1989; M.S., Ibid., 1990; Ed.D., University of Pittsburgh, 2008

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Ibrahim, Abdulsalami; Assistant Professor
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B.S.Ed., Usmanu Danfodiyo University (Nigeria), 2007; M.Ed., Ibid., 2012; D.Ed., Indiana University of Pennsylvania, 2019

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B.S., Indiana University of Pennsylvania, 1986; M.S., St. Bonaventure University, 1991; Ph.D., Marywood University, 2006

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B.A., Tufts University, 2005; M.A., Duke University, 2008; Ph.D., University of Delaware, 2014

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Wright, Tiffany; Professor
College of Education and Human Services

B.A., Gettysburg College, 1997; M.A., Millersville University, 2002; Ed.D., Johns Hopkins University, 2009

The Courses

EDFN 179: 1-3 s.h.

Experimental

Experimental

EDFN 211: 3 s.h.

Foundations Modern Education (D)

This course provides an analysis of the philosophical, anthropological, sociological, economic and historical foundations for the contemporary PreK-12 school system in the United States; more specifically how issues of race, ethnicity, language, gender, disability, sexual orientation, geography, socioeconomics and religion influence the profession of teaching in particular grade-level contexts. The content for each section will be focused on the respective program area of the candidates (PreK-4 grades, 4-8 grades, and 7-12 grades). The course addresses the Pa. Dept. of Education's sociocultural standards for English-language learners. Must be taken simultaneously with EDFN 241. Includes field experience, which requires submission of satisfactory FBI, Act 34/151 clearances for eligibility for field placement.

EDFN 211H: 3 s.h.

H: Foundations Modern Educatio (D)

EDFN 241: 3 s.h.

Psychological Foundations of Teaching

Teaching and learning through the application of psychology to the activities of the classroom. Learning theory and practice, human growth and development, motivation, classroom management, evaluation and principles of effective instruction. Must be taken simultaneously with EDFN 211. Includes field experience, which requires submission of satisfactory FBI, Act 34/151 clearances for eligibility for field placement.

EDFN 241H: 3 s.h.

Hon:Psyc Foundation/Teaching

EDFN 279: 1-3 s.h.

Experimental

Experimental

EDFN 300: 3-12 s.h.

Co-Op Ed Experience in EDFN

Co-Op Ed Experience in EDFN

EDFN 312: 3 s.h.

Women and Education (P)

This course uses philosophical analysis and a sociology of knowledge approach to examine women's and girls' experiences with respect to educational institutions as they exist in contemporary America. These concerns are explored dialectically, examining not only how educational institutions and opportunities shape women, but also how the presence of women in educational activities alters the nature of that enterprise. Offered periodically. Prereq: COMM 100, ENGL 110, junior status.

EDFN 312H: 3 s.h.

Hnrs:Women and Education (P)

Hnrs:Women and Education

EDFN 320: 3 s.h.

Instructional Technology in Elementary Education

Students use case studies to explore the uses of technology and its application in elementary education. Topics include computer basics, applications software, curriculum integration, evaluation of educational software, telecommunications and multimedia presentation systems. Students are provided a series of hands-on experiences with hardware and software to develop the skills and competencies required of the elementary education teacher. Offered in fall, spring. No credit given if credit earned in EDFN 130, 220, 230, 330/530, 333/533 or EDAR 330/530.

EDFN 320H: 3 s.h.

H:Instructnl Technol in ELED

H:Instructnl Technol in ELED

EDFN 330: 3 s.h.

Instructional Technology, Design & Assessment

Instructional design and assessment will be used as a basis for planning and evaluating the use of technology for student-centered teaching and learning within specific disciplines. Offered in fall, spring. Admission to advanced professional studies. No credit given if credit earned in EDFN 130, 220, 230, 320/520 or EDAR 330/530. Taken with professional bloc. Professional bloc field experience includes approximately 150 hours in schools.

EDFN 336: 3 s.h.

Assistive Technology & Online Learning

Designed to provide pre-service special education teachers with experiences in the use of technology in teaching and online learning. This includes assistive technology by students with disabilities to become more independent, as well as the use of a variety of instructional technologies to encourage more active and effective learning. In addition, teacher candidates will learn various technological strategies and tools that can be used to provide different paths for student achievement and enhance student learning.

EDFN 355: 3 s.h.

Living Online (D, P)

"All the world's a stage" famously open Act II of As You Like It, a Shakespearean comedy uniquely positioned to showcase the valleys and peaks of human experience. Interestingly, as the world's stages become increasingly technological and anonymous, how youth learn, think, and find voice has also shifted. Looking beyond the social posturing characteristic of today's "selfie generation," these contexts offer incredible insights about the nature of learning and identity development. This course will explore the work of social theorists, technology gurus, public policy makers, and youth participants who continue to grapple with ever-changing landscape of social media. Using major current events as a lens: #EgyptianRevolution #OccupyWallStreet #RapeCulture #AllLivesMatter #Islamphobia, this course explores social media as a culturally mediated/sustaining response and practice worldwide.

EDFN 376: 3 s.h.

Whose School Is It? (D, P)

Historical, political and legal investigation of American public schooling in the 19th and 20th centuries and of the issue of equal educational opportunity in regard to gender, class, race and ethnicity. Students should have completed a lower level history, historiography, political science or educational history course. Offered periodically. Prereq: COMM 100, ENGL 110, junior status.

EDFN 376H: 3 s.h.**Hrs:Whose School Is It? (D, P)**

Honors Course - Historical, political and legal investigation of American public schooling in the 19th and 20th centuries and of the issue of equal educational opportunity in regard to gender, class, race and ethnicity. Students should have completed a lower level history, historiography, political science or educational history course. Offered periodically.

EDFN 379: 1-3 s.h.**Experimental**

Experimental

EDFN 386: 1-6 s.h.**Topics:**

Detailed investigation of a topic of current interest. Topic to be announced each time course is offered. Credit and meeting hours variable, depending on topic offered. May be taken more than once for credit as topic varies. Offered periodically.

EDFN 387: 1-6 s.h.**Topics:**

Detailed investigation of a topic of current interest. Topic to be announced each time course is offered. Credit and meeting hours variable, depending on topic offered. May be taken more than once for credit as topic varies. Offered periodically.

EDFN 388: 1-6 s.h.**Topics:**

Detailed investigation of a topic of current interest. Topic to be announced each time course is offered. Credit and meeting hours variable, depending on topic offered. May be taken more than once for credit as topic varies. Offered periodically.

EDFN 398: 3 s.h.**Urban Immersion Seminar**

Intensive living-learning experience based in an urban setting. On-site experience in urban schools and social service agencies is provided as well as service-learning experiences within the urban community. Professional development geared to developing the skills and knowledge base needed to work effectively in urban communities will be available. Course portfolio tailored to student's area of interest/major is required. Offered in summer. Prereq: COMM 100, ENGL 110 and junior status.

EDFN 399: 3,6 s.h.**Culture & Education Seminar**

Humans are divided into different groups based on religion, language, ability, beliefs, ethnicity, appearance, values, traditions and many other markers. Effective communication across these differences requires all humans, and teachers in particular, to develop skills that enable successful interaction and collaborate across boundaries. Culture can be understood, at least partially, as the background and preconceptions humans carry into any interpersonal situation. Since culture constitutes the keystone of identity, it is a key source of conflict between people, particularly in the teacher-student relationship. This seminar pairs discussions and readings about the nexus of culture, identity and education with immersion in different cultures, internationally, nationally and locally, to develop a deeper commitment in students to be effective teachers for all children across all differences. Prereq: EDFN 211 and 241

EDFN 400: 3-12 s.h.**Co-Op Ed Experience in EDFN**

Co-Op Ed Experience in EDFN

EDFN 489: 1-4 s.h.**Honors Course**

Two to four semesters of supervised research by highly motivated students capable of conducting independent research projects. For further information, see the Special Academic Opportunities section.

EDFN 498: 1-6 s.h.**Independent Study**

For further information, see the Special Academic Opportunities section.

EDFN 499: 1-4 s.h.**Departmental Honors**

Two to four semesters of supervised research by highly motivated students capable of conducting independent research projects. For further information, see the Special Academic Opportunities section.

Psychology

The Department of Psychology offers a B.A. degree in psychology, double majors with sociology and philosophy, a departmental honors program and a selection of elective courses for all Millersville University students. Psychology majors, through departmental advisement, usually plan a program that leads to one of three goals:

1. graduate with a bachelor's degree and enter the human service field;
2. graduate with a bachelor's degree and enter the business/industrial field; or
3. graduate with a bachelor's degree and enter graduate school for advanced study in psychology or related fields.

A minor in psychology is also available to undergraduate students. It provides a general survey of the field and training in psychological research methods.

Some undergraduate psychology courses are open to liberal arts and teacher education students. However, some laboratory, specialized and upper-level courses are open only to psychology majors and minors.

The cooperative education program in psychology is an optional arrangement whereby students combine practical on-the-job experience with their formal classroom instruction. The co-op program is available to all psychology majors who satisfy the departmental admissions requirements. For further information, see Cooperative Education in the Special Academic Opportunities section of this catalog.

the programs

- Psychology Minor (p. 211)
- Psychology, B.A. (p. 211)

the faculty

Baker, Jason; Associate Professor

College of Education and Human Services

B.S., Juniata College, 1999; M.Ed., The Pennsylvania State University, 2002; Ph.D., Regent University, 2008

Banna, Kelly; Associate Professor

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B.S., James Madison University, 1999; M.S., Auburn University, 2005; Ph.D., Ibid., 2007

Behun, Richard Joseph; Associate Professor

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B.A., California University of Pennsylvania, 2005; M.S., The University of Pittsburgh School of Law, 2007; M.S.Ed., Duquesne University (School Counseling), 2008; M.S.Ed., Ibid. (School Administration), 2013; Ph.D., Ibid., 2013

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Cook, Shaun; Associate Professor
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B.S., Bridgewater State College, 1996; M.A., Brandeis University, 1999; Ph.D., University of Arizona, 2006

Gallagher, Shawn; Professor
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Garner, Nadine; Associate Professor
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B.M., Westminster Choir College, 1991; M.S., Shippensburg University, 1992; M.Ed., Ibid., 1994; Ed.D., Duquesne University, 2000

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Vredenburg, Debra; Associate Professor
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B.A., Slippery Rock University, 1990; M.A., Ibid., 1992; Ph.D., Ohio University, 1998

the courses

PSYC 100: 3 s.h.

General Psychology (G3)

An introduction to the study of behavior and mental activity, including such aspects as motivation, emotions, sensation and perception, individual differences, the nervous system, learning and personality with a view of understanding behavior.

PSYC 100H: 3 s.h.

Hnrs:General Psychology (G3)

Hnrs:General Psychology

PSYC 179: 3 s.h.

Experimental

Experimental

PSYC 205: 3 s.h.

Psychology Misconceptions (G3, W)

This course will provide an introduction to some of the most popular and persistent misconceptions in Psychology. These misconceptions will cut across sub-disciplines within Psychology, to include clinical, cognitive, and social psychology, as a few examples. The origin of these myths will be explored, as well as how they are seen today in the popular media, in practice, in education, and in research domains. The implications of the myths will also be considered. The course will also address how to effectively combat these myths. Prerequisites: PSYC 100 and ENGL 110

PSYC 211: 4 s.h.

Principles of Statistics and Experimental Design 1 (W)

An introduction to research methods and design and to statistical analysis of psychological data. 3 hrs. lec., 2 hrs. lab. Prereq: ENGL 110, PSYC 100 and MATH 101, 105, 204 or 130 with a minimum grade of C- or math placement into MATH 130 or above.

PSYC 212: 4 s.h.

Principles of Statistics and Experimental Design 2

A study of standard experimental designs and statistical procedures widely used in psychological research. 3 hrs. lec., 2 hrs. lab. Prereq: PSYC 211 with a grade of C- or higher and MATH 130 with a grade of C- or higher.

PSYC 215: 3 s.h.

Intro to Physiological Psychology

Serves as an introduction to the nervous system in relation to cognition and behavior. It will begin at the cellular level, building up to the systems level. Offered fall, spring. Prereq: BPE 100 or BIO 100 or 101 and PSYC 100.

PSYC 216: 3 s.h.

Intro Learn Beh Analysis

This course provides an introduction to the field of Behavior Analysis, and covers the basic principles of conditioning, learning, and behavior change derived from the experimental literature. Topics include an introduction to the philosophy of Radical Behaviorism, historical development of the field, single-subject experimental design and data analysis, and principles of respondent and operant conditioning. Prereq: PSYC 100

PSYC 227: 3 s.h.

Development of the Child and Adolescent (G3)

A study of the theory and research pertaining to the growth, development and behavior of children through adolescence. Prereq: PSYC 100. No course credit given if credit earned for separate course in child psychology or adolescent psychology. No credit given if credit earned for PSYC 228. PSYC Majors may only count one of PSYC 227, 228 or 229 as a core elective.

PSYC 227H: 3 s.h.

Hnrs:Devel Child and Adolescent (G3, W)

Hnrs:Devel Child and Adolescent

PSYC 228: 3 s.h.**Life Span Human Development (G3)**

A focus upon the major stages of human development, beginning with infancy and continuing through the developmental changes of childhood, adolescence and adulthood through to old age and death. Cognitive and psychosocial aspects of human development are emphasized. Offered Periodically. Prereq: ENGL 110 and PSYC 100. No credit given if credit earned for PSYC 227 or 229. PSYC Majors may only count one of PSYC 227, 228 or 229 as a core elective.

PSYC 229: 3 s.h.**The Adult Years (G3)**

An examination of the years from young adulthood to retirement. Focuses on intimate relationships, family, parenting and other enduring commitments. Offered in spring. Prereq: PSYC 100. No credit given if credit earned for PSYC 228. PSYC Majors may only count one of PSYC 227, 228 or 229 as a core elective.

PSYC 234: 3 s.h.**Human Relations (G3)**

An examination of human interactions, both historically and currently, in diverse structures (e.g., family, social, educational, political, economic, etc.). Course content targets increased awareness and understanding of values, traditions and rites of dominant and minority groups and their effect upon interpersonal and intergroup relations. Offered periodically.

PSYC 246: 3 s.h.**Evolutionary Psychology**

Reviews evolutionary theory, surveys research and, most importantly, explains how evolutionary psychology can be applied to disciplines with and beyond the field of psychology. Offered periodically. Prereq: BPE 100 or BIOL 100 or 101 and PSYC 211.

PSYC 256: 3 s.h.**Psychology Human Adjustment (G3)**

An examination of factors that shape personal and social behavior, with a focus on basic issues, problems and therapies as they relate to personal adjustment. Offered in fall, spring. Prereq: ENGL 110 and PSYC 100.

PSYC 256H: 3 s.h.**Hon: Psych Human Adjustment (G3)****PSYC 279: 3 s.h.****Experimental**

Experimental

PSYC 300: 3-12 s.h.**Co-Op Ed Experience in Psyc**

Cooperative Education in Psychology

PSYC 311: 3 s.h.**Psychology of Drug Addiction (G3, W)**

An investigation of the problems associated with drug addiction. Evaluations of opiates, stimulants, barbiturates, depressants, hallucinogens, marijuana and alcohol, with consideration of the effects of these drugs on the individual. Offered in fall, spring. Prereq: ENGL 110 and PSYC 227 or 228 or 229 or 234.

PSYC 311H: 3 s.h.**H:Psychology of Drug Addiction (G3, W)****PSYC 314: 4 s.h.****Adv. Lab Cognitive Psychology**

A laboratory course designed to examine the nature of human memory, perception and thought, and to provide an introduction to the techniques used to study these phenomena. 3 hrs. lec., 2 hrs. lab. Offered annually. Prereq: C- or higher in PSYC 211, 212 and 215.

PSYC 315: 4 s.h.**Adv Lab Sensation & Perception**

A laboratory course designed to develop an understanding of the models and theories of the sensory and perceptual systems. 3 hrs. lec., 2 hrs. lab. Offered in fall, spring. Prereq: C- or higher in PSYC 211, 212 and 215.

PSYC 316: 4 s.h.**Adv Lab Learn Beh Analysis**

A theoretical laboratory course designed to investigate and apply the concepts of learning and motivation to both human and animal behavior. 3 hrs. lec., 2 hrs. lab. Offered annually. Prereq: C- or higher in PSYC 211, 212 and 216.

PSYC 317: 3 s.h.**Social Psychology**

A review of the principles of social psychology derived from experimental study. Offered in spring. Offered in spring. Prereq: PSYC 100. PSYC 211 recommended.

PSYC 317H: 3 s.h.**HNRS: Social Psychology****PSYC 318: 3 s.h.****Psychology of Racism (D, P)**

Examination of individual and institutional racism in all its aspects, with an emphasis on the various psychological explanatory theories and supporting research as well as the various techniques for alleviating this problem. Additional overview of resultant effects on the victims. Prereq: COMM 100, ENGL 110, PSYC 100 and junior status.

PSYC 318H: 3 s.h.**H:Psychology of Racism (D, P)**

Honors Psychology of Racism

PSYC 325: 3 s.h.**Happiness and Well-Being (D, P)**

This course will examine the constructs of happiness and well-being across multiple variables such as culture, environment, spirituality, and personal factors. Common myths and misconceptions will also be evaluated. Students will leave the course with a greater understanding of the science behind the constructs of happiness and well-being as well as strategies to apply in their own pursuit of living a fulfilling life. Junior status.

PSYC 325H: 3 s.h.**Happiness and Well-Being (D, P)**

Honors Happiness and Well-Being

PSYC 326: 3 s.h.**Human-Animal Bond**

The course will introduce students to the interaction between human and animals with emphasis on the bond between people and their pets. The course will provide an overview of the social, emotional, and psychological implications of pet ownership including attachment and pet loss. The use of companion animals in education, healthcare and clinical settings will be covered as well as the connection between animal maltreatment and interpersonal violence. A service learning project involving contact with companion animals is required. Prereq: PSYC 100 and PSYC 211

PSYC 327: 4 s.h.**Adv Lab in Developmental Science**

Examines advanced topics in child and adolescent development in depth through the application of experimental and nonexperimental research approaches and through critical reading of the research literature. 3 hrs. lec., 2 hrs. lab. Offered annually. Prereq: C- or higher in PSYC 211, 212 and 227 or 228. Submission of satisfactory FBI, Act 34/151 clearances required prior to the start of the course, but not for registration.

PSYC 328: 3 s.h.**Psychology and Religion (P)**

An exploration of psychological and religious questions, issues and processes in the search to give meaning to one's personal and shared journey. Prereq: COMM 100, ENGL 110, PSYC 100 and junior status.

PSYC 329: 3 s.h.**Industrial Psychology (G3, W)**

A study of research and applications of psychology to the work setting. Knowledge of the psychological processes of learning, motivation, perception and assessment is used to analyze selection, training, work design and performance. Offered annually. Prereq: ENGL 110 and PSYC 100 and MATH 130, 235 or PSYC 211.

PSYC 329H: 3 s.h.**Hon: Industrial Psychology (G3, W)****PSYC 335: 3 s.h.****Personality Theory (G3)**

An introduction to historic and contemporary theories of the human personality. Offered in fall, spring. Prereq: PSYC 100.

PSYC 335H: 3 s.h.**H:Personality Theory (G3)****PSYC 337: 3 s.h.****Abnormal Psychology (G3, W)**

A comprehensive study of the etiology, characteristics and treatment in the categories of abnormal behavioral manifestation. Offered in fall, spring. Prereq: ENGL 110 and PSYC 100.

PSYC 337H: 3 s.h.**H:Abnormal Psychology (G3, W)****PSYC 346: 3 s.h.****Applied Behavior Analysis**

An examination of theory, research and techniques related to the applied behavior analysis, with special emphasis placed on the application in a variety of settings (e.g., family, school and industry). Prereq: PSYC 100.

PSYC 346H: 3 s.h.**H: Applied Behavior Analysis**

Honors Applied Behavioral Analysis.

PSYC 350: 3 s.h.**Cognitive Science (P)**

Basic introduction to cognitive science. Reviews attempts to understand cognition using insights from psychology, artificial intelligence, philosophy, linguistics and the neurosciences. Examines the synthesis of those attempts in the emergent field of cognitive science. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

PSYC 350H: 3 s.h.**H: Cognitive Science (P)****PSYC 356: 3 s.h.****Health Psychology**

A review of research and theory linking psychological factors to health. Discussion of psychosocial aspects of health behavior, pain, stress and the impact on biological systems. Evaluation of psychological and behavior interventions for health behavior change and chronic illness. Offered in fall. Prereq: PSYC 100 and PSYC 227 or 228 or 229 or 234 or 256.

PSYC 357: 3 s.h.**Neuropsychology**

This survey course will provide a thoughtful and comprehensive introduction to the field of human neuropsychology, including the history, methods, and logic of neuropsychological investigations. Prereq: BIOL 100 or BIOL 101 and PSYC 211.

PSYC 357H: 3 s.h.**Hon: Neuropsychology****PSYC 365: 3 s.h.****Human Memory**

This survey course will provide a scientific introduction to human memory. The structure and processes of human memory will be covered. There will be consideration of the current and past research, as well as models on memory. Prereq: BIOL 100 or 101 and PSYC 211.

PSYC 379: 1-4 s.h.**Experimental**

Experimental

PSYC 400: 3-12 s.h.**Co-Op Ed Experience in Psyc**

Cooperative Education in Psychology

PSYC 403: 3 s.h.**Family Systems**

An investigation of the impact of the multigenerational family system on the individual. Assessment of functional and dysfunctional family systems. Emphasis upon theorists and their orientations and intervention strategies. Offered periodically. Prereq: PSYC 100 and junior or senior standing.

PSYC 415: 3 s.h.**Advanced Physiological Psych**

A systematic examination of the nervous and sensory systems and their regulation of human behavior. May not be used in place of PSYC 314, 315 or 316 to fulfill the advanced laboratory requirement. Offered Periodically. Prereq: PSYC 100 and one course in biology. Chemistry helpful. Junior or senior standing.

PSYC 417: 3 s.h.**Tests and Measurements**

An introduction to the basic principles of psychological testing and measurement. Focus is upon issues in test construction and design, evaluations of psychometric properties and applications of tests in various fields of psychology. Offered in fall or spring. Prereq: PSYC 211 or permission of instructor.

PSYC 427: 3 s.h.**Childhood Disorders**

An in-depth look at major childhood psychological disorders. Diagnostic criteria, etiology and developmental progression presented. Introduction to diagnostic assessment techniques and commonly used interventions. Offered annually. Prereq: PSYC 100 and PSYC 227 or 228, junior/senior status.

PSYC 427H: 3 s.h.**Hon: Childhood Disorders**

PSYC 447: 3 s.h.**Counseling Strategies**

An introduction to the process and practice of counseling. Emphasis is placed on learning counseling theories and on counseling skills. Offered in fall, spring. Prereq: PSYC 100. Junior or Senior status.

PSYC 447H: 3 s.h.**Hon: Counseling Strategies****PSYC 454: 3 s.h.****History and Systems of Psych**

Study of the development of psychology from a branch of philosophy to a modern science. Offered periodically. Prereq: PSYC 100 and junior or senior standing. Must have earned 75 credits and be enrolled/have taken the advanced lab to count for capstone requirement.

PSYC 455: 1-3 s.h.**Seminar in Psychology**

An advanced course devoted to critical analysis of student and professional research using staff consultant leadership. Offered periodically. Prereq: junior/senior psychology majors only and permission of instructor.

PSYC 462: 3 s.h.**Art, Music and Written Word (P)**

Study of psychological processes involved in the production and experience of music, art and literature coupled with a review of psychological theories of human creativity. Key principles within the domain of psychology will be illustrated and explored through the study of the works of artists, musicians and writers. Offered annually. Prereq: PSYC 100, COMM 100, ENGL 110 and junior status. PSYC 335 recommended.

PSYC 462H: 3 s.h.**Hon: Art, Music, Written Word (P)****PSYC 479: 1-4 s.h.****Experimental**

Experimental

PSYC 483: 3 s.h.**Applied Ethology**

An introduction to applied animal behavior, including (1) the behavior of companion animals, animals in zoos & aquaria, animals in labs, and animals in agriculture/aquaculture; (2) animal welfare, (3) ethical issues in animal use, (4) methods of training captive animals, and (5) career options and certifications in animal behavior. 3 hrs lecture. Offered periodically. Prereq: PSYC 316 or BIOL 385; PSYC 300 or BIOL 300 or PSYC 495; Senior standing or permission of instructor. Students cannot also earn credit in BIOL 483.

PSYC 489: 1-4 s.h.**Honors Course**

For the definition of departmental honors and eligibility, refer to the Academic Policies section of this catalog.

PSYC 490: 1 s.h.**Honors Seminar**

Examination and discussion of current research issues in psychology. May be taken a maximum of three times. Enrollment limited to students with at least 45 s.h. who are applying to the psychology department honors program and to those already admitted to that program. Offered in fall, spring. Prereq: permission of instructor.

PSYC 495: 1-6 s.h.**Directed Projects in Psych**

Supervised field experience involving the application of psychological principles. Junior or senior standing. Offered in fall, spring. Prereq: permission of instructor. Insurance and recent clearances (Act 34/ Act 151/FBI clearances and TB test results) may be required depending on the setting.

PSYC 496: 1-4 s.h.**Topics In Psychology**

Detailed investigation of a topic of current research interest. Topic to be announced each time course is offered. Credit and meeting hours variable, depending on topic offered. May be taken more than once for credit as topic varies. Offered periodically. Prereq: junior or senior standing and permission of instructor.

PSYC 498: 1-4 s.h.**Independent Study in Psych**

For further information on independent study, see the Special Academic Opportunities section of this catalog.

PSYC 499: 1-4 s.h.**Departmental Honors**

For the definition of departmental honors and eligibility, refer to the Academic Policies section of this catalog.

DEPARTMENTAL POLICIES

The Admission to the Major Policy and the Retention in the Major Policy apply to all majors enrolled in the psychology B.A. program.

ADMISSION TO THE MAJOR POLICY

Current students at Millersville University will be permitted to declare psychology as a major only if they have a CGPA of 2.25 or higher, based on at least 15 credit hours, including PSYC 100 General Psychology, and if space is available. Decisions to accept new majors are based in part on space available and hence are competitive based upon previous academic performance, both in psychology courses and overall, and on math preparation. Readmitted students must have a 2.25 or higher CGPA at Millersville University in order to be admitted to the psychology major.

RETENTION IN THE MAJOR POLICY

At the end of each semester, the psychology department will review the academic performance of its majors. If any student with zero to 59.5 earned credits has a CGPA below 2.0, he/she will be notified by the department that he/she has been placed on probation in the major status for the semester in which notification is made. The department will specify minimal achievement during the probationary semester to continue in the major. If the student is not successful in meeting the requirements during the probationary semester, he/she will be removed from the major.

Students must successfully complete PSYC 100 General Psychology, PSYC 211 Principles of Statistics and Experimental Design 1 and two core electives prior to completing 90 credit hours.

COMPLETION OF THE MAJOR POLICY

Students must earn a C- or higher in all required psychology courses as defined in the catalog and curriculum (blue) sheet. The policy currently applies to the 15 credits of coursework required in the major (PSYC 100 General Psychology, PSYC 211 Principles of Statistics and Experimental Design 1, PSYC 212 Principles of Statistics and Experimental Design 2 and an Advanced Lab—currently one of PSYC 314 Adv. Lab Cognitive Psychology, PSYC 315 Adv Lab Sensation & Perception, PSYC 316 Adv

Lab Learn Beh Analysis, PSYC 327 Adv Lab in Developmental Science) but not to elective courses (core or general) taken to complete their psychology requirements.

Students must complete at least three capstone credits. To be eligible for capstone credits, psychology majors must have earned at least 75 credits and have completed or be enrolled in their advanced laboratory course.

The following can be taken for capstone credit:

Code	Title	Hours
PSYC 454	History and Systems of Psych	3
PSYC 455	Seminar in Psychology	1-3
PSYC 495	Directed Projects in Psych	1-6
PSYC 489	Honors Course	1-4
PSYC 490	Honors Seminar	1
PSYC 499	Departmental Honors	1-4
PSYC 498	Independent Study in Psych	1-4
COOP 300		

POLICY REGARDING ADVANCED PLACEMENT (AP) CREDIT IN PSYCHOLOGY

Entering students who receive a score of 3 on the Advanced Placement (AP) Examination in Psychology shall be awarded three credits for an elective course designated as a 100-level PSYC course. Entering students who receive a score of 4 or 5 on the AP examination shall be awarded three credits for PSYC 100 General Psychology.

PASS/FAIL RESTRICTION ON COURSES FOR PSYCHOLOGY MAJORS AND MINORS

Psychology majors may not take any psychology courses or any required related courses on a pass/fail basis. Psychology minors may not take any psychology courses on a pass/fail basis.

POLICY ON CREDIT RESTRICTION FOR DEVELOPMENTAL PSYCHOLOGY COURSES

The psychology department offers three undergraduate developmental psychology courses: PSYC 227 Development of the Child and Adolescent, PSYC 228 Life Span Human Development and PSYC 229 The Adult Years. Credit is awarded for any one of the individual courses. Credit is also awarded for the combination of PSYC 227 Development of the Child and Adolescent and PSYC 229 The Adult Years, but not for any other combination of developmental psychology courses.

POLICY REGARDING COOPERATIVE EDUCATION AND DIRECTED PROJECTS IN PSYCHOLOGY

A limit of six s.h. of cooperative education (PSYC 300 Co-Op Ed Experience in Psyc, PSYC 400 Co-Op Ed Experience in Psyc or PSYC 495 Directed Projects in Psych) or any combination of the two may be taken by a student and counted in the psychology major. In unusual circumstances, and with written permission of the student's faculty advisor, the directed projects instructor and the department of psychology's cooperative education advisor, up to six additional s.h. may be taken; however, these credits may not be counted toward the psychology major.

Psychology Minor

A minor in psychology provides students with an introduction to the foundational principles of human behavior and research methods in psychology. Students who are interested in the minor should know that

some courses require successful completion of prerequisites (i.e., PSYC and MATH courses) and to consult with their advisor before applying to the minor.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Psychology, B.A.

Millersville University's Psychology BA prepares students to be well versed in many aspects of psychology, qualifying them for graduate school or a job in an incredibly diversified field. The program exposes students to both the humanistic and the more traditional experimental approaches to the study of behavior. Curriculum flexibility allows psychology majors to prepare for graduate training in psychology and related fields, or for employment in a variety of human service or business and industrial areas. Through learning experiences in and out of the classroom, our undergraduate program prepares students who are well-versed in psychological theories and scientific methodologies and who demonstrate cultural sensitivity and embrace a variety of points of view.

School of Social Work

The social work program at Millersville University leads to a Bachelor of Arts degree in social work. Millersville's social work baccalaureate program is professionally accredited by the Council on Social Work Education. Based on the general education curriculum, the social work curriculum is designed to prepare students for beginning professional practice in social agencies and other settings where social workers are employed. The program educates the general practitioner; therefore, it is built on basic required courses. However, it also allows students to explore areas of interest through elective courses and field instruction assignments.

Affirming the mission of Millersville University, a public, liberal arts institution situated in South Central Pennsylvania, the baccalaureate social work program educates students to be competent, evidence-informed social work professionals who embrace core social work values; enhance human and community well-being; promote social, economic and environmental justice; and advance human rights through generalist social work practice. The University and the program provide a learning environment that prepares students to work in an increasingly diverse society and to meet contemporary social, cultural, economic, political and global challenges.

Social Work Program Goals

To meet the purpose of the social work profession and the mission of Millersville University and the social work baccalaureate program, faculty seek to prepare students/graduates to:

- Goal 1: Strengthen human connections and relationships
- Goal 2: Practice effectively and ethically
- Goal 3: Engage to promote justice and human rights
- Goal 4: Think globally; act locally

The curriculum is designed to help students integrate knowledge and theories from many academic disciplines with social work concepts, values and practice skills. Courses in the social work program attempt to develop an understanding of the human condition and human diversity. The social work major needs to understand biological, psychological and sociocultural aspects of human development; characteristics of human interaction with the social environment; the role, structure and function of social welfare policies and programs; social work intervention methods; and social work research findings and methods.

In addition to theoretical instruction, students are given ample opportunity for practical experience. The experiential requirements begin in the introductory courses and carry through to formal work in advanced courses. The culmination is 450 hours practicum during spring semester, wherein the student can integrate knowledge and skills in a social agency or other social service setting in the community.

A formal Professional Readiness Assessment process takes place for each student prior to placement in a social service setting for field instruction. Qualifications are based on academic performance, oral and written communication skills, and demonstrated ethical behavior, values and commitment to social work as a career. The social work faculty has the right to dismiss from the program, at any time, students found not qualified for social work practice.

Upon completion of the undergraduate social work degree, graduates will be able to:

1. Demonstrate ethical and professional behavior.
2. Engage diversity and difference in practice.
3. Advance human rights and social, economic and environmental justice.
4. Engage in practice-informed research and research-informed practice.
5. Engage in policy practice.
6. Engage with individuals, families, groups, organizations and communities.
7. Assess individuals, families, groups, organizations and communities.
8. Intervene with individuals, families, groups, organizations and communities.
9. Evaluate practice with individuals, families, groups, organizations and communities.

the programs

- Gerontology Minor (p. 216)
- Social Justice Minor (p. 216)
- Social Work, B.A. (p. 216)

the faculty

Bethel, Joyous; Assistant Professor
College of Education and Human Services
B.A., University of Oklahoma, 1981; M.S.W., Ibid, 1982; Ph.D., Barry University, 1997

DeJesus, Bertha; Assistant Professor
College of Education and Human Services
B.S.W., Shippensburg University, 1998; M.S.W., Widener University, 2004; D.S.W., Kutztown-Millersville University, 2018

Felizzi, Marc; Associate Professor
College of Education and Human Services
B.A., Delaware State University, 1978; M.S.W., Ibid., 1995; Ph.D., Widener University, 2011

Foels, Leonora; Associate Professor
College of Education and Human Services
B.S., Webber College, 1988; M.S.W., Simmons College, 1993; Ph.D., Barry University, School of Social Work, 2007

Frank, Jennifer; Associate Professor
College of Education and Human Services
B.A., Millersville University, 1999; M.S.W., Ibid., 2009; Ph.D., Bryn Mawr College, 2017

Girvin, Heather; Associate Professor
College of Education and Human Services
B.A., Dickinson College, 1992; M.S.S., Bryn Mawr College, 1995; Ph.D., Ibid., 2002

Granruth, Laura; Associate Professor
College of Education and Human Services
B.A., Fordham University, 1984; M.S.W., Virginia Commonwealth University, 2001; Ph.D., Catholic University of America, 2009

Ogongi, Wanja; Associate Professor
College of Education and Human Services
B.A., University of Nairobi (Kenya), 1991; M.S.W., West Chester University, 2005; Ph.D., Widener University, 2012

Proctor, Curtis; Assistant Professor
College of Education and Human Services
B.A., University of Oklahoma, 1989; M.S.W., University of Iowa, 1992; Ph.D., Case Western Reserve University, 2005

Redcay, Alex; Associate Professor
College of Education and Human Services
B.A., Truman State University, 2001; M.S.W., Southern Connecticut State University, 2008; Ph.D., Rutgers University, 2016

Rice, Karen; Professor
College of Education and Human Services
B.A., Millersville University, 1991; M.S.W., Temple University, 2000; Ph.D., University of Maryland, 2011

Walsh, Kathleen; Associate Professor
College of Education and Human Services
B.S.W., University of Maryland, Baltimore, 1996; M.S.W., Ibid., 1997; Ph.D., Ibid., 2015

the courses

GERT 100: 3 s.h.

Introduction to Gerontology (G3)

An introduction to the field of aging and examination of the physiological, sociological, psychological and economic perspectives. This course also focuses on problems of the aged at levels of self, interactions with others and the broader societal context. Offered in spring of even years.

GERT 179: 3 s.h.

Experimental

Experimental

GERT 210: 3 s.h.

Aging and the Law (G3)

Introduction to legal concepts and thinking. Study of the laws, regulations, social policies and psychological factors that affect delivery of service to the elderly in the areas of economic security, employment, health care, wills, mental health, housing, criminal justice, consumer protection. Offered periodically. Prereq: ENGL 110.

GERT 279: 3 s.h.

Experimental

Experimental

GERT 300: 3-12 s.h.

Co-Op Ed Experience in Gert

Supervised practicum at cooperating agencies and organizations active in serving the elderly, for a minimum of 150 hours (10 hrs./week). Involvement in meeting physiological and/or psychological and/or social needs of the elderly. Prereq: GERT 100 and at least 30 s.h. of general education and gerontology courses. Faculty involvement in and approval of practicum plan. Malpractice liability insurance required.

GERT 379: 3 s.h.

Experimental

Experimental

GERT 400: 3-12 s.h.

Co-Op Ed Experience in Gert

Co-Op Ed Experience in Gert

GERT 479: 3 s.h.

Experimental

Experimental

GERT 500: 3-12 s.h.

Co-Op Ed Experience in Gert

Co-Op Ed Experience in Gert

SOWK 102: 3 s.h.

Modern Social Welfare Dilemmas (G3)

Introduction to social work's approach to social problems, including how public-policy decisions affect individuals and families; overview of competing public-policy agendas in social welfare and alternative strategies for problem resolution, societal values and trends affecting service delivery; understanding social work in action; examining core concepts, values and ethics.

SOWK 179: 3 s.h.

Experimental

Experimental

SOWK 201: 3 s.h.

Social Welfare Policy and Economics

This course offers a general understanding of economic theory as it applies to both microeconomic and macroeconomic decision making. The course comprises two major foci: 1) practical applications of decision-making paradigms for practice with individuals and families in the social work context; and 2) understanding the effects of economic conditions on social welfare policy, those who make policy and those who advocate for changes in the policy arena. Prereq: SOWK 102. SOWK majors and Social Justice minors only. Sophomore status required.

SOWK 203: 3 s.h.

Human Behavior and the Social Environment 1

Examines the life span approach to human development, with focus on interaction between the individual's biopsychosocial functioning and the social environment. Analyzes the impact of human diversity on behavior in social situations, with particular emphasis on populations at risk. Studies how factors of human diversity affect social policy. Volunteer work required. Prereq: SOWK C or higher in 102 and sophomore status or permission of instructor. Prereq or coreq: BIOL 204, PSYC 100, SOCY 210.

SOWK 279: 3 s.h.

Experimental

Experimental

SOWK 300: 3-12 s.h.

Co-Op Ed Experience in Sowk

Co-Op Ed Experience in Sowk

SOWK 301: 3 s.h.

Social Work Practice 1

Study of the wide range of activities that constitute the generalist social work approach. Designed to assist students to develop basic entry-level professional social work competencies within a systems framework. Prereq: ENGL 110. Prereq or coreq: SOWK 203, junior standing. Corequisite: SOWK 322. SOWK majors only.

SOWK 302: 3 s.h.

Social Work Practice 2

: In-depth examination of the knowledge, values and skills that form the base of social work practice; method selection and skill development in social work intervention; practice with social work communication skills. Emphasis on practice with groups and vulnerable populations. Prereq: C or higher in SOWK 301. Corequisite: SOWK 430. SOWK majors only.

SOWK 302H: 3 s.h.

H:Social Work Practice 2

SOWK 303: 3 s.h.

Social Welfare and the Law

Significant legislation, court decisions and regulatory language shape public social policy and affect the legal base for social work practice. Among substantive areas discussed are: family law and policy, mental health and substance abuse law and policy, constitutional and civil rights, poverty law and policy, social welfare law and policy, and professional licensing. Prereq: C or better in SOWK 102 or permission of instructor; GOVT 111 or 112; Social Work Majors or Social Justice Minors Only.

SOWK 303H: 3 s.h.

Hon: Social Welfare & the Law

SOWK 304: 3 s.h.**Sowk, Corrections & Alt Trmnt (G3)**

A general introduction to the study of the juvenile correctional system in the United States and assessment and treatment of youth who may be at risk for interacting with the system. A historical perspective of juvenile, as well as adult, corrections will be offered, along with discussions and examinations of the etiology and extent of juvenile crime as well as antecedents of violence, environmental and ecological factors for the causes of criminality, along with assessment of at risk youth and their families. A historical perspective, rehabilitation approaches, de-institutionalization, community based programs and alternatives to incarceration will be reviewed.

SOWK 305: 3 s.h.**Social Work and Child Welfare (G3)**

Concepts, policies and practices in child welfare services as a response to the needs of children and their families; focus on services designed to support, supplement or substitute for the care usually given by biological parents; social work practices and public-policy issues in foster care, adoption, day care, institutional care, protective services, teenage pregnancy and juvenile delinquency. \

SOWK 306: 3 s.h.**Social Work and Aging (G3)**

A developmental approach to the aging process as one phase of the life cycle; biological, psychological, social and economic needs of the elderly; analysis of societal provision for these needs; public-policy issues and pertinent social legislation; community-based programs of social and health services; techniques of generic social work with older persons; advocacy and policy planning for the aging. Lectures and discussion supplemented with audiovisual material, speakers and field visits as available. Volunteer experience with an older person or persons required.

SOWK 307: 3 s.h.**Social Work and Health Care (G3)**

Scope and contribution of professional social work in comprehensive healthcare settings focusing on individual and community health needs, social and behavioral aspects of illness, essential practice components and skills required of social workers, healthcare policy, issues and trends, alternative healthcare programs and research needs.

SOWK 308: 3 s.h.**Social Work & Substance Use (G3)**

Concepts, policies, issues, trends, theories and social work practice skills in settings affected by substance use. Focuses on interaction of affected individuals with others in family, social, economic, educational, legal and political systems. Examines the role of the social worker in identification, intervention and use of network of community resources.

SOWK 309: 3 s.h.**SOWK Behavior & Emotion Health**

Concepts, policies, issues, trends, and theory associated with social work, behavioral and emotional health. Focuses on interaction of affected individuals with others in family, social, economic, educational, legal and political systems. Examines the role of the social worker in identification, intervention and use of network of community resources and various practice modalities, including direct intervention as well as social policy analysis, research and prevention.

SOWK 312: 3 s.h.**SOWK & Wmn: Strgth, Need & Opp (G3, W)**

Scope and contribution of professional social work in regard to women's issues and concerns in contemporary society. Emphasis on the analysis of individual and community women's needs, the social and behavioral aspects of women's concerns, the essential practice components and skills required of social workers, social welfare policy and women, issues and trends, alternative women's programs and research needs. Prereq: ENGL 110

SOWK 313: 3 s.h.**Family Violence (P)**

Professionals and society at large have recognized violence in the family against children, spouses and the elderly as a social problem. Other emerging related issues include cross-cultural violence, partner violence in gay/lesbian relationships, courtship violence and date rape. Focus will also include theories of abuse with various populations as well as treatment approaches to the various forms of family violence. Prereq: COMM 100, ENGL 110 and junior status.

SOWK 313H: 3 s.h.**H: Family Violence (P)****SOWK 314: 3 s.h.****Global Well Being (D, P)**

This course is interdisciplinary and intercultural in nature. It is designed to prepare all students whose anticipated careers are primarily oriented to direct work with the global community, both domestically and internationally. There will be an emphasis on developing interpersonal communication skills for interacting with people whose way of life differs from one's own; developing insights into the multi-faceted issues impacting our world; and understanding global interconnection with oppression to foster social justice. The cornerstone of this course is service-learning opportunities on a local and global level.

SOWK 314H: 3 s.h.**HON:Global Well Being (D, P)****SOWK 315: 3 s.h.****Grief and Bereavement (D)**

Provide a framework for critical analysis of the dynamics of grief and bereavement. Combining a general social systems perspective, an ecological perspective, and the problem-solving approach, this course will assist students to integrate knowledge about grief and bereavement into their knowledge of practice theory and human behavior at the micro, mezzo, and macro levels. Students will appreciate the diversity of grieving practices and rituals among cultural, religious, and ethnic groups. Bereavement dynamics across the life span are addressed. The impact of death and disaster at the community level will be understood, including assessment tools and intervention strategies.

SOWK 316: 3 s.h.**Mediation (G3)**

Mediation as an alternate form of dispute resolution is continuing to rise and is being used in corporate, labor, consumer, and family issues widely across the United States. Students in the Mediation class will focus on practical and theoretical aspects of mediation and its place in the larger framework of alternate dispute resolution. Skills in helping parties find common ground, creating a climate for reaching agreement, aspects of confidentiality, and both directive and non-directive mediation techniques will be explored. Each student will have the opportunity to role play at least one brief session in the role of mediator.

SOWK 317: 3 s.h.**Perspectives on Poverty in the United States (D, P)**

Perspectives on Poverty in the United States will provide students with an opportunity to explore the dynamics of and cultural attitudes surrounding poverty in the United States. This course will provide an atmosphere conducive to critical thinking, personal reflection, and social action. The essential inquiry of the course is to task students with critical interrogation of the question "what is poverty all about?" using multiple perspectives and diverse frameworks. To do this, students will explore diverse disciplinary viewpoints, including those of sociology, social work, economics, history, and media. This course will use an historical lens to investigate cultural constructions of the problem of poverty from colonial times to present. Modern conceptualizations of poverty from the perspective of popular culture and our own families and experiences will likewise be interrogated. The primary lens of the course will be the use of personal narratives that people in poverty have written about their own experience to help students develop social empathy. Additionally, the course will task students to also explore both cultural and personal assumptions associated with poverty, a pedagogical strategy that will help poise them to begin a journey as community leaders in advancing social justice. Throughout this critical inquiry, students from all disciplines will explore the complexities of poverty and economic vulnerability, developing empathy, knowledge, and skills that will help them to become thoughtful and productive citizens in any field.

SOWK 322: 3 s.h.**Evidence-Informed Lit SOWK (W)**

Aiming to strengthen students' foundational and professional writing skills in preparation for professional social work practice, a combination of peer review processes and iterative instructor feedback is utilized to support students as they produce the course's primary product—a comprehensive literature review. Students receive instruction related to foundational writing skills and complete assignments related to writing forms required of social work professionals to increase their writing competency.

SOWK 323: 3 s.h.**Human Behavior and the Social Environment 2**

The second of two courses in human behavior and the social environment, emphasizing 1) the interaction of social and economic forces with individuals and social systems; 2) traditional and alternative theories about systems as they interact with people, promoting and impeding health, welfare and well-being, in the context of human culture and diversity; and 3) knowledge about opportunity structures and how they promote and deter human development and meeting needs. Prereq: C or higher in SOWK 203. SOWK majors or Social Justice minors only.

SOWK 330: 3 s.h.**Social Work Research (W)**

Emphasis on the scientific method in development of beginning evaluative skills that contribute to practice competence. Knowledge to evaluate critically the research findings of others; use of research methods to improve practice. Students are required to participate in a research study. Prereq: ENGL 110, SOWK 102. SOWK majors only.

SOWK 350: 3 s.h.**Encounters in Human Diversity (D, P)**

An upper-level, multicultural, interdisciplinary, interactive course designed to enhance students' knowledge, skills and values relative to working with people in professional situations within a diversity-embracing atmosphere. Focuses on the various differences in communication styles brought about by gender and culture. Designed for students whose anticipated careers are primarily oriented to direct work with people. Prereq: COMM 100, ENGL 110 and junior status.

SOWK 350H: 3 s.h.**H:Enc in Human Diversity (D, P)****SOWK 379: 3 s.h.****Experimental**

Experimental

SOWK 400: 3-12 s.h.**Co-Op Ed Experience in Sowk**

Co-Op Ed Experience in Sowk

SOWK 401: 6 s.h.**Field Instruction 1**

Supervised placement in social service agencies for 450 hours of social work practice. Malpractice liability insurance required. Prereq: 24 credit hours of social work professional courses. Prereq: C or higher in SOWK 403. Coreq: SOWK 431. SOWK majors only

SOWK 401H: 6 s.h.**Hon: Field Instruction****SOWK 402: 6 s.h.****Field Instruction 2**

Supervised placement in social service agencies for 450 hours of social work practice. Malpractice liability insurance required. Prereq: 24 credit hours of social work professional courses. Prereq: C or higher in SOWK 403. Coreq: SOWK 431. SOWK majors only

SOWK 403: 3 s.h.**Social Work Practice 3**

Theoretical aspects of the skills, knowledge and values in social work practice at the macro level involving organizations and communities. Integration of abstract knowledge with concrete experience in the field. Prereq: C or higher in SOWK 302. SOWK majors only.

SOWK 405: 3 s.h.**Human Behvr and Social Envrn 2**

The second of two courses in human behavior and the social environment, emphasizing 1) the interaction of social and economic forces with individuals and social systems; 2) traditional and alternative theories about systems as they interact with people, promoting and impeding health, welfare and well-being, in the context of human culture and diversity; and 3) knowledge about opportunity structures and how they promote and deter human development and meeting needs. Prereq: C or higher in SOWK 203. SOWK majors only.

SOWK 430: 3 s.h.**Social Work Research (W)**

Emphasis on the scientific method in development of beginning evaluative skills that contribute to practice competence. Knowledge to evaluate critically the research findings of others; use of research methods to improve practice. Students are required to participate in a research study. Prereq: ENGL 110, SOWK 102, 322. Coreq: SOWK 302. SOWK majors only.

SOWK 431: 3 s.h.**Social Work Statistics (W)**

Social work research skills values and knowledge. Research design, statistical usage and data analysis in social work practice and research. Students develop a research proposal. Prereq: SOWK 430 and ENGL 110 and MATH 100 or Gen Ed MATH. SOWK majors only.

SOWK 475: 1-6 s.h.**Special Topics in Social Work**

Advanced study of a social work practice issue. The course may be taken for credit more than one semester as topics vary. Topics may include youth violence, human trafficking, poverty and homelessness, immigration and refugee care, military social work, and rural social work issues. Offered annually with different topics.

SOWK 479: 3 s.h.**Experimental**

Experimental Course Number. Content Varies.

SOWK 489: 1-4 s.h.**Honors Course**

For the definition of honors courses/thesis and eligibility, refer to the Special Academic Opportunities section of this catalog.

SOWK 498: 1-3 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

SOWK 499: 1-4 s.h.**Departmental Honors**

For the definition of honors courses/thesis and eligibility, refer to the Special Academic Opportunities section of this catalog.

SOWK 500: 3-12 s.h.**Co-Op Ed Experience in Sowk**

Co-Op Ed Experience in Sowk

Gerontology Minor

Millersville University has an interdisciplinary minor in gerontology. The program's objectives include increasing knowledge, examining values and improving skills to help students with their own aging, to live with aging people and to prepare them for careers helping the elderly. The program is also designed to improve the understanding and competence of students already working within this specialized area. Students must complete 18 credits to complete the minor.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Gerontology

Code	Title	Hours
GERT 100	Introduction to Gerontology	3
SOWK 306	Social Work and Aging	3
SOWK 315	Grief and Bereavement	3
SOWK 307	Social Work and Health Care	3
SOCY 210	Sociology of the Family	3

Electives - Choose 1 of the following:		3
NURS 316	Women, Health, and Health Care	
PSYC 229	The Adult Years	
WSSD 395	Leisure Activities for the Aged	
PHIL 280	Thanatopsis: Viewing Death	
A topics course approved by the Program Coordinator may be used as an elective.		
Total Hours		18

After successful completion of the requirements in the gerontology minor, students will:

1. Have the knowledge and skills required for effective and ethical work with the aging population.
2. Understand the aging process, including multiple dimensions within multiple contexts.
3. Be prepared for employment in professions dealing with aging or aging-related issues.
4. Be equipped to assume leadership and advocacy roles, in diverse settings, that will serve the aging population.

Social Justice Minor

Social justice is the core for all social work practice. The primary goals for the minor in social justice are to enhance sensitivity to vulnerable and at-risk populations, provide opportunity for critical review of social policies and the allocation of societal resources, and stimulate interest in advocacy and planned social change. This minor is intended to provide students with the knowledge and skills necessary to advocate from a social, economic and environmental justice framework.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

After successful completion of the requirements in the social justice minor, students will be able to:

1. Identify and apply core ethical values and principles utilized when advocating for social justice and human rights.
2. Understand how individuals, institutions and society perpetuate social, economic and environmental injustice and learn how to respond to promote positive social change.
3. Identify ways to advocate to promote positive social change.

Social Work, B.A.

A degree in Social Work from Millersville University educates students to be competent, effective social work professionals who embrace

core values of the profession, enhance human and community well-being, and promote social and economic justice through generalist social work practice. Students are afforded a learning environment that prepares them to work in an increasingly diverse society and to meet contemporary social, cultural, economic, political and global challenges.

Social work is a profession for those with a strong desire to help improve people's lives. *Social workers* assist people by helping them cope with and solve issues in their everyday lives, such as family and personal problems and dealing with relationships. Some social workers help clients who face a disability, life-threatening disease, social problems, such as inadequate housing, unemployment, or substance abuse. Social workers also assist families that have serious domestic conflicts, sometimes involving child or spousal abuse. Additionally, they may conduct research, advocate for improved services, or become involved in planning or policy development. Many social workers specialize in serving a particular population or working in a specific setting. In all settings, these workers may also be called *licensed clinical social workers*, if they hold the appropriate State mandated license.

Major in Social Work (BA)

Code	Title	Hours
A grade of C or better is required in all SOWK classes for a major in Social Work.		
REQUIRED SOCIAL WORK COURSES (C OR BETTER)		24
SOWK 102	Modern Social Welfare Dilemmas	
SOWK 201	Social Welfare Policy and Economics	
SOWK 203	Human Behavior and the Social Environment 1	
SOWK 303	Social Welfare and the Law	
SOWK 322	Evidence-Informed Lit SOWK (formerly Writing for SOWK Pract)	
SOWK 323	Human Behavior and the Social Environment 2	
SOWK 350	Encounters in Human Diversity	
SOWK 430	Social Work Research	
PRACTICE I, II and III (C OR BETTER)		9
SOWK 301, 302 and 403 must be taken in sequence after pre-requisites have been met.		
SOWK 301	Social Work Practice 1	
SOWK 302	Social Work Practice 2	
SOWK 403	Social Work Practice 3	
SENIOR BLOCK (C OR BETTER)		15
SOWK 401, 402 and 431 are co-requisite courses (taken together in the same term).		
SOWK 401	Field Instruction 1	
SOWK 402	Field Instruction 2	
SOWK 431	Social Work Statistics	
SOCIAL WORK ELECTIVES - Choose 6 hours from:		6
SOWK 304	Sowk, Corrections & Alt Trmnt	
SOWK 305	Social Work and Child Welfare	
SOWK 306	Social Work and Aging	
SOWK 307	Social Work and Health Care	
SOWK 308	Social Work & Substance Use	
SOWK 309	SOWK Behavior & Emotion Health	
SOWK 312	SOWK & Wmn: Strgth, Need & Opp	
SOWK 313	Family Violence	
SOWK 314	Global Well Being	

SOWK 315	Grief and Bereavement	
SOWK 316	Mediation	
SOWK 317	Perspectives on Poverty in the United States	
SOWK 379	Experimental	
SOWK 475	Special Topics in Social Work	
SOWK 479	Experimental	
Any GERT course(s)		
SOWK 313, 314 or 317 selected as an elective, will also fulfill the Perspectives requirement in Gen Ed Connections Explorations.		
Total Hours		54

Req Related for Social Work

Code	Title	Hours
Required Related Credits		
true		
BIOL 204	Human Biology	3
Intro to Am. Govt or State Local Govt - Choose 1 of the following:		
GOVT 111	Introduction to American Government	3
GOVT 112	Introduction to State and Local Government	
PSYC 100	General Psychology	3
Sociology Course - Choose 1 of the following:		
SOCY 101	Introduction to Sociology	3
SOCY 210	Sociology of the Family	
SOCY 211	Social Problems	
Total Hours		12

Special Education

Millersville University's PK-12 Special Education is taught by knowledgeable faculty with extensive expertise in the range of exceptionalities and ages.

PK-12 schools nationwide experience an ongoing need for qualified special educators. Students enrolled in Millersville University's PK-12 Special Education program will acquire the skills to fulfill and thoroughly address the needs of students with disabilities in multiple settings.

This program also offers unique educational experiences beyond the classroom including internships with local organizations and extensive and diverse field study opportunities.

Graduates receive their Bachelor of Science in Education (B.S.E.) and are eligible for Pennsylvania teaching certification in Special Education, Grades PK-12.

Millersville University is accredited by the Middle States Association of Colleges and Schools and approved by the American Association of University Women. The Elementary and Early Childhood programs have been accredited by the Council for the Accreditation of Educator Preparation (CAEP).

WHAT WILL YOU LEARN?

Millersville University's experienced professors create an inclusive learning environment that models best practices for teaching through

respect, collaboration, mutuality and the realization of each individual gift.

The PK-12 Special Education Certification program will equip you with the knowledge and skills to support students with varying strengths, needs, and disabilities from Pre-K to 12th grade.

All MU education programs involve a Foundations Block which explores the structure and function of contemporary public schools and recent and historical themes in the psychology of teaching and learning. Professional Blocks which focus on instructional technology and positive learning environments, and a semester of student teaching.

As a special education major, you will progress through Professional Blocks in Early Childhood or Secondary Education in addition to Professional Blocks in Special Education. You will also participate in two student teaching experiences at the elementary and secondary levels to direct your career aspirations after graduation.

Career Opportunities:

- Special Education Teacher
- Special Education Advocate
- Special Education Consultant
- Establish a foundation for focused Masters studies in related areas
- Early Childhood Education Teacher
- Secondary Education Teacher

The Programs

- Special Education, BS.Ed. (p. 223)

The Faculty

Faculty File needs to be updated with Special Education Department faculty per newly created department.

The Courses

SPED 001: 15 s.h.

SPED Professional Bloc 2

SPED Professional Bloc 2

SPED 101: 3 s.h.

Orientation to Special Educ

This introductory course is designed to prepare future special educators with the knowledge base for the identification, placement and instruction of learners with disabilities who are eligible to receive special education services across the continuum of educational environments. Included are historical considerations, educational and developmental needs of individuals with disabilities, special education programs, services, resources, and materials. In addition, practical exposure to individuals with disabilities will be emphasized.

SPED 179: 3 s.h.

Experimental

Experimental

SPED 237: 3 s.h.

Applied Foundations of Contemporary Special Education

This course identifies the complex sociocultural history that has brought us to where we are in special education practice today. It presents the contemporary and historical influences of the American school system and how special education is integrated into the modern classroom. The overrepresentation of economically disadvantaged, and culturally and linguistically diverse populations in special education is explored through careful consideration of cultural collaboration, current sociological variables and analysis of causes and prevention strategies. Individual learning differences and the development of academic and functional performance needs of students with disabilities are considered historically, legally, educationally, culturally and socially. Prereq: requires submission of satisfactory FBI, Act 34/151 clearances. Offered in fall, spring. Coreq: must be taken simultaneously with EDFN 211, 241, ERCH 225.

SPED 279: 3 s.h.

Experimental

Experimental

SPED 300: 3-12 s.h.

Co-Op Ed Experience in Sped

Co-Op Ed Experience in Sped

SPED 311: 3 s.h.

Assessment for Designing & Implementing Instruction (W)

This course enables teacher candidates to develop competencies for assessing students in an inclusive classroom setting, design instruction and make instructional decisions to enhance students' learning. Teacher candidates learn how to assess, analyze and interpret data from formal (standardized) and informal (traditional and alternative) testing sources and measurement. Teacher candidates learn how to interpret reports as relevant to students from diverse learning backgrounds and use these interpretive results along with behavioral observation, task analysis and other types of measurement to design instruction. Offered in fall, spring, summer. Prereq: Act 34, 151, 114 clearances and admission to Advanced Professional Studies.

SPED 311H: 3 s.h.

Hon: Design/Implement Instruc (W)

SPED 312: 3 s.h.

Disabl in Inclusive Settings

Prepares educators to effectively teach children with disabilities in inclusive classrooms by incorporating theory, identification, services, instruction and legal aspects of special education. Course participants will learn to plan, adapt and implement effective instruction and assessment to facilitate academic achievement for learners with mild and moderate disabilities in an inclusive setting. Offered in fall, spring. Prereq: ERCH 110 and Foundations Bloc 1 (EDFN 211, 241, EDUC 220). Course may be taken as a corequisite with Foundations Bloc 1.

SPED 321: 3 s.h.**Serving Individuals in Inclusive Settings (W)**

This course prepares teacher candidates to effectively teach students with severe and multiple disabilities within an inclusive educational system. By incorporating theory with aspects for identification, specialized support services, instruction and relevant special education law, teacher candidates become knowledgeable of their responsibilities as teachers of students with severe and multiple disabilities. Teacher candidates learn to differentiate and individualize instruction for the developmental and chronological requirements of their students. Teacher candidates become practiced in referencing alternate learning standards and general education curricula to facilitate the achievement of their students with severe and multiple disabilities in a variety of learning environments. Offered in spring. Prereq: ENGL 110; Act 34, 151, 114 clearances and admission to Advanced Professional Studies (APS). Coreq: ERCH 421, SPED 341.

SPED 328: 3 s.h.**Assessment in Special Educatn**

The administration, scoring and interpretation of assessment devices typically used in psychometric evaluations are stressed. Critical evaluation of such devices in terms of reliability, validity and norming groups is also developed. The integration of the interpretive results of psychometric evaluation with behavioral observation, task analysis and other assessments developed in prerequisite courses is demonstrated. Offered in fall, spring.

SPED 330: 3 s.h.**Discrimination and Oppression of People with Disabilities (D, P)**

Examines social discrimination through consideration of the policies and practices of societies. Creates an understanding of the social, political and cultural, rather than the physical or psychological, determinants of the experience of disability. Disentangles impairments from the myths, ideology and stigma that influence social interaction and social policy. Through course content and activities, students will challenge the idea that the economic and social statuses and the assigned roles of people with disabilities are the inevitable outcomes of their condition. Offered in fall, spring, summer. Prereq: COMM 100, ENGL 110 and junior status.

SPED 330H: 3 s.h.**H:Discrim/Oppress People/Disab (D, P)****SPED 331: 3 s.h.****Positive Learning Environments for all Students**

Students will develop the ability to effectively analyze and design inclusive educational environments to optimize the achievement of every student, and will receive the knowledge and skills to modify their teaching methods to motivate and support positive social skills in diverse students. Through the use of appropriate assessments and data collection techniques for individual student behaviors, students will develop the ability to conduct functional behavior assessments and apply behavior-intervention plans and positive techniques as needed using the Response to Intervention framework. Offered in fall, spring. Required submission of satisfactory FBI, Act 34/151 clearances; admission to Advanced Professional Studies (APS).

SPED 331H: 3 s.h.**Hon: Positive Lrng Env for All****SPED 337H: 3 s.h.****Hon: Gender and the Law (G3)****SPED 341: 3 s.h.****Early Intervention to Kindergarten**

This course examines the implications of federal mandates for providing educational and supportive services for infants/toddlers/preschoolers with disabilities and their families. The teacher candidates gain knowledge in interpreting data from formal and informal sources to be utilized in developing Individualized Family Service Plans (IFSP). The teacher candidates use case study and field experience data to recommend appropriate school-based programs for young children with disabilities. They also implement effective teaching strategies to meet the family, academic, social, emotional and behavioral needs of young children with disabilities in inclusionary environments. These strategies will be applied in field placements during the semester. Offered in spring. Prereq: EDFN 211, 241, ERCH 225 or EDUC 220; SPED 237; Act 34, 151, 114 clearances and admission to Advanced Professional Studies (APS). Coreq: ERCH 421, SPED 321.

SPED 346: 3 s.h.**Secondary Students w/Disabilities in Inclusive Settings**

This course is designated to prepare secondary education majors to effectively teach students with disabilities in inclusive classrooms. Participants will learn legal mandates, secondary general educators' role in the special education process, and the academic and social implications of inclusion. Participants also will learn to facilitate academic achievement for students with mild and moderate disabilities in inclusive secondary education by planning, adapting and implementing effective instruction. Offered in fall, spring. Prereq: required submission of satisfactory FBI, Act 34/151 clearances; EDFN 211, 241. Cross-listed with SPED 546, credit may not be received for both.

SPED 351: 3 s.h.**Managing Challenging Behaviors**

Provides various strategies to support students with challenging behaviors. Candidates will conduct Functional Behavior Assessment and prepare Behavior Intervention Plan focusing on decrease negative behaviors while increasing positive behaviors. Candidates will develop their ability to effectively analyze behaviors and design inclusive educational and community environments to optimize the achievement of every student. Candidates will demonstrate the knowledge and skills to modify teaching methods and learning environments to promote positive social skills in students with disabilities. Admission to Advanced Professional Studies required.

SPED 361: 3 s.h.**Formal Assessment for Students with Disabilities**

Designed to prepare Special Education teacher candidates to effectively develop competencies for assessing PK-12 students with disabilities according to IDEA (Individuals with Disabilities Education Act). Teacher candidates will acquire knowledge for administration, scoring, and interpretation of formal assessment devices typically used in educational evaluations. Furthermore, teacher candidates will learn how to properly select formal assessment tools in terms of reliability, validity and norm populations and learn about integrated systems of assessment and data collection for identification of students struggling to meet academic and behavioral expectations. Teacher candidates will learn the role of educational evaluations in developing Individual Education Programs (IEP) for students in need of support in the general education curriculum. Teacher candidates will learn professional ways to collaborate with parents and include them as equal partners in the assessment process.

SPED 400: 3-12 s.h.**Co-Op Ed Experience in Sped**

Co-Op Ed Experience in Sped

SPED 411: 3 s.h.**Assmt/Devl of Indiv Ed Prgram**

This course provides teacher candidates with the necessary skills to administer, score and interpret a range of formal and informal educational assessments typically used with students with severe and multiple disabilities. Teacher candidates develop their ability to apply variables such as reliability, validity and norm references to select appropriate assessment tools for their students and to develop informal evaluations as needed. Teacher candidates apply their knowledge of required procedures, with students' assessment results, to construct appropriate Individual Education Program, (IEP) with multidisciplinary team members and use those IEPs to plan instruction. Prereq: Act 34, 151, 114 clearances, admission to Advanced Professional Studies and Professional Bloc I courses of ERCH 421; SPED 321, 341. Coreq: SPED 441, 451, 453, 454. Offered in spring.

SPED 412: 3 s.h.**Assessmnt for Mild/Mod Disablt**

This course prepares teacher candidates to develop competencies for administration, scoring and interpretation of formal assessment devices typically used in educational evaluations. Teacher candidates acquire knowledge of the process of how to select formal assessment tools in terms of reliability, validity and norm populations, and learn about integrated systems of assessment and data collection for identification of students struggling to meet academic and behavioral expectations. Teacher candidates will learn the role of educational evaluations in developing Individual Education Programs (IEP) for students in need of support in the general education curriculum. Teacher candidates learn how to collaborate with parents and include them as equal partners in the assessment process. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies; Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand II: SPED 442, SPED 452, SPED 453, SPED 454. Offered in fall, spring.

SPED 432: 3 s.h.**Curr & Mthds Mild/Moder Disablt**

Designed to develop competencies to identify curriculum content and implement effective methodologies needed to direct the education program for students with disabilities in the secondary classroom setting. Includes approx. 150 hrs field experience. Offered in fall, spring. Prereq: Admission to APS

SPED 441: 3 s.h.**Support for Specialized Curriculum**

This course provides teacher candidates with research-based methods and special techniques to effectively instruct students with severe/profound and multiple disabilities within a variety of educational settings. Teacher candidates develop the teaching skills required to plan for and institute positive intervention strategies in relevant curricular areas, including perceptual, motor, daily living, communication, leisure and socialization. The emphasis of this course will be upon implementing the Individualized Education Programs (IEP). Focus will be upon lesson plans, task analyses and accommodating students who require extensive or pervasive instructional supports and adapting specialized curricula to meet their learning needs. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies; Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand I: SPED 411, SPED 451, SPED 453, SPED 454. Offered in spring.

SPED 441H: 3 s.h.**H: Supprt for Specialzd Curric****SPED 442: 3 s.h.****Eff Instr for Stdnts w Disablt**

This course is designed to prepare teacher candidates to provide effective instruction to children with mild disabilities. The course will focus on developing skills for high-quality instruction based on research-based practices used to design and adapt curriculum to provide high-quality, standard-based instruction for students with mild disabilities, with an emphasis on the inclusive classroom. Course participants will learn to plan, implement and assess the results of effective instruction aligned with students' academic, social, emotional and behavioral needs to facilitate academic achievement, with an emphasis in development of literacy skills for students in need of supports in general education. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies; Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand II: SPED 412, SPED 452, SPED 453, SPED 454. Offered in fall, spring.

SPED 443: 3 s.h.**Reflective Practices (D, W)**

This course prepares teacher candidates with the necessary skills to develop cultural sensitivity to work effectively with diverse families and their students with disabilities (mild/moderate disabilities). Teacher candidates explore culture and diversity as they apply to families, educators, and influences on daily activities, identity development, and systems of power and privilege in the educational system. Teacher candidates develop their ability to be culturally responsive, open, and respectful educators. Teacher candidates develop their professional dispositions consistent with family and student centered educational planning, program implementation and community collaboration centered on students with disabilities (mild/moderate; severe/multiple disabilities) and their diverse families.

SPED 443H: 3 s.h.**Hon: Reflective Practices (D, W)****SPED 444: 3 s.h.****Transition Planning and Secondary Programming for Individuals with Disabilities**

This course is intended to develop competencies for individual program planning and instructional management. It prepares students to develop strategies to deliver curriculum in inclusive environments through the Individualized Education Program (IEP). The transition components of the IEP will be emphasized to prepare secondary teachers to understand their role in developing goals, planning and selecting options for postsecondary education, employment, and independent living goals for youth with disabilities.

SPED 445: 3 s.h.**Individualized Educational Planning**

This course prepares teacher candidates will identify students' strengths, needs, preferences, and interests to incorporate into Individualized Education Programs. Teacher candidates will compile the necessary data with the intent of facilitating success in current and future experiences, planning instruction, and implementing supports focused on an inclusive lifespan perspective of students with disabilities. Teacher candidates will learn to develop effective strategies for grade to grade transition practices to support services in the least restrictive environment. Teacher candidates will develop their knowledge of the variety of appropriate K-12 educational environments and supports for students and plan for these based upon current special education laws and regulations and the most effective research-based practices. This course must be taken as a co-requisite with other Professional Bloc II courses. Prerequisite: Admission to Advanced Professional Studies Status, successful completion of Professional Block I.

SPED 451: 3 s.h.**Indiv Ed Plnng for Svr Disablt**

This course prepares teacher candidates with the skills to plan, design and deliver instruction focused on integrated life-span perspectives of students with severe and multiple disabilities. A student's success in school can be linked, at least in part, to effective grade-to-grade transition practices and strategies. Teacher candidates learn to develop strategies for vertical (sequential and occurring over time) or horizontal (occurring at the same time) transitions. Teacher candidates develop their knowledge of the variety of appropriate K-8 educational environments for their students and plan for these transitions based upon current special education laws and regulations and the most effective research-based practices. Teacher candidates identify their students' needs, preferences and interests and incorporate this information into their goals, objectives and plans. In keeping with a student's Individualized Education Program (IEP), teacher candidates compile necessary data with the intent of facilitating successful future experiences. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies and Professional Bloc I courses of ERCH 421; SPED 321, 341. Coreq: SPED 411, 441, 453, 454. Offered in spring.

SPED 451H: 3 s.h.**H:Ind Ed Plnng for Svr Disablt****SPED 452: 3 s.h.****Individualized Educ Planning**

This course prepares teacher candidates with the skills to plan, design and deliver instruction focused on integrated life-span perspectives of students with mild to moderate disabilities. There is a great deal of information indicating that a child's success in school can be linked, at least in part, to effective grade-to-grade transition practices and strategies. Teacher candidates learn to develop strategies for vertical (sequential and occurring over time) or horizontal (occurring at the same time) transitions. Teacher candidates develop their knowledge of the variety of appropriate K-8 educational environments for their students and plan for these transitions based upon current special education laws and regulations, and the most effective research-based practices. Teacher candidates conduct and use comprehensive grade-to-grade transition evaluations and learn strategies to identify their students' needs, preferences, and interests and incorporate this information into their goals, objectives and plans. In keeping with a student's Individualized Education Program (IEP), teacher candidates compile necessary data with the intent of facilitating successful future experiences. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies and Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand II: SPED 412, SPED 442, SPED 453, SPED 454. Offered in fall, spring.

SPED 453H: 3 s.h.**Hnrs: Reflective Practices (D, W)****SPED 463: 3 s.h.****EBPs for Math, Lit, Cntnt Area**

This seminar, taken in conjunction with Student Teaching, is for all teacher candidates in the PK-12 Special Education Certification program. This seminar provides teacher candidates the opportunity to refine their knowledge of evidence-based practices in literacy, mathematics, and the core content areas for students with exceptionalities in grades PK-12 (for example peer-assisted learning strategies, self-regulated strategy instruction, etc.). Teacher candidates will select, implement, and evaluate the success of evidence-based practices through the collection and analysis of student data.

SPED 479: 3 s.h.**Experimental**

Experimental

SPED 489: 1-4 s.h.**Honors Course**

For the definition of departmental honors and eligibility, refer to the Special Academic Opportunities section of this catalog.

SPED 498: 1-3 s.h.**Independent Study**

For further information, see the Special Academic Opportunities section.

SPED 499: 1-4 s.h.**Departmental Honors**

For the definition of departmental honors and eligibility, refer to the Special Academic Opportunities section of this catalog.

SPED 546: 3 s.h.**Sec Stdnts w Disab Inclu Sttgs**

This course is designed to prepare secondary education majors to effectively teach students with disabilities in inclusive classrooms. Participants will learn legal mandates, secondary general educators' role in the special education process, and the academic and social implications of inclusion. Participants also will learn to facilitate academic achievement for students with mild and moderate disabilities in inclusive secondary education by planning, adapting, and implementing effective instruction. Cross-listed with SPED 346, credit may not be received for both.

SPED 578: 3 s.h.**Special Education Law**

The purpose of the course is to learn about the legal background of special education from its historical experience through its rapid development in the 1970s and 1980s to its current and future impact. Students will become familiar and conversant in the Pennsylvania and Federal Regulations and Standards, appropriate case law, and how Section 504 of the Rehabilitation Act of 1973 impacts and interacts with special education law and the due process hearing system. Federal statutes governing special education will be reviewed. Offered periodically.

SPED 580: 3 s.h.**Diagnostic and Assessment Strategies for Students with Disabilities**

Specifically acquaints students with diagnostic and prescriptive methods for the accurate assessment of, and the systematic intervention with, learning or behavior problems of school-age students with mental/physical disabilities. Emphasis is placed on selecting and applying appropriate evaluation tools, programs, materials, techniques and psychological principles to learning for the student with disabilities. Offered in spring and summer.

SPED 586: 3 s.h.**Topics in Special Education**

Specific topics are chosen that may serve as a change agent for special education programs in which students with disabilities are the prime responsibility.

SPED 600: 3 s.h.**Orientation to Special Education**

Introductory overview of special education, primarily for individuals with no previous knowledge of the field. Emphasis is placed upon comprehension of definitions, terminology and classification systems. A general historic background for the areas of brain injured, mentally retarded, emotionally disturbed, socially maladjusted, and physical and learning disabilities are reviewed in terms of program development, laws and curriculum.

SPED 601: 3 s.h.**Psyc of Stdnts w/ Disabilities**

A survey course of physical, psychological and social aspects of individuals with disabilities. Special attention is paid to disability as a socially constructed experience for people with disabilities as it pertains to learning processes, educational systems and social roles. The historical development of education and human service programs for individuals with disabilities is given consideration. Current terminologies and trends are emphasized. Multicultural aspects are included as they pertain to special education.

SPED 611: 3 s.h.**Seminar in Learning Disabled**

Advanced study and research concerning the mind, mental processes, feelings, desires, actions, traits, attitudes and thoughts of children with neurological impairments and/or learning disabilities, as well as an investigation of major educational theories and approaches. The student will investigate the consistencies of the basic premises and issues of the field as well as establish the current state of the art. Emphasis will be on definition, identification, characteristics, education and research of students with learning disabilities. Offered in summer.

SPED 618: 3 s.h.**Advanced Topics in Early Intervention**

For practicing teachers or master-level students who will be called upon to develop, implement and evaluate early-intervention programs for students with developmental delays and students who are at risk for school delays. Includes examination of areas that interfere with normal development, assessment of the needs of young children and the design of programs to facilitate growth. Includes the importance of family involvement and evaluates instructional strategies intended to enhance the child's success. Covers skills in accordance with family-centered services and participation in interagency, collaborative efforts. - Course focuses on the role of the reading specialist as a literacy leader. Topics will include theoretical orientations, the observation and supervision of reading, principles of staff development, principles of coaching and leadership practices.

SPED 621: 3 s.h.**Multicultural Aspects**

Covers desirable changes in attitudes, perceptions, understandings and practices when working with children and youth who are educationally disadvantaged and whose disadvantage is caused by lower socioeconomic status or other demographic considerations, including race and ethnicity. Multicultural groups may include African Americans, Native Americans, Latin Americans and Appalachians. Remedial programs are evaluated and recommendations are made. Offered in spring.

SPED 642: 3 s.h.**Teaching Mild and Moderate Disabilities**

Provides education intervention and management model for the accurate assessment of, and systematic intervention with, mentally and/or physically handicapped school-age students. Emphasis is placed on selecting and applying specific evaluation tools, programs, materials, techniques and psychological principles to the learning of identified populations. Offered in summer.

SPED 651: 3 s.h.**Accomplished SPED Advocacy**

This course orientates the student with advanced opportunities, roles, and skills available to the accomplished special education teacher. Students will learn how to be effective advocates for students and their families, as well as how to develop leadership skills in the special education classroom and beyond. Emphasis will be placed on relevant professional organizations and careers that highlight special education advocacy and leadership. This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended.

SPED 652: 3 s.h.**Accomplished SPED Diversity**

Allows the student to examine and reflect upon a variety of social constructs, intercultural issues, and curriculum development through the lenses of special education history, disability studies and social justice. The implications for future research and practice will be explored in respect to the development of local, national and international policies for diverse children, adults and families impacted by disabilities. This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended.

SPED 653: 3 s.h.**Accomplished SPED Collaboration**

Designed to prepare educators to effectively collaborate and problem-solve with students, families, and other professionals. A major emphasis in this course will include co-planning, co-instruction, and co-reflection through demonstration lessons. Additional content in this course will address the legal requirements associated with referral and procedural safeguards for parents and youth with disabilities. Emphasis will be placed on consultation and communication strategies to facilitate collaboration within schools and the surrounding community. (3 credits) This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended.

SPED 654: 3 s.h.**Adv. Pedagogy Accomplished SPED**

Familiarizes experienced educators with an in-depth examination of research based pedagogical methods used to improve academic, social, behavioral, and transitional outcomes for Pre K-12 students with disabilities. Current instructional and assistive technologies will be explored. Specific topics and strategies explored in course will be aligned to the strengths and preferences of each student. Selection, implementation, and assessment of appropriate teaching strategies with an authentic audience will be expected. This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended.

SPED 665: 3 s.h.**Transition and Supportive Employment for Adults with Disabilities**

Transition planning for secondary students with disabilities, with specific emphasis on making appropriate job-placement decisions. Job categories will also be examined to assist in making meaningful matches between the worker and job. Programs that facilitate development of a congruence between job and employee are included, as well as agencies and other resources that might assist in job placement. Offered infrequently.

SPED 671: 3 s.h.**Behavior Management**

Intervention strategies for dealing with appropriate and inappropriate behaviors in individuals with disabilities. Opportunities to research and practice relevant classroom teaching and management skills, including the analysis of student behaviors, techniques for modifying targeted skill areas and methods for analyzing possible causes of behavior. Discussions of systematic procedures for evaluating the efficacy of certain management and intervention systems. Also emphasizes investigation and development of pragmatic solutions to students' current placement questions. Offered in fall.

SPED 681: 3 s.h.**Admin and Supervision of Sped**

Current issues and practices of special education curriculum and instruction, school law, budget process, staff development, teacher supervision, family collaboration and public relations are analyzed. Discussions are geared to effecting change to meet standards, student needs and best practices for students with special needs. Offered periodically.

SPED 689: 3 s.h.**Research Sem for Accomplish SPED**

Acquaints graduate students with relevant areas of needed research in the field of special education. Attention is given to discovering relevant problem areas for investigation. Historical, descriptive and experimental methods of research are covered. The value of research based teaching practices is stressed. A main purpose is to guide the student through an experience of writing a grant proposal and a literature review. Prereq: EDFN 601

SPED 690: 3,6 s.h.**Clinical Practicum**

This experience will be utilized by students who are certified in areas of education other than special education.

SPED 691: 1-3 s.h.**Independent Study in Spec Ed**

Independent Study in Special Education

SPED 693: 1-3 s.h.**Action Research**

In-depth approach to a specially and individually structured problem. Seminars to discuss recent trends and issues in special education will be included. Students may visit and become familiar with institutions, private schools and innovative public school classes for students with disabilities.

SPED 695: 1,3 s.h.**Accomplished SPED Capstone**

This course enables the student to put theory into practice as it pertains to the professional contributions of an accomplished special education teacher. In accordance with the ongoing consultation of the instructor, the student will design, implement, and reflect upon a major capstone project aligned with the objectives of the program. Capstone examples include, but are not limited to (a.) action research, (b) creation/presentation of professional development, (c.) creation/presentation of original scholarship at a professional conference, (d.) mentorship of a pre-service or new special education teacher, (e.) grant writing The course is 3 hours (pass/fail). However, if the student is unable to complete all requirements of the course during a single semester, they may re-enroll for 1 credit up to 2 additional, consecutive semesters for a total of 5 credits. This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended. Pre-requisites: Completion of all SpEd MEd coursework. Up to 6 credits (not from the Knowledge Core) may be taken concurrently.

SPED 698: 1-3 s.h.**Ind Study:**

Independent Study in Special Education.

SPED 699: 3,6 s.h.**Thesis**

An applied research project pertaining to the education of students with disabilities. Research findings must be submitted to a professional journal and papers must be orally defended to a committee.

SPED 799: 3 s.h.**Appl Supervsn: Sped**

Provides prospective supervisors with field experience and problems encountered in the schools. Emphasis on defining and identifying pupils in all areas of disability, planning and operating a comprehensive special education program, and emphasis on techniques in assisting teachers in evaluating and improving their curricula and their teaching techniques.

Special Education, BS.Ed.

Major in Special Education, BSE

Code	Title	Hours
PREREQUISITE EDUCATION COURSES (C OR BETTER)		
SPED 101	Orientation to Special Educ	3
REQUIRED EDUCATION COURSES		
EDUC 424	Diagnostic Reading Disability	3
SPED 311	Assessment for Designing & Implementing Instruction	3
SPED 331	Positive Learning Environments for all Students	3
EDUC 325	The Teaching of Literacy: Processes, Skills, & Strategies	3
EDFN 336	Assistive Technology & Online Learning	3
PROFESSIONAL BLOC I (C OR BETTER IN EACH)		
SPED 351	Managing Challenging Behaviors	3
SPED 361	Formal Assessment for Students with Disabilities	3
SPED 321	Serving Individuals in Inclusive Settings	3
SPED 341	Early Intervention to Kindergarten	3
EDUC 487	Teaching English Learners	3
PROFESSIONAL BLOC II (C OR BETTER)		
SPED 441	Support for Specialized Curriculum	3
	Effective Instruction for Students with Disabilities	3

SPED 442	Eff Instr for Stdnts w Disabil	
SPED 443	Reflective Practices	3
SPED 445	Individualized Educational Planning	3
SPED 444	Transition Planning and Secondary Programming for Individuals with Disabilities	3
Total Hours		48

Professional Education- Special Education

Code	Title	Hours
FOUNDATIONS BLOC (C OR BETTER IN EACH)		
The 'Foundations Bloc' must be completed after the 'Pre-requisite Education Courses' and before the 'Required Education Courses'.		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
ERCH 225	Foundations of Reading	3
SPED 237	Applied Foundations of Contemporary Special Education	3
STUDENT TEACHING: SPECIAL EDUCATION		
Evidence-Based Practices for Math, Literacy and Content Areas for Exceptional Learners		
SPED 463	EBPs for Math, Lit, Cntnt Area	
Elementary Student Teaching - Choose 4.5 hours from:		4.5
EDSP 461	Stu Tch: Sped, 1st	
Secondary Student Teaching - Choose 4.5 hours from:		4.5
EDSP 462	Stu Tch: Sped, 2nd	
Total Hours		24

Req Related for Special Education, BSE

Code	Title	Hours
A grade of 'C' or better is needed in each required related course for Special Education except for PSYC 100.		
ART 128	Art Integration	3
English Literature Course - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 333	African-American Literature 1	
ENGL 334	African American Literature 2	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
MATH 104	Fundamentals of Math 1	3
MATH 105	Fundamentals of Math 2	3
PSYC 100	General Psychology	3
Development of the Child Adolescent or Life Span Human Development - Choose 1 of the following:		3
PSYC 227	Development of the Child and Adolescent	
PSYC 228	Life Span Human Development	

Health, Safety Nutrition for the Developing Child		3
WELL 240	Health, Safety, Nutr for Child	
Total Hours		21

Advanced Professional Studies, BSE

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		
APS REQUIREMENTS		
English Composition - Choose 1 of the following:		3
ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211 & EDFN 241	Foundations Modern Education and Psychological Foundations of Teaching	6
48 earned (transcript) credit hours are required		

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. [Click here for the application.](#)

Total Hours

12

Wellness & Sport Sciences

The Wellness and Sport Sciences Department (WSSD) will inspire students to engage in Millersville University's EPPIIC values and make a difference in the communities where they will live and work.

The mission of WSSD is that we are dedicated to high-quality wellness instruction for all undergraduate students and the delivery of excellent academic programs for undergraduate and graduate students in the sport-related careers of Sport Administration and Management, Sports Medicine, Pre-Athletic Training, and Athletic Coaching.

The WSSD offers one degree with two options leading to the Sport Administration baccalaureate degree. The department also teaches courses for the wellness requirement, which is required for graduation of all Millersville University students. In addition, the department collaborates with other departments within the University to offer several different majors:

- MDST – Pre-Occupational Therapy (with psychology);
- Allied Health – Sports Medicine (with biology);
- Allied Health – Pre-athletic Training (with biology);
- Journalism – with a Sport Studies minor (with communication and theatre)

Moreover, the department offers a minor in athletic coaching for those wishing to develop the knowledge and skills necessary to safely coach athletes; and a minor in sport studies giving students opportunity to examine the role that sport plays in shaping culture and in preparing for sport-related careers in humanities, social and environmental sciences. Students are eligible to receive certification in the American Sport Education Program. Furthermore, the department offers an elective course which grants national certification in first aid. The department also offers a graduate program with a master's degree in sport management, with a concentration in athletic management and athletic coaching.

Students are required to pass three credits in wellness to qualify for degrees. Only WELL 175 Wellness or WELL 240 Health, Safety, Nutr for Child may be used to satisfy the general education, connections and exploration requirement.

The Programs:

- Athletic Coaching Minor (p. 228)
- Sport Administration, B.S. (p. 228)
- Sport Administration, B.S. - Sport Business Option (p. 228)
- Sport Studies Minor (p. 228)

*The Sport Administration, B.S. program (without the Sport Business Option declared) will require a student to have a minor or a second major declared for completion.

Wellness and Sport Sciences Affiliated Programs:

- Allied Health Technology, B.S. - Sports Medicine (p. 266)
- Allied Health Technology, B.S. - Pre-Athletic Training Dual-Degree Option (p. 263)

No results were found.

No results were found.

the faculty

Dupain, Mandi; Assistant Professor

College of Education and Human Services

B.A., Dominican College, 1996; M.A., Saint Mary's College, 1998; Ph.D., University of Pittsburgh, 2002

Halawa, Abdelhadi; Associate Professor

College of Education and Human Services

B.S., Hellwan University (Egypt), 1975; M.S., University of Michigan-Ann Arbor, 1984; Ph.D., Springfield College, 1988

Keefer, Daniel; Professor

College of Education and Human Services

B.S., East Stroudsburg University, 1993; M.S., University of Tennessee, 1995; Ph.D., University of North Carolina at Greensboro, 2001

Lombardi, Julie; Associate Professor

College of Education and Human Services

B.S. Trinity University, 1994; M.S., University of New Mexico, 1993; P.E.D., Indiana University, 1995

O'Connell, Colleen; Assistant Professor
College of Education and Human Services
B.A., Vassar College, 2016; M.S., Springfield College, 2020; Ph.D., Ibid., 2023

Schaeffer, Stratton; Assistant Professor
College of Education and Human Services
B.S., West Chester University, 1984; M.Ed., University of Texas-El Paso, 1991; Ph.D., Texas A&M University, 1998

Wimer, Jeffrey; Professor
College of Education and Human Services
B.S.Ed., Slippery Rock University, 1989; M.S., Ohio University, 1990; Ph.D., University of Dayton, 2000

the courses

WELL 175: 3 s.h.

Wellness

This course offers a comprehensive discussion of the dimensions of wellness including such topics as physical fitness, nutrition, psychological well-being, time- and stress-management, STI prevention, sexual violence risk reduction, active bystander interventions, addictive behaviors related to alcohol and other drugs, cultural responsiveness, as well as chronic diseases. The course includes useful and practical advice for adopting a wellness lifestyle that considers individual interests, goals, and life situations.

WELL 240: 3 s.h.

Health, Safety, Nutr for Child

This course is designed to address the essential components of children's wellness. The course will present ways to promote children's health through awareness, effective practices and knowledge of health issues; address the creation and maintenance of safe environments for young children; and meet children's essential nutritional needs through nutrition education and planning. Emphasis will be placed on preventive health practices, the promotion of lifelong physical activity, and on the collaborative effort of families and teachers in the promotion of these wellness issues in the face of current health issues for children, especially obesity. Offered in fall, spring.

WSSD 103: 3 s.h.

Foundations for Success

"Obstacles don't have to stop you. If you run into a wall, don't turn around and give up. Figure out how to climb it, go through it, or work around it." This mantra by Michael Jordan, Hall of Fame professional basketball player, serves as a foundation for success. This course explores the power of caring mentors to shape an individual's future. In this course we explore how education improves humanity. Amazing people don't just happen! Students will learn how to develop a growth mindset and through a process called critical inquiry, reflect on themselves and learn how to secure good mentors in their lives to partner in their future success. Using teaching and coaching as a framework, students will also recognize the pedagogical techniques used in their classes and how all students can best respond to those techniques to be successful in college. The course is open to all students and not intended as an introduction to a major course.

WSSD 110: 1 s.h.

Medical Terminology

The study of medical terminology introduces students to the language of medicine. Students will gain an understanding of basic elements, rules of building and analyzing medical words, and medical terms associated with the body as a whole.

WSSD 279: 1-3 s.h.

Experimental

Experimental

WSSD 300: 3-12 s.h.

Co-Op Ed Experience in Wssd

Co-Op Ed Experience in Wssd

WSSD 310: 3 s.h.

PE for Elementary Schools

Methods, materials, facilities and equipment for programs of health and physical education in elementary schools. Opportunities for observation of children at play, making equipment, program planning and teaching. Offered in fall, spring.

WSSD 311: 3 s.h.

Resp to Emergen: First Aid CPR

Preparation of students to develop skill and knowledge enabling them to administer first aid in the case of an accident or sudden illness. Certification in CPR and standard first aid according to American Red Cross standards.

WSSD 350: 3 s.h.

Sport in North America (D, W)

Examines major issues in North America sport both in the past and at the present. It emphasizes developing a historical and environmental perspective of the evolution in modern North America sports. Students will study various social and cultural issues that have significantly influenced the development of sport – race and ethnicity, nationality, occupation, gender and sexual orientation, religion, economics, education, social class, and politics. It explores the implications of the continuous evolution of sports in North American society.

WSSD 358: 3 s.h.

Sport Fundraising & Devel Prin

Introduces students to the unique nature of sport fundraising at both the professional and amateur levels. Principles and practices of fundraising and donor development specific to the sport business environment combining theory and practical advice.

WSSD 360: 3 s.h.

International Sport Management (D)

Students will be introduced to a wide range of issues concerning international sport management, such as globalized sport industry, emerging trends in international sport, governance in international sport, international sport business strategies, and frontiers in international sport management. They will examine specific issues, challenges, as well as opportunities within the domain of international sport management. The course will cover many professional sporting events in every continents and regions of the world regarding their backgrounds, the participants in terms of athletes and spectators, the governance and management of the events, and the economic impacts.

WSSD 375: 3 s.h.**Prevention and Care of Athletic Injuries**

Basics of prevention, recognition, care, assessment, treatment and rehabilitation of injuries to physically-active populations. Survey of the musculoskeletal anatomy; tissue response to injury; protective equipment; emergency procedures in sport; environmental concerns; mechanisms of sport injury; injury prevention, assessment and management; and abnormalities and disabilities as they apply to athletic participation. Prereq: WSSD 311.

WSSD 384: 3 s.h.**Contemporary Issues in Sport (W)**

Students will be introduced to a wide range of sporting issues, such as violence, cheating, doping, and corruption as well as broad themes that can be examined using sport as a lens to view society. The course will cover sport at the youth, intercollegiate, and professional levels considering how sport at these levels is differently experienced by individuals, communities, organizations, and broadly by society.

WSSD 390: 4 s.h.**Athlct Trng Tech w/ Surf Anatm**

This course introduces students to the fundamental principles and basic techniques used by Certified Athletic Trainers (ATCs). Topics will include appropriate taping, wrapping and bracing procedures commonly prescribed for athletic injuries, selected therapeutic modalities, and an understanding of basic anatomy and functions of the musculoskeletal system, including an orientation to the major anatomical landmarks and underlying body structures. Pre-Athletic Training majors only. Offered in summer.

WSSD 395: 3 s.h.**Leisure Activies for the Aged**

CR. Leisure Activities for the Aged

WSSD 400: 3-12 s.h.**Co-Op Ed Experience in Wssd**

Co-Op Ed Experience in Wssd

WSSD 410: 3 s.h.**Intl. Sport Issues & Industry (P)**

The purposes of this course are to introduce students to global sport-related issues and industries and to obtain firsthand experience in international sport events or organizations through a study abroad opportunity.

WSSD 410H: 3 s.h.**Hon: Intl. Sprt. Issues/Indust (P)****WSSD 450: 3 s.h.****Kinesiology and Phys Found of Sport**

The study of movement, specifically dealing with movement of the human body, including mechanics, laws of motion, anatomy and the detailed analysis of coaching activities. The functions of the various systems of the human body under stress of muscular activity that are basic for the development and maintenance of physical fitness and sport.

WSSD 452: 3 s.h.**Nutrition for Performance Enhancement**

This course will provide a comprehensive overview of the nutritional needs of athletes and how proper nutrition may lead to better overall personal health and performance. Course restricted to Junior/Senior status and students in the Allied Health Technology, Sport Administration, Athletic Coaching, Pre-Athletic Training and Sports Medicine majors minors or concentrations only.

WSSD 454: 3 s.h.**Leadership Development in Sports**

This course is designed for students involved in the athletic coaching minor program as well as any student who wants to learn more about leadership in sports. To be a successful coach, it is essential to understand key leadership concepts such as motivation, integrity, team building and influencing people. The program content of this class will reflect these key leadership issues as well as other areas like vision, problem solving, building effective relationships, group dynamics and diversity. In addition, all participants will complete a "Leadership Project." The "Leadership Project" will be a well-conceived vision and plan for action for the participants to implement upon completion of the class.

WSSD 479: 3 s.h.**Experimental**

Experimental

WSSD 480: 3 s.h.**Theory & Tech of Coach & Sprt**

Theory and techniques of the function, organization and administration of athletics in the total education program. Certification in Coaching Principles and Sport First Aid is available through the American Sport Education Program. Offered annually.

WSSD 482: 3 s.h.**Coaching Effectiveness**

Course introduces students to the fundamental principles and basic techniques used by athletic coaches. Topics include skill acquisition, competitive sport strategies, practice planning and game tactics to assist athletic coaches in designing successful athletic programs.

WSSD 483: 3 s.h.**Legal Aspects of Sport**

Instruction in prevention, treatment and care of athletic injuries. Legal and moral responsibilities in supervising elementary and secondary student athletes are discussed. Certification in sport law is available through the American Sport Education Program. Offered in fall, spring.

WSSD 484: 3 s.h.**Psyc-Soc Foundation Coaching**

The psychosocial factors affecting human behavior in modern society as applied to coaching situations and the historical development of sports programs. Offered periodically.

WSSD 485: 3 s.h.**Perf Enhance:Mntl Trng in Sprt**

This course will help students understand how psychological factors affect an individual's physical performance and understand how participation in sport and exercise affects a person's psychological development, health and well-being. By the end of this course, students will view sport and physical activity as agents for personal and social change. Offered periodically. Prereq: PSYC 100 for the B.S. BIOL/PATHL; WSSD 480 for athletic coaching minor.

WSSD 486: 1-3 s.h.**Topics**

Detailed investigations of a topic of current interest. Topic to be announced each time course is offered.

WSSD 489: 1-4 s.h.**Honors Course**

WSSD 491: 3 s.h.**Exercise Physiology**

Theory and laboratory experiences relating to the mechanisms by which the body adapts physiologically to selected conditions of muscular performance within the context of physical activity and sports. Laboratory experiments will include circulatory and respiratory response to exercise, respiratory metabolic measurements, identification of the ventilatory threshold, assessment of maximal oxygen uptake, energy cost of physical activity and assessment of body composition.

WSSD 492: 1-3 s.h.**Seminar in Sport Science**

Group discussions. General theme to be determined by professor. Prereq: senior standing and 15 s.h. of WSSD courses.

WSSD 498: 1-3 s.h.**Ind Sty:****WSSD 499: 1-4 s.h.****Dept Hhrs:****WSSD 500: 3-12 s.h.****Co-Op Ed Experience in Wssd**

Co-Op Ed Experience in Wssd

Athletic Coaching Minor

A minor in Athletic Coaching equips students with the principles of coaching, behavior, teaching, physical training and management, which are the essentials to becoming a successful coach. The goal of this program is to train students to be effective teachers and trainers while simultaneously enhancing communication and motivational skills and improving team dynamics and risk management skills.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Athletic Coaching

Code	Title	Hours
WSSD 311	Resp to Emergen: First Aid CPR	3
Kinesiological Physiological Foundation of Sport		3
WSSD 450	Kinesiology and Phys Found of Sport	
Theory/Techniques of Coaching and Sport - Choose 1 of the following:		3
WSSD 480	Theory & Tech of Coach & Sprt	
WSSD 551	Coaching of Sport	
Permission is required for undergraduates to register for WSSD 551		
WSSD 483	Legal Aspects of Sport	3
Electives - Choose 2 of the following:		6-15

WSSD 300	Co-Op Ed Experience in Wssd
WSSD 350	Sport in North America
WSSD 375	Prevention and Care of Athletic Injuries
WSSD 384	Contemporary Issues in Sport
WSSD 410	Intl. Sport Issues & Industry
WSSD 452	Nutrition for Performance Enhancement
WSSD 454	Leadership Development in Sports
WSSD 482	Coaching Effectiveness
WSSD 485	Perf Enhance:Mntl Trng in Sprt
WSSD 486	Topics
WSSD 498	Ind Sty:
COMM 429	Topics in Communication (Topics: Sport Communication)

Total Hours

18-27

Sport Administration, B.S.

Millersville University's Sport Administration program prepares students to enter the sport industry's complex business background. The sport administration major equips students to interact with sport industries and various business departments within sport organizations. The B.S. in Sport Administration has two options for students to choose from based on their career goals:

1. A concentration in Sport Business or
2. No concentration combined with another university major or minor, like marketing or athletic coaching.

This page is for the major with no concentration, which must be combined with another university major or minor.

Sport Administration, B.S. - Sport Business Option

Millersville University's Sport Administration program prepares students to enter the sport industry's complex business background. The sport administration major equips students to interact with sport industries and various business departments within sport organizations. The B.S. in Sport Administration has two options for students to choose from based on their career goals:

1. A concentration in Sport Business or
2. No concentration combined with another university major or minor, like marketing or athletic coaching.

This page is for the major with the Sport Business option.

Sport Studies Minor

The minor in Sport Studies gives students the opportunity to examine the role that sport plays in shaping culture and provides information needed for sport-related careers in the humanities and the social and environmental sciences.

With the new major in Journalism, a minor in Sport Studies is necessary for the University to continue to offer students the opportunity to prepare for careers in Sport Journalism. In addition, students who graduate in a major related to a sport field of study may look to advance their degree status with entry into a respective graduate program. The Sport Studies

minor would provide the background necessary to enhance acceptance into one of these graduate programs.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

College of Science and Technology

In the College of Science and Technology excellence in teaching and learning is our highest priority.

Our departments have a long history of providing students with the depth and breadth of education needed for success in contemporary fields of science and technology. Several important points you should know about our College faculty are:

- We are experienced educators, with approximately 98 percent of the full-time faculty in the College holding doctoral degrees.
- We are active scholars who conduct research and bring our passion and knowledge into the classroom.
- We embrace the use of high-impact educational practices in the curriculum to help facilitate your education and the development of skills necessary for you to be an independent, life-long learner. Various forms of experiential learning can be found throughout the curriculum, from faculty-mentored research and internship experiences to the opportunity for students to communicate their work to members of the public as well as to the professionals within their respective disciplines.

At Millersville, we encourage our students to work TOGETHER to be STRONG, capable learners!

As you research the science and technology programs at Millersville University through our website, be sure to read the brief highlights of our departments, our student research and internship experiences, student club opportunities, as well as alumni accomplishments. After your virtual online tour, we invite you to visit our campus in person, to meet our faculty and students, see our modern facilities, and learn more about our exceptional programs.

SCIENCE AND TECHNOLOGY FACILITIES

The Millersville University Argires Science Complex includes the 88,000-square-foot Caputo Hall (constructed in 1999), the 55,000-square-foot Roddy Hall (renovated in 2001), Brossman Hall and Nichols House. The complex includes 42 teaching laboratories, 39 individual student research laboratories, specialized support laboratories, 11 classrooms, four lecture halls, a student study lounge, a student café and lounge, seminar and conference rooms, and faculty offices. Classrooms are all outfitted with multimedia technology. The Department of Computer Science has two computer teaching laboratories: the human-computer interaction

laboratory and the graphics, virtual reality and haptics laboratory. This is one of the finest science facilities in the region; it houses programs in biology, chemistry, computer science, earth sciences, physics and nursing.

Wickersham Hall, home of the Department of Mathematics, houses departmental and faculty offices, as well as a mathematics computer laboratory with 36 networked PCs, each loaded with an array of mathematical software, including the Mathematica computer algebra system and the Minitab and SAS statistical software packages. Wickersham also has student study areas, a conference room, dedicated space for mathematics tutoring and eight classrooms. It was completely renovated in 2006.

Facilities for the Department of Geography, housed in McComsey Hall, include the Environmental Geography Lab and the Geo-Graphics Lab. The Environmental Geography Lab was recently completed and is the primary classroom for staging laboratory and field exercises in a variety of environmental and physical geography courses. Additionally, the facility is utilized by faculty and students as they conduct independent research projects. The Geo-Graphics Lab is the teaching classroom for GIS-based courses. The Geo-Graphics Lab is also the common study and workspace for students in all geography courses and for scheduled group tutoring. The Geo-Graphics Lab houses approximately 20 PC work stations, a large-format plotter, and color and B&W printers. Instruction in all GIS-based courses utilizes the latest software, ArcGIS and ArcGIS Pro.

Osburn Hall is a 70,000-square-foot facility designed exclusively to house programs offered by the Department of Applied Engineering, Safety & Technology at Millersville. Osburn Hall provides laboratories, classrooms, offices, research areas and other spaces that support programs in applied engineering, engineering technologies, occupational safety and environmental health, technology and engineering education, and integrative STEM education.

The lower level of Osburn Hall includes an electronics lab; an energy, power & transportation lab; and an automation and robotics lab. The main floor includes our production laboratories (manufacturing & construction), along with an innovation lab, an integrative STEM laboratory for studying technology & engineering education at the elementary level, an administrative office complex, and a 60 seat multipurpose room. The upper level of Osburn hall is dedicated to graphic communications and packaging, drafting and design, and occupational safety and environmental health (OSEH). It includes an advanced CADD lab with a rapid prototyping area, an additional CADD lab, a desktop publishing laboratory, a graphics lab a CNC packaging lab, and a series of laboratories associated with the OSEH program, including fire science, confined space, safety engineering and industrial hygiene.

Millersville University has an extensive inventory of modern instrumentation that students use in classroom work and for independent study and research. Included are four large environmental chambers, autoclaves, optical microscopes, an atomic force microscope, an optical polarizing microscope, a scanning electron microscope, several types of spectrophotometers (FT infrared, visible-ultraviolet, 400 MHz FT nuclear magnetic resonance, and atomic adsorption), a gas chromatograph/mass spectrometer, a Raman spectrometer, a scintillation counter, phase contrast microscopes, optical bench components, a vibration-isolating table for holography and optical interferometry, a cryogenics unit, an excimer laser, an X-ray spectrometer, a cosmic ray muon detector, electrophoresis equipment, thermocyclers, ultramicrotomes, high-speed and tabletop centrifuges and microfuges, laminar flow hoods, CO₂ incubators for tissue culture, ultralow freezers, an ultracentrifuge,

several gas chromatographs, an electrochemical oxygen analyzer, an auto-analyzer, a high-vacuum system, equipment for microwave behavior study, and hardware/software for data capture. Field equipment includes dissolved oxygen probes, flow meters, a backpack electroshocker, PIT tagging equipment, active infrared monitors, a fluorometer, digital cameras, video cameras, turbidity meters, a microbalance and extensive air-sampling equipment. Additional science facilities include botanical glasshouses, a limnological research pond, the Keever ecological study area, several microcomputer-based laboratories, photographic darkrooms, and cold rooms. There are museum reference collections of mammals, birds, fishes, insects and other invertebrates, and modern animal-care facilities, including special aquatic "wet" rooms for maintenance of animals and research. There is an extensive botanical collection.

Millersville University meteorology has assembled a suite of instruments and associated equipment in support of boundary layer (BL) and atmospheric chemistry research and education. The BL component of this facility, referred to as the Millersville University Atmospheric Boundary Layer (MABL) facility, is mobile and has been deployed for several field projects from Philadelphia to California. MABL consists of the following: Rawinsonde and Tethered Balloon Sounding systems; Scintec MFAS Acoustic Sodar with radio acoustic sounder; Sigma Space micropulse LiDAR with cross-polarization; a 10-meter flux tower; trace gas analyzers and particle-scattering instruments; and trailer. Millersville also has its own Weather Research and Forecasting (WRF) Modeling System that is used for operational forecasting and in support of the observational studies and throughputs over 100 Gb per day of satellite, radar, model, upper air, and surface data and data products. Millersville meteorology supports a modern weather center, complete with an electronic map wall and streaming video production.

The geology program has a license for RockWorks software. Geophysical equipment includes a proton precession magnetometer, an Earth resistivity meter and a stacking seismograph with multiple geophones. The program has a sand-tank groundwater flow model and GMS-MODFLOW numerical groundwater modeling. The program also maintains a broadband seismograph that is part of the Lamont-Doherty Earth Observatory's Cooperative Seismic Network. The Earth Surfaces Processes Laboratory maintains equipment needed for preparing rock and soil samples for chemical and mineralogical analyses. A full suite of field water-sampling equipment is available for studies involving the chemistry and sediment of surface water. This includes handheld pH and conductivity meters. A total surveying station is available for topographic studies requiring accurate determination of elevation and distance, such as is used in hydrologic and geophysical studies and for LiDAR-derived elevation validation.

The ocean science and coastal studies program maintains a dedicated remote sensing laboratory equipped with ENVI/IDL software and state-of-the-art LiDAR processing hardware and software, including Terrasolid, LP360, Global Mapper, LasTools and Microstation. The program also maintains two CTDs, including a Seabird SBE 25 equipped with LiCor light sensors, a backscattering sensor, a YSI oxygen sensor, a fluorometer, an acoustic current meter and a newly acquired portable weather station. Millersville University is a senior full member of the Chincoteague Bay Field Station (CBFS) at the Marine Science Center at Wallops Island, Virginia, with full access to facilities, including two monitor boats, the R.V. Flatfish and R.V. Mollusk. Both are approximately 45 feet in length and are used primarily in the tidal creeks and backbay areas for trawling and sampling. The R.V. Phillip N. Parker is a 47-foot crew vessel used mostly for cruises beyond the inlet and up to 25 miles offshore. CBFS also maintains a fleet of kayaks that allow access to cypress swamps,

shallow tidal creeks and flats, and other areas where our motorized vessels cannot go.

The department also maintains two rotating tables to conduct experiments in geophysical fluid dynamics for teaching and research, a hydrogen-alpha solar telescope, a National Acid Deposition Program sampling site off campus, and a Geo-Graphics Lab running ARCView, ARCGIS (3-D Analyst, Spatial Analyst, Geostatistical) and Watershed Modeling System.

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Applied Engineering, Safety & Technology

The Department of Applied Engineering, Safety & Technology (AEST) offers nationally accredited programs of study leading to an A.T. in applied engineering and technology or a B.S. in applied engineering and technology management, a B.S. in occupational safety and environmental health, a B.S. in automation & intelligent robotics, a B.S. in manufacturing engineering technology, and a B.S.Ed. in Technology Education. Minors are offered in applied engineering and technology, and occupational

safety and environmental health. A post-baccalaureate technology education teacher certification program is also offered.

Students may participate in the activities of the Technology & Engineering Education Collegiate Association; Association of Technology, Management and Applied Engineering (Robotics Club); Society of Manufacturing Engineers; American Society of Safety Engineers; Submersible Research Team; Construction Club and Marauder Graphics Club. An invitation to join Epsilon Pi Tau, the international honor society for professions in technology, may also be extended to department majors who excel.

Qualified department majors pursuing a bachelor's degree may earn departmental honors by proposing, conducting and defending thesis research. Eligibility for graduation with AEST departmental honors includes having a minimum CGPA of 3.0 overall, with 3.35 in the major, and a grade of B or higher on an honors thesis. Contact the department chairperson for guidelines and an enrollment application to participate in the department's honors program.

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the faculty

Bowers, Betty-Jo; Associate Professor

College of Science and Technology

B.S., The Pennsylvania State University, 1995; M.B.A., Ibid., 1998; Ph.D., Alvernia University, 2016

Brusic, Sharon; Professor

College of Science and Technology

B.S., Illinois State University, 1981; M.S., Eastern Illinois University, 1982; Ed.D., Virginia Polytechnic Institute and State University, 1991

English, Cindy; Assistant Professor

College of Science and Technology

B.S., Bemidji State University, 1988; B.S., Pennsylvania College of Technology, 1988, M.F.A., Marywood University, 1999

Haughery, John; Assistant Professor

College of Science and Technology

B.S., Millersville University, 2006; M.S., Morehead State University, 2014; Ph.D., Iowa State University, 2017

Johnson, Alex; Associate Professor

College of Science and Technology

B.S., University of North Dakota, 2000; M.S., Ibid., 2001; Ph.D., Ibid., 2010

Khalighi, Mehdi; Associate Professor

College of Science and Technology

B.S., Iran University of Science and Technology (Tehran); M.S., University of Utah, 1994; Ph.D., Ibid., 2001

Litowitz, Leonard; Professor

College of Science and Technology

B.S., Montclair State College, 1982; M.Ed., Bowling Green State University, 1983; Ed.D., University of Minnesota, 1986

Ogutu, Jack; Professor

College of Science and Technology

B.S., University of Nairobi (Kenya), 2004; M.S., Auburn University, 2011; Ph.D., Ibid., 2013

Painter, Donna; Associate Professor

College of Science and Technology

B.S., California University of Pennsylvania, 1988; M.Ed., Seton Hall University, 2005

Snyder, Mark; Professor

College of Science and Technology

B.S.Ed., Millersville University, 1984; M.A., Eastern Michigan University, 1985; Ed.D., Virginia Polytechnic Institute and State University, 1992

Warner, Scott; Professor

College of Science and Technology

B.S., Millersville University, 1985; M.A., Ball State University; D.Ed., West Virginia University, 2000

Wright, John; Professor

College of Science and Technology

B.S.I.T., Central Connecticut State University, 1993; M.S., Ibid., 1996; Ph.D., Iowa State University 1998

the courses

AENG 101: 3 s.h.

Introduction to Engineering (G2)

This course engages learners in using scientific and mathematical reasoning to explore and engage in engineering design, covers the fundamentals of the engineering design process, and exposes students to a wide range of career paths available to engineers, including engineering, applied engineering, and engineering technology areas. In this course, students will follow the creativity-based engineering design process through laboratory-based activities. Students will design and manufacture physical artifacts to meet a specific engineering challenge, and must defend their decisions with scientific and mathematical reasoning. This course focuses on how engineers apply their creativity, resourcefulness, mathematical, scientific and technical knowledge and skills in the creation or refinement of technological products/systems.

AENG 110: 3 s.h.

Communication and Information Systems

Communication technology to design, compose, send, receive and understand ideas and information. Emphasis on graphic and electronic media. Experiences with graphic design, graphic reproduction, desktop publishing, web-page development, photography, and digital video and audio. 2 hrs. lec., 3 hrs. lab.

AENG 120: 3 s.h.

Energy Systems

An introduction to energy and power systems. Principles of conventional and alternative energy resources and energy conservation, and electrical, fluid, and mechanical power will be studied along with environmental concerns associated with power production. 2 hours lecture, 3 hours lab.

AENG 130: 3 s.h.

Production Materials & Processes

The integration and interrelationships of materials and processes for construction and manufacturing, including the application of math and scientific principles and the technological impacts on industry and society. Requires experiences in materials processing and production tooling. 2 hrs. lec., 3 hrs lab.

AENG 140: 3 s.h.

Bio-related Technologies

Agriculture, medicine and other technologies in which living organisms are used to solve problems and modify products and systems. Includes problem solving, design and research activities for understanding biorelated technologies, issues and impacts. 2 hrs. lec., 3 hrs. lab. Reserved for EDTE majors.

AENG 179: 3 s.h.

Experimental

Experimental

AENG 241: 3 s.h.

Drafting Communications

Introductory technical sketching, conventional drafting and computer-aided drafting (CAD). Experiences with equipment use and care, lettering, geometric constructions, multiview projection, dimensioning, sectioning and pictorial representation. 2 hrs. lec., 3 hrs. lab.

AENG 243: 3 s.h.

Technical Sketching, Design & Rendering

Freehand sketching and basic elements of two-dimensional design and rendering. Various sketching and shading techniques are developed. Elements and principles of design, methods of designing, and evaluation and design of products are included. An application software is used to render design sketches. 2 hrs. lec., 3 hrs. lab.

AENG 251: 3 s.h.

Print Media Systems

Contemporary resources, processes and impacts of graphic reproduction. Emphasis on workflows relative to offset lithography, flexography, gravure, digital printing and screen printing. Covers graphic design; digital-image composition; digital photography; scanning; prepress, press and postpress production. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 110 or ART 244 or COMM 201 or by permission.

AENG 252: 3 s.h.

Web Publishing Systems

Planning, creating, and publishing of web media. Topics include information design, optimization of graphic and audio files, navigation systems and website technologies. Multimedia authoring software will be utilized to produce and publish websites that include digital animations and interactive forms. 2 hrs. lec., 3 hrs. lab. Prereq: AENG 110, DESN 201 or permission of instructor.

AENG 258: 3 s.h.

Package Engineering Fundamentals

An introduction to the packaging industry with an emphasis on package design and engineering. Includes a study of materials used in packaging and an introduction to the purposes and requirements of packaging. Laboratory activities include the structural design of package components using software. Prereq: AENG 251.

AENG 261: 3 s.h.

Electronic Systems

Survey of electricity and electronics, including typical direct current and alternating current applications, safe practices and technological impacts. Experiences include breadboarding, design and problem solving, use of test equipment and electronic project assembly/troubleshooting. 2 hrs. lec., 3 hrs. lab.

AENG 261H: 3 s.h.

H:Electronic Systems

AENG 262: 3 s.h.

Semiconductor Electronics

In-depth study of semiconductor theory, including diodes, transistors and silicon-controlled rectifiers. Emphasizes digital, linear and hybrid integrated circuits. Covers surface mount and emerging technologies, such as nanotechnology and biotechnology. Practical applications include prototyping circuits, design and problem solving, use of test equipment and troubleshooting. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 261 or permission of instructor.

AENG 271: 3 s.h.

Processing Nonmetallic Materials

Various nonmetallic materials, processes, products and impacts, including polymers, ceramics, wood, clay, composites and glass. Instruction and experiences provided on safety and the use of tools and machines associated with nonmetallics. Includes production activities in each of the specified nonmetallic material areas. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 130.

AENG 279: 3 s.h.

Experimental

ITEC 279

AENG 281: 3 s.h.**Processing Metallic Materials**

Examination of metallic materials, including their structures, properties and the processes used to convert them into products. Particular attention is paid to the relationship between microstructural characteristics, physical and mechanical properties and production methods. Connections are made between the properties of metals and their applications. Laboratory experiences include manual and automated production techniques, conditioning processes and characterization methods to quantify process-property-performance relationships. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 130.

AENG 300: 3-12 s.h.**Co-Op Ed Experience in AENG**

Co-Op Ed Experience in AENG

AENG 301: 3 s.h.**Technology and Humans (P)**

Analysis of the development of technology and its impact on humans and a realization of the importance of human technological behavior on the environment, social/cultural systems and the future. Students use analytical skills on a written independent research project and oral skills to present and defend positions on technological problems facing our society. Prereq: COMM 100, ENGL 110 and junior class standing.

AENG 301H: 3 s.h.**Hnrs:Technology and Humans (P)**

Hnrs:Technology and Humans

AENG 302: 3 s.h.**Futurology (P)**

A nontechnical interdisciplinary course to help students identify and analyze forces causing technological and social change. Using an understanding of the processes of technological and social change and research techniques for forecasting the future, students complete a written independent research project. Develops skills to project future technological and social developments and their impacts. Prereq: COMM 100, ENGL 110 and junior class standing.

AENG 302H: 3 s.h.**H: Futurology (P)****AENG 303: 3 s.h.****Tech Assessmnt:Amish and Others (D, P)**

A nontechnical course designed for all students to help learners analyze the use of technology, with focus on Anabaptists (particularly Amish, Old Order Mennonites and certain Brethren groups) of Lancaster County. Contrasting the way these groups assess and use technology with that of their own culture will allow students to better understand their own approach to technology. Students will develop their own technology-assessment system based on independent research. Prereq: COMM 100, ENGL 110 and junior class standing.

AENG 303H: 3 s.h.**H:Tech Assessmnt:Amish/Others (D, P)****AENG 304: 3 s.h.****Energy, Sustainability (P)**

A non-technical course for all students dealing with energy sustainability, energy resources and conservation, and the effects of energy use on our environment. This course contains up-to-date information on essential subjects such as solar energy, wind energy, nuclear energy and energy conservation. Contemporary alternatives such as photovoltaic electricity and wind power generation will be addressed. Individual transportation to field sites is required (discuss with instructor before registering for class if this is an issue). Prereq: COMM 100, ENGL 110, MATH 100 or higher and Junior class standing.

AENG 304H: 3 s.h.**Hon: Energy, Sustainability (P)****AENG 322: 3 s.h.****Transportation**

Includes the application of scientific and mathematical principles to the solution of land, air, space, and/or water transportation challenges. Incorporates the investigation of a variety of robotics and control systems with emphasis on computational thinking. 2 hours lecture, 3 hours lab. Prerequisites: ITEC 120, ITEC 261, Math 100 or higher

AENG 325: 3 s.h.**Power Conversion and Control**

Electric motors as conversion devices explored. Experiences include designing, creating and testing fluid and electrical energy conversion circuitry to perform specific control applications. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 120 or 261.

AENG 326: 3 s.h.**Fluid Power**

Investigation of scientific, mathematical and technological principles. Experiences with the design, creation, use and repair of hydraulic and pneumatic systems. A research and development activity required. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 120 or 325.

AENG 326H: 3 s.h.**Hon: Fluid Power****AENG 327: 3 s.h.****Engineering Structures**

Students will design, construct, and evaluate model structures. Emphasis is placed on the use of science, technology, engineering, and mathematical (STEM) principles as they relate to structures. 2 hours lecture, 3 hours lab. Prerequisites: ITEC 120, 130, 241, and Math 100 or higher.

AENG 331: 3 s.h.**Construction Technology 1**

Utilization of materials for the construction of residential and light commercial structures. Includes the effects of these changes on people and their environment. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 271 or permission of instructor.

AENG 332: 3 s.h.**Construction Technology 2**

Methods, materials and processes employed in heavy and industrial construction technologies. Includes field-engineering techniques, equipment, civil engineering fundamentals and use of modeling and simulation techniques. Emphasis given to construction projects such as bridges, roads, industrial and commercial buildings, utilities, tunnels and dams. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 271 or permission of instructor.

AENG 342: 3 s.h.**Computer-Aided Engineering Drawing**

Advanced study of threads, gears and standard fasteners; geometric dimensioning and tolerancing (GD&T); schematic, production and assembly drawings; and introduction to solids modeling. Builds on view orientation, projection systems and basic CAD. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 241.

AENG 344: 3 s.h.**Product Design**

An exploration of the thinking processes, problem solving strategies, documentation techniques, and making skills used by designers toward creating new products. The use of the elements and principles of design, aesthetics, ergonomics, and social/cultural considerations as tools toward designing for manufacture, designing for sustainability, and universal design are emphasized. Other topics explored include the role of human emotion toward design and design's influence on human history.

AENG 344H: 3 s.h.**Hnrs: Product Design****AENG 345: 3 s.h.****Statics/Strength of Materials**

Elementary, analytical and practical approaches to the principles and physical concepts of statics. Covers force systems; equivalent force/moment systems; distributed forces; internal forces; principles of equilibrium; application to trusses, frames and beams; stress and strain; and mechanical properties of materials. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 241 and MATH 151, 160 or 161; or permission of instructor.

AENG 346: 3 s.h.**Architectural Drawing**

Study of principles of residential design and architectural styles with an emphasis on the development of a complete set of original working and presentation drawings using computer-aided design (CAD) and Building Information Modeling (BIM). 2 hours lecture, 3 hours lab. Prerequisite: ITEC 241.

AENG 347: 3 s.h.**Engineering Visualization**

Students study the relationships of three-dimensional lines, angles, surfaces, and solids by projecting three-dimensional reality onto a two-dimensional surface such as a computer screen. The students gain the necessary tools and principles to graphically visualize, manipulate, and solve engineering and architectural design problems. Traditionally these problems were solved by doing mathematical calculations. In contrast, this class uses descriptive geometry to solve three-dimensional spatial problems graphically. The computer is used as the main drafting tool. Engineering visualization extends beyond the principles of descriptive geometry. Students use visualization techniques and spatial reasoning to solve fundamental engineering concepts and related problems, represent their design proposals, view the 3D environment from any angle using a flying camera, and support their spatial, numeric, algebraic and quantitative thinking. 2 hrs. lec., 3 hours lab. Prereq: ITEC 241.

AENG 348: 3 s.h.**Green Building and Sustainable Systems**

This course covers fundamentals of green buildings and sustainable energy technologies and their dynamic costs and benefits. Green buildings are designed and constructed to maximize the energy efficiency of the envelope and provide superior quality in the indoor environment. This course allows students to explore the integration of design principles and application of renewable energy, natural building materials, and ecological landscape into building design and community development. Pre-requisite: MATH 130 and ITEC 241

AENG 351: 3 s.h.**Digital Imaging**

Create digital images using cameras and scanners. Set up and characterize a digital workstation and produce digitally imaged products. Hands-on activities will require students to demonstrate their proficiency using contemporary hardware and software to compose, capture, convert, color and tonal correct, manipulate and print digital images and products. 2 hrs. lec., 3 hrs. lab. Offered annually.

AENG 355: 3 s.h.**Contemporary Printing**

Advanced study of today's major printing processes, especially offset and screen. Experiences include layout and design, computerized electronic composition, copy preparation, line and halftone photography, special-effects photography, exposure unit calibration, image assembly, platemaking, printing and finishing complex graphic products. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 251.

AENG 356: 3 s.h.**Desktop Publishing (W)**

Utilization of desktop microcomputer systems to design, compose and publish graphic materials. A research and development activity required. 2 hrs. lec., 3 hrs. lab. Prereq: ENGL 110.

AENG 357: 3 s.h.**Packaging Specialty Printing**

In-depth study of problems and processes related to printing and converting in package, label and specialty printing. Students study and experience package design structures, materials flexographic printing, screen container printing, converting methods and bar code applications. Current industry practices explored. 2 hrs. lec., 3 hrs. lab. Prereq: AENG 241, 251, and 258; or DESN 348.

AENG 357H: 3 s.h.**Hon: Packaging Spec Prnting****AENG 364: 3 s.h.****Digital Electronics**

Practical applications of digital logic for processing electronically encoded information. Covers numbering systems, logic design, basic gates, sequential and combination logic, and digital troubleshooting. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 262 or permission of instructor.

AENG 375: 3 s.h.**Polymer and Ceramic Technology**

Design, development and production of polymer and ceramic products. Covers contemporary pattern and molding materials along with industrial forming processes. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 271.

AENG 376: 3 s.h.**Woodworking Technology**

Use of hand tools and machine woodworking techniques to fabricate wood products. Covers technological problems and contributions of using wood in daily living. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 271.

AENG 379: 3 s.h.

Experimental
Experimental

AENG 382: 3 s.h.**Automated Manufacturing**

A comprehensive experience in the design, programming and implementation of computer-controlled manufacturing processes. Emphasis is placed on understanding machine code, utilizing computer-aided design and manufacturing (CAD/CAM) software and identifying proper process controls to increase productivity and reduce cost. Laboratory experiences develop a combination of software and hardware competencies. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 130; and ITEC 241; and ITEC 271 OR 281 OR 342; or permission of instructor.

AENG 392: 3 s.h.**Intro to Industrial Training (W)**

Techniques and procedures required to conceptualize, prepare, deliver and evaluate training programs. Includes experiences in preparing instructional media, presenting a unit of instruction and developing appropriate evaluation instruments. Prereq: ENGL 110.

AENG 400: 3-12 s.h.**Co-Op Ed Experience in AENG**

Co-Op Ed Experience in AENG

AENG 400H: 3-12 s.h.**H: Co-Op Ed Experience in AENG****AENG 425: 3 s.h.****Industrial Robotic Systems**

This course focuses on the study of industrial robotics and modern machine vision technology. Topics include the evaluation, justification, programming, safety, and integration of industrial robotic devices with machine vision systems. 2 hours lecture, 3 hours lab. Prerequisite: ITEC 325.

AENG 427: 3 s.h.**Programmable Logic Controllers**

Focus on the integration and application of the programmable logic controller (PLC). Students design, construct and troubleshoot a variety of industrial control systems utilizing programmable logic controllers, networks, human-machine interfaces, variable frequency drives, control loops and sensors. 2 hrs. lec., 3 hrs. lab. Prereq: AENG 325; and MATH 151 or 161 or permission of instructor.

AENG 433: 3 s.h.**Construction Project Management**

Methods, processes and information necessary to manage a construction project. Includes cost and risk control; developing and applying policies and procedures; subcontractor management; specifying and purchasing materials; scheduling; and contract development. Experiences include use of project-planning and cost-estimation software for development of a complete project plan. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 332 or permission of instructor.

AENG 435: 3 s.h.**Manufacturing Enterprise**

Exploration of the technological and management processes for conceptualizing and manufacturing a product. Experiences with product engineering, production engineering, manufacturing management and enterprise operations in a student-centered learning environment. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 110, 120, 130, 140, 241 and 271 or 281, and a major in technology education (TECE).

AENG 446: 3 s.h.**Advanced Applications in Drafting and Design**

Focuses on advanced techniques, applications, and field-related career interactions in drafting, design, modeling, and rendering based on industry standards and advancements. Research, development, and presentation activities, plus completion of projects are required. 2 hrs. lecture, 3 hrs. lab. Prereq: AENG (ITEC) 342.

AENG 448: 3 s.h.**Machine Tool Design**

Analysis, planning, design, construction and application of tools, methods and procedures necessary to increase manufacturing productivity. Integrated with machining and fabrication practices. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 342.

AENG 455: 3 s.h.**R&D in Graphic Communications and Packaging**

This course involves testing various components of the manufacturing processes involved in creating print and digital/web media. Typical activities will involve testing colorants (e.g., inks, toners, etc.) and substrates used in lithography, flexography, screen-printing and digital printing systems. Optimum conditions for specific printing methods will be determined through controlled testing and examination. Students may also propose to examine specific interrelationships between production procedures used in various digital media processes. The course will also cover color separation and reproduction, which includes the study of process color theory, desktop color separations and color reproduction. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 355 or permission of instructor.

AENG 457: 3 s.h.**Print Production Management & Cost Estimating**

A study of current topics and systems for setting printing production standards, cost estimating, production scheduling, job planning and the consideration of new equipment and technologies. Students will integrate the technical knowledge learned through previous graphics laboratory classes with other course work in management, marketing, science, business, etc., with a focus on how it all relates specifically to the printing production process. The course is structured to offer an overview in several areas of print production management, with emphasis on cost estimating and current printing industry topics. 2 hours lecture/3 hours lab. Prereq: ITEC 355 and MATH 130, or permission of instructor.

AENG 467: 3 s.h.**Mobile Robotics**

Study of the development of mobile robotic solutions. Emphasis is placed on the programming and interfacing of microcontrollers to control autonomous mobile robots in known environments. A research and development activity is required. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 262 or permission of instructor.

AENG 467H: 3 s.h.**Hon: Mobile Robotics****AENG 468: 3 s.h.****Control Network Integration**

This course utilizes both theory and applications related to industrial network architectures for system control and data acquisition integration. Course topics include design methodologies, installation, commissioning, troubleshooting, grounding/bonding, standards, serial, parallel, wired and wireless protocols. A research and development project is required. 2 hours lecture, 3 hours lab. Prerequisite: AENG 427; Prerequisite or Co-requisite: AENG 425.

AENG 479: 3 s.h.

Experimental

AENG 485: 3 s.h.**Adv Manufacturing Systems**

Computer-integrated manufacturing (CIM) systems, strategies and implementation across the manufacturing enterprise. Focus on the integration of systems such as design of products; computer-aided engineering (CAE); the control of quality, design and construction of production tooling, rapid prototyping, computer-aided process planning (CAPP), finite element analysis (FEA), computer-aided design (CAD), computer-aided manufacturing (CAM) and computer numerical control (CNC). Manufacturing, automation and robotics emphasized. Advanced-level production experiences with an intensive research and development component required. 2 hrs. lec., 3 hrs. lab.

AENG 489: 1-4 s.h.**Honors Course**

Preparation of honors thesis proposal. For the definition of honors course and student eligibility, refer to the departmental honors section of this catalog. EDTE, ARET, MFET, PET, AETM and OSEH majors may enroll in the Department of Applied Engineering, Safety & Technology honors program. Contact the department office for guidelines and an application.

AENG 492: 3 s.h.**Technical Entrepreneurship**

A capstone Applied Engineering & Technology Management course in which students study and apply technical, managerial, and entrepreneurial concepts to the development and operation of a student-centered venture. Students organize and operate a model enterprise to develop manufacture and market a consumer product.

AENG 494: 3 s.h.**Total Quality Management**

The history and development of quality movements; factors influencing the total quality concept; the scope of modern quality systems; management organization and strategies for quality; engineering technology for quality; and statistical tools for measurement and monitoring of quality. 2 hrs. lec., 3 hrs. lab. Prereq: MATH 130 or permission of instructor.

AENG 498: 1-4 s.h.**Independent Study**

See Independent Study section of this catalog. Written permission of faculty sponsor and department chairperson required.

AENG 499: 1-4 s.h.**Departmental Honors (W)**

Completion and defense of thesis research. See departmental honors section of this catalog. Contact the Department of Applied Engineering, Safety & Technology office for guidelines.

AENG 499H: 1-4 s.h.**Hon: Departmental Honors****AENG 500: 3-12 s.h.****Co-Op Ed Experience in AENG**

Co-Op Ed Experience in AENG

EDTE 179: 1-4 s.h.**Experimental**

Experimental

EDTE 290: 3 s.h.**Children's Engineering**

The intent of this course is to teach students about fundamentals of electricity, mechanisms, fluidics (liquids and gases under pressure), computer-control, and structures. Content will be delivered through a series of hands-on activities that will allow the students to immerse themselves in the content through problem-based learning by doing. Simple knowledge and skill building activities will lead to more complex open-ended problem solving and prototyping activities to build deeper understandings of scientific, technological, engineering, and mathematical (STEM) concepts for teachers of young children. Cross-listed with ERCH 290, students may not receive credit for both courses.

EDTE 291: 3 s.h.**Foundations of Technology & Engineering Ed**

An introduction to the social, historical and philosophical foundations of technology & engineering education, leading to contemporary programs. Provision is made for observation of classroom and laboratory practices in selected schools. Prereq: Sophomore standing. Must meet current university requirements for field experiences (e.g., current clearances, negative TB test results on file). Not offered during summer sessions. Must achieve a "C" or higher to register for professional block courses.

EDTE 391: 3 s.h.**Curr & Inst in Tech & Eng Ed (W)**

An investigation of curriculum design, instructional planning, and lesson delivery in K-12 technology and engineering education. The focus is on engaging teacher candidates in using contemporary strategies and technologies to plan, implement, and assess a standards-based curriculum that promotes students' technological literacy, creativity, engineering problem-solving, and design thinking abilities. Emphasis is placed on meeting the needs of all learners, including English language learners and students with disabilities. Field experiences are required in technology and engineering education classrooms. Prerequisites: Grade of "C" or higher in EDTE 291, EDFN 211, EDFN 241. Grade of "C" or higher in ENGL 110. Admission to advanced professional studies (APS) required. Co-requisites: EDSE 340 and SPED 346. A minimum grade of "C" must be earned in this class in order to progress to student teaching.

EDTE 461: 9 s.h.**Edte Stu Teaching**

Student teachers are assigned full-time to selected mentors in the Lancaster area. They are supervised by University faculty and gain experience in the responsibilities of the teacher. Prereq: EDTE 391 with a "C" or higher and EDTE 496. Co-requisites: EDTE 491 and EDSE 471.

EDTE 462: 4.5,6 s.h.**EDTE Stu Teaching****EDTE 490: 3 s.h.****Integrative Learning Using Experiential Strategies**

The purpose of this course is to engage students in curriculum planning, design and assessment that will enable them to identify, use, and evaluate experiential and integrative teaching-learning strategies that facilitate connections between all subjects in grades Pre-K to 6 (e.g., literacy, science, mathematics, social studies, arts, technology, physical education, engineering). Prerequisites: ERCH 110, ERCH 190, EDTE/ERCH 290, and AENG 344.

EDTE 491: 1 s.h.**Seminar in Techn & Engring Ed**

A seminar dealing with professional education issues and effective teaching and learning during the technology and engineering education student teaching experience. Emphasis on planning, teaching, managing, and assessing technology and engineering education units of instruction. Attention given to legal issues, safety, professional development, and meeting the needs of all learners in the technology and engineering education environment, including English language learners and students with disabilities. Pre-Requisites: EDTE 391 and EDTE 496; Co-Requisites: EDTE 461 and EDSE 471

EDTE 495: 3 s.h.**Integrative STEM Practicum**

This clinical practicum course provides opportunities for teacher candidates to bridge theory and practice. Students will demonstrate and apply knowledge, skills, and dispositions related to the implementation of integrative science, technology, engineering and math (STEM) education at the pre-K to grade 4 level. Emphasis is placed on the planning, development, implementation and assessment of integrative STEM instructional activities and lessons that use problem-based and experiential learning techniques targeted for Pre-K to grade 4 students. Includes field experiences. Prerequisites ERCH 110, ERCH 190, EDTE/ ERCH 290, ITEC 344, EDTE 490 or 690 or Permission of Instructor; Advanced Professional Studies (APS) status required. Cross-listed with ERCH 495, credit may not be received for both courses.

EDTE 496: 2 s.h.**Innovatn/Design Methodologies**

Technology education methodologies for instruction in advanced design and innovation. Teams of students develop solutions to technological problems. 1 hr. lec., 3 hrs. lab. Prereq: ITEC 110, 120, 130, 140, 344; MATH 130 or higher; and ENGL 312 or 316.

EDTE 498: 1-6 s.h.**Ind Stdy:**

Independent Study in Technology Education

OSEH 120: 3 s.h.**Fundamentals of Safety, Health, Environmental Issues (G3)**

Introduction to safety, health and environmental issues that impact people and workplaces. Includes the historical development of safety, the impact of accidents on society, a legislative overview and basic principles of personal risk assessment and management.

OSEH 179: 3 s.h.**Experimental**

Experimental

OSEH 220: 3 s.h.**Legal Aspects Environmental Safety**

Legal issues relative to occupational safety and environmental health. Includes federal and state legislation, resolution of legal and ethical challenges, product safety and professional liability.

OSEH 221: 3 s.h.**Industrial Fire Prevention, Protection and Control**

Basic principles, chemistry of fire, fire hazards determination, workforce notification, alarm and sprinkler systems, protective equipment, evacuation procedures and fire fighting methods.

OSEH 221H: 3 s.h.**Hon: Fire Prevention****OSEH 222: 3 s.h.****Construction Safety**

Methodology for the anticipation, recognition, evaluation and control of safety and health hazards associated with construction industries. Topics include engineering principles and risks associated with multiple types of facilities and infrastructures. Prereq: OSEH 120

OSEH 279: 3 s.h.**Experimental**

Experimental

OSEH 300: 3-12 s.h.**Co-Op Ed Experience in OSEH**

Co-Op Ed Experience in OSEH

OSEH 320: 3 s.h.**Safety Engineering Principles**

Methods for the identification and analysis of industrial hazards. Emphasis on application of basic safety engineering principles for the control of losses in an industrial environment. Prereq: OSEH 120.

OSEH 321: 4 s.h.**Environmental & Industrial Hygiene I - Chemical and Biological Hazards**

Course covers the anticipation, recognition, evaluation, and control of chemical and biological hazards in the workplace. Topics include: toxicology, gases, vapors, solvents, particulate matters, respiratory protection, fit testing, air sampling protocols and strategies, microbial and biological hazards, and government regulations. The challenging concerns of health hazards related to nano size particles in the workplace is addressed. Prereq: OSEH 120, CHEM 104, MATH 101 or Math 151 or Math 160 or Math 161, or permission of instructor.

OSEH 323: 3 s.h.**Human Factors in OSEH**

Ergonomic study of interaction between people and their work. Emphasis on the application of biological sciences to engineering principles in an effort to optimize efficiency, productivity and safety. Topics include anthropometrics, biomechanics, design principles, physiological and cognitive capabilities and task-evaluation techniques. Prereq: OSEH 120 or permission of instructor.

OSEH 333: 3 s.h.**Introduction to System Safety**

Qualitative and quantitative system safety methods used to analyze and control risk. Includes a variety of analytical engineering techniques that are applied to practical system-analysis problems. Prereq: OSEH 320 and MATH 130.

OSEH 379: 3 s.h.**Experimental**

Experimental

OSEH 400: 3-12 s.h.**Co-Op Ed Experience in OSEH**

Co-Op Ed Experience in OSEH

OSEH 410: 3 s.h.**Safety and Hygiene Management**

Principles and practices of occupational safety and environmental health management. Includes the development of safety objectives and policy, evaluation and management of risk, and program implementation and evaluation. Offered annually. Prereq: OSEH 220 and 320 or permission of instructor.

OSEH 422: 4 s.h.**Environmental & Industrial Health II - Physical Hazards**

Fundamental theory and methods used in the anticipation, recognition, evaluation and control of the physical hazards of noise, ionizing/nonionizing radiation, illumination, thermal stress, local exhaust ventilation, and dilution ventilation. Covers regulatory standards and control methods. Prereq: OSEH 120, MATH 101 or 151 or 160 or 161 and PHYS 103 or 104 or 131, or permission of instructor.

OSEH 430: 1 s.h.**Topics in Occupational Safety & Environmental Health**

A review of industry specific hazards and operations related to Occupational Safety and Environmental Health. Topics vary according to the needs and interest of students involved. The course is intended to build on basic safety management concepts and an understanding of how these concepts are applied in specific sectors. Challenges and specific regulatory requirements, which may be unique to the business sectors covered, will be included. Emphasis is placed on leadership and mentorship of OSEH students. Reserved for Senior OSEH majors or by instructor permission.

OSEH 435: 3 s.h.**Environmental Health**

Environmental health review of scientific and technical foundations, with an examination of problems, regulations and control strategies. Covers identification of pollution sources, evaluation strategies, engineering controls, federal and state regulatory and permitting processes. Emphasis is on practical information needed by environmental health professionals to resolve issues affecting industry. Prereq: OSEH 321 or ENVI 330 or permission of instructor.

OSEH 440: 6,12 s.h.**Internship**

Students work full-time for nine weeks or more under the direct supervision of an OSEH professional in industry, insurance, government agencies or other approved location. University supervision, seminars and evaluation are provided. Students experience problems, practices and principles in the management of occupational safety and/or industrial hygiene programs. To be taken twice, concurrently or consecutively, with increased work and research responsibilities. Prereq: senior OSEH majors and permission of OSEH coordinator.

OSEH 479: 1-6 s.h.**Experimental**

Experimental

OSEH 489: 1-4 s.h.**Honors Course**

Preparation of honors thesis proposal. For the definition of honors course and student eligibility, refer to the departmental honors section of this catalog. EDTE, AETM and OSEH majors may enroll in the Department of Applied Engineering, Safety & Technology honors program. Contact the department office for guidelines and an application.

OSEH 499: 1-3 s.h.**Departmental Honors**

Advanced Manufacturing Technology Minor

Manufacturing is the largest sector in Pennsylvania's economy and currently there are over 565,000 people employed in manufacturing positions throughout the Commonwealth. The Advanced Manufacturing minor provides students with significant experiences in material processing and manufacturing processes. A minor in Advanced

Manufacturing Technology gives students a technical skillset that can be highly valued in industry. Skills such as Computer Numerical Machining and Materials Science are highly sought after by many companies.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Advanced Manufacturing Technology

Code	Title	Hours
AENG 130	Production Materials & Processes	3
AENG 241	Drafting Communications	3
AENG 271	Processing Nonmetallic Materials	3
AENG 281	Processing Metallic Materials	3
Advanced Manufacturing Technology Electives - Choose 2 of the following:		6
AENG 375	Polymer and Ceramic Technology	
AENG 376	Woodworking Technology	
AENG 382	Automated Manufacturing	
Total Hours		18

Applied Engineering & Technology Management, B.S. - Advanced Manufacturing Technology Concentration

The Advanced Manufacturing concentration at Millersville University prepares students for an ever-changing workplace that is increasingly driven by advanced technology. Manufacturing is a matter of fundamental importance to the economic strength and national security of the United States. The new era of manufacturing is cleaner, more precise and more effective than ever before; and it requires highly skilled workers.

Major in Appl Engineering & Tech Mgt

Code	Title	Hours
TECHNICAL OPTION		
AENG 120	Energy Systems	3
AENG 130	Production Materials & Processes	3
AENG 241	Drafting Communications	3
AENG 271	Processing Nonmetallic Materials	3
AENG 281	Processing Metallic Materials	3
AENG 325	Power Conversion and Control	3
AENG 342	Computer-Aided Engineering Drawing	3

AENG 375	Polymer and Ceramic Technology	3
AENG 376	Woodworking Technology	3
AENG 382	Automated Manufacturing	3
AENG 425	Industrial Robotic Systems	3
AENG 448	Machine Tool Design	3

TECHNOLOGY MANAGEMENT CORE

BUAD 251	Principles of Management (C- minimum pre-req for MGMT 452)	3
MGMT 452	Operations and Supply Chain Management	3
AENG 492	Technical Entrepreneurship	3
AENG 494	Total Quality Management	3
OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3

ELECTIVE COURSES IN TECHNOLOGY MANAGEMENT

A maximum of 6 internship credits (ITEC 300, 400) may be counted for this degree.

Technology Management Electives - Choose 3 of the following: 9-27

BUAD 161	Intro to Financial Accounting	
BUAD 352	Human Resource Management	
MGMT 357	International Management	
AENG 300	Co-Op Ed Experience in AENG	
AENG 392	Intro to Industrial Training	
AENG 400	Co-Op Ed Experience in AENG	
OSEH 221	Industrial Fire Prevention, Protection and Control	
OSEH 320	Safety Engineering Principles	
OSEH 323	Human Factors in OSEH	
OSEH 333	Introduction to System Safety	
PSYC 329	Industrial Psychology	
SOCY 318	Soc Of Complex Organizations	

Total Hours 60-78

Req Related for Applied Engineering, Tech/Mgt

Code	Title	Hours
ECON 101	Principles of Macroeconomics	3
ECON 102	Principles of Microeconomics	3
MATH 130	Elements of Statistics 1	3
Calculus - Choose 1 of the following:		4
MATH 151	Calculus for Management	
MATH 160	Precalculus	
MATH 161	Calculus 1	
Directed Science - Choose 2 of the following:		6-8
CHEM 101	Chem!Better Things/Better Lvng	
CHEM 103	Gen Organic and Biochemistry 1	
CHEM 104	Gen Organic and Biochemistry 2	
PHYS 103	Elements of Physics	
PHYS 104	Applied Physics	
PHYS 131	Physics 1 with Algebra	
PHYS 132	Physics 2 with Algebra	
Can receive credit for either PHYS 103 or 104, but not both		

Total Hours 19-21

Applied Engineering & Technology Management, B.S. - Computer-Aided Drafting & Design Concentration

Millersville University's Computer-Aided Drafting and Design concentration, within Applied Engineering and Technology Management, is designed to provide students with theoretical and practical skill in drafting and design. In addition, there is work in the areas of technical freehand drawing, design methodology, design for manufacture, technical illustration and rendering using computer-aided drafting systems. All courses feature practical laboratory experiences allowing students to work with equipment, materials and processes that will lead to successful careers in the drafting/design field.

Major in Appl Engineering & Tech Mgt

Code	Title	Hours
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TECHNICAL OPTION

AENG 110	Communication and Information Systems	3
AENG 120	Energy Systems	3
AENG 130	Production Materials & Processes	3
AENG 241	Drafting Communications	3
AENG 243	Technical Sketching, Design & Rendering	3
AENG 342	Computer-Aided Engineering Drawing	3
AENG 344	Product Design	3
AENG 345	Statics/Strength of Materials	3
AENG 346	Architectural Drawing	3
AENG 347	Engineering Visualization	3
AENG 446	Advanced Applications in Drafting and Design	3
AENG 448	Machine Tool Design	3

TECHNOLOGY MANAGEMENT CORE

OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
BUAD 251	Principles of Management (C- minimum pre-req for MGMT 452)	3
MGMT 452	Operations and Supply Chain Management	3
AENG 492	Technical Entrepreneurship	3
AENG 494	Total Quality Management	3

ELECTIVE COURSES IN TECHNOLOGY MANAGEMENT

A maximum of 6 internship credits (ITEC 300, 400) may be counted for this degree.

Technology Management Electives - Choose 3 of the following: 9-27

BUAD 161	Intro to Financial Accounting	
BUAD 352	Human Resource Management	
MGMT 357	International Management	
AENG 300	Co-Op Ed Experience in AENG	
AENG 392	Intro to Industrial Training	
AENG 400	Co-Op Ed Experience in AENG	
OSEH 221	Industrial Fire Prevention, Protection and Control	
OSEH 320	Safety Engineering Principles	
OSEH 323	Human Factors in OSEH	
OSEH 333	Introduction to System Safety	
PSYC 329	Industrial Psychology	

SOCY 318	Soc Of Complex Organizations	
Total Hours		60-78

Req Related for Applied Engineering, Tech/Mgt

Code	Title	Hours
ECON 101	Principles of Macroeconomics	3
ECON 102	Principles of Microeconomics	3
MATH 130	Elements of Statistics 1	3
Calculus - Choose 1 of the following:		4
MATH 151	Calculus for Management	
MATH 160	Precalculus	
MATH 161	Calculus 1	
Directed Science - Choose 2 of the following:		6-8
CHEM 101	Chem!Better Things/Better Lvng	
CHEM 103	Gen Organic and Biochemistry 1	
CHEM 104	Gen Organic and Biochemistry 2	
PHYS 103	Elements of Physics	
PHYS 104	Applied Physics	
PHYS 131	Physics 1 with Algebra	
PHYS 132	Physics 2 with Algebra	
Can receive credit for either PHYS 103 or 104, but not both		
Total Hours		19-21

Applied Engineering & Technology Management, B.S. - Construction Management

Millersville University's Construction Management concentration, within Applied Engineering and Technology Management, helps students develop the theoretical knowledge and leadership skills to pursue rewarding career opportunities in the construction industry. This program offers special facilities for students to use during their time at Millersville, including a materials processing lab, computer-aided drafting and design programs and a research and development facility. Graduates pursue fields in careers such as a project manager or project coordinator, field engineer, a scheduling assistant, compliance assistant, cost estimator or safety coordinator.

Major in Appl Engineering & Tech Mgt

Code	Title	Hours
TECHNICAL OPTION		
AENG 120	Energy Systems	3
AENG 130	Production Materials & Processes	3
AENG 241	Drafting Communications	3
AENG 271	Processing Nonmetallic Materials	3
AENG 331	Construction Technology 1	3
AENG 332	Construction Technology 2	3
AENG 345	Statics/Strength of Materials	3
AENG 346	Architectural Drawing	3
AENG 347	Engineering Visualization	3
AENG 348	Green Building and Sustainable Systems	3
AENG 433	Construction Project Management	3
Technical Elective - Choose 1 of the following:		3

AENG 326	Fluid Power	
AENG 342	Computer-Aided Engineering Drawing	
AENG 376	Woodworking Technology	

TECHNOLOGY MANAGEMENT CORE

OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
BUAD 251	Principles of Management (C- minimum pre-req for MGMT 452)	3
MGMT 452	Operations and Supply Chain Management	3
AENG 492	Technical Entrepreneurship	3
AENG 494	Total Quality Management	3
OSEH 222	Construction Safety	3

ELECTIVE COURSES IN TECHNOLOGY MANAGEMENT

A maximum of 6 internship credits (ITEC 300, 400) may be counted for this degree.

Technology Management Electives - Choose 2 of the following:		6-24
BUAD 161	Intro to Financial Accounting	
BUAD 352	Human Resource Management	
MGMT 357	International Management	
AENG 300	Co-Op Ed Experience in AENG	
AENG 392	Intro to Industrial Training	
AENG 400	Co-Op Ed Experience in AENG	
OSEH 221	Industrial Fire Prevention, Protection and Control	
OSEH 323	Human Factors in OSEH	
OSEH 333	Introduction to System Safety	
PSYC 329	Industrial Psychology	
SOCY 318	Soc Of Complex Organizations	

Total Hours		60-78
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Req Related for Applied Engineering, Tech/Mgt

Code	Title	Hours
ECON 101	Principles of Macroeconomics	3
ECON 102	Principles of Microeconomics	3
MATH 130	Elements of Statistics 1	3
Calculus - Choose 1 of the following:		4
MATH 151	Calculus for Management	
MATH 160	Precalculus	
MATH 161	Calculus 1	
Directed Science - Choose 2 of the following:		6-8
CHEM 101	Chem!Better Things/Better Lvng	
CHEM 103	Gen Organic and Biochemistry 1	
CHEM 104	Gen Organic and Biochemistry 2	
PHYS 103	Elements of Physics	
PHYS 104	Applied Physics	
PHYS 131	Physics 1 with Algebra	
PHYS 132	Physics 2 with Algebra	
Can receive credit for either PHYS 103 or 104, but not both		

Total Hours		19-21
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Applied Engineering & Technology Management, B.S. - General Technology

The Bachelor of Science degree program prepares applied engineers, technologists and technical managers with qualifications in general education, technological literacy, a technical option and management. Technical concentrations are available in advanced manufacturing, CADD, construction, general technology, graphic communications, nanofabrication, and robotics and control systems. The Association of Technology, Management & Applied Engineering (ATMAE) has accredited this program.

Supervised technical and management-oriented internships in industry are elective in both the A.T. and B.S. programs to enable relevant work experiences and the transition into employment. Managers who represent the technical concentrations serve as an advisory committee for the program. Graduates are commonly employed in design, production, training, sales and service careers in business, industry, education and government.

An applied engineering and technology minor complements majors in art, business, speech communication, computer science, economics, physics and OSEH. This minor enables specialization in several of the baccalaureate-degree technical concentrations.

Applied Engineering & Technology Management, B.S. - Graphic & Packaging Technologies Concentration

The Graphic & Packaging Technologies major at Millersville University educates students on topics regarding pre-press through post-press operations, including design, layout and desktop publishing. As a multifaceted industry with a wide range of career opportunities in fields such as print production, digital publishing and design, and web-based media, this program will prepare graduates to find employment in areas like production planning and estimating, customer relations, digital production, sales and quality control.

Major in Appl Engineering & Tech Mgt

Code	Title	Hours
TECHNICAL OPTION		
AENG 110	Communication and Information Systems	3
AENG 241	Drafting Communications	3
AENG 251	Print Media Systems	3
Web Publishing Systems - Choose 1 of the following:		3
AENG 252	Web Publishing Systems	
DESN 201	Understanding Web Design	
Fundamentals in Packaging Engineering		3
AENG 258	Package Engineering Fundmentls	
AENG 344	Product Design	3
AENG 351	Digital Imaging	3
AENG 355	Contemporary Printing	3
AENG 356	Desktop Publishing	3
AENG 357	Packaging Specialty Printing	3

Research Development in Graphic Communication		3
AENG 455	R&D in Graphic Communications and Packaging	
AENG 457	Print Production Management & Cost Estimating	3
TECHNOLOGY MANAGEMENT CORE		
OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
BUAD 231	Principles of Marketing	3
BUAD 251	Principles of Management (C- minimum pre-req for MGMT 452)	3
MGMT 452	Operations and Supply Chain Management	3
AENG 492	Technical Entrepreneurship	3
AENG 494	Total Quality Management	3
ELECTIVE COURSES IN TECHNOLOGY MANAGEMENT		
A maximum of 6 internship credits (ITEC 300, 400) may be counted for this degree.		
Technology Management Electives - Choose 2 of the following:		6-24
BUAD 161	Intro to Financial Accounting	
BUAD 352	Human Resource Management	
MGMT 357	International Management	
AENG 300	Co-Op Ed Experience in AENG	
AENG 392	Intro to Industrial Training	
AENG 400	Co-Op Ed Experience in AENG	
OSEH 221	Industrial Fire Prevention, Protection and Control	
OSEH 323	Human Factors in OSEH	
OSEH 333	Introduction to System Safety	
PSYC 329	Industrial Psychology	
SOCY 318	Soc Of Complex Organizations	
Total Hours		60-78

Req Related for Applied Engineering, Tech/Mgt

Code	Title	Hours
ECON 101	Principles of Macroeconomics	3
ECON 102	Principles of Microeconomics	3
MATH 130	Elements of Statistics 1	3
Calculus - Choose 1 of the following:		4
MATH 151	Calculus for Management	
MATH 160	Precalculus	
MATH 161	Calculus 1	
Directed Science - Choose 2 of the following:		6-8
CHEM 101	Chem!Better Things/Better Lvng	
CHEM 103	Gen Organic and Biochemistry 1	
CHEM 104	Gen Organic and Biochemistry 2	
PHYS 103	Elements of Physics	
PHYS 104	Applied Physics	
PHYS 131	Physics 1 with Algebra	
PHYS 132	Physics 2 with Algebra	
Can receive credit for either PHYS 103 or 104, but not both		
Total Hours		19-21

Applied Engineering & Technology, A.T. - Computer Aided Draft/Design

The associate-degree program prepares technicians with the liberal arts, technological literacy and technical preparation for either direct employment or the seamless continuation in a bachelor's-degree program in applied engineering and technology management (AETM) or occupational safety and environmental health (OSEH). Technical concentrations in the associate of technology program include advanced manufacturing, computer-aided drafting and design (CADD), construction, control systems, graphic communications, nanofabrication and occupational safety.

Major in Appl Eng Tech-AT

Code	Title	Hours
AENG 130	Production Materials & Processes	3
AENG 241	Drafting Communications	3
AENG 342	Computer-Aided Engineering Drawing	3
AENG 344	Product Design	3
AENG 346	Architectural Drawing	3
OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
Directed Electives - Choose 4 of the following:		12-21
AENG 110	Communication and Information Systems	
AENG 120	Energy Systems	
AENG 243	Technical Sketching, Design & Rendering	
AENG 300	Co-Op Ed Experience in AENG	
AENG 345	Statics/Strength of Materials	
AENG 347	Engineering Visualization	
AENG 446	Advanced Applications in Drafting and Design	
AENG 448	Machine Tool Design	
Total Hours		30-39

Applied Engineering & Technology, A.T.- Construction Technology

The Associate of Technology in Construction Technology provides students with the same basic technical coursework as the four-year Construction Management program, but without courses in management. You will explore production processes, drafting communications, nonmetallic materials, construction technology, material statics and strengths, sustainable systems, computer-aided engineering and more. Required related courses round out the departmental requirements for this degree with options in mathematics and science.

Major in Appl Eng Tech-AT

Code	Title	Hours
AENG 120	Energy Systems	3
AENG 130	Production Materials & Processes	3
AENG 241	Drafting Communications	3
AENG 271	Processing Nonmetallic Materials	3
AENG 331	Construction Technology 1	3
AENG 332	Construction Technology 2	3
AENG 346	Architectural Drawing	3
AENG 348	Green Building and Sustainable Systems	3

OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
Directed Electives - Choose 1 of the following:		3-12
AENG 300	Co-Op Ed Experience in AENG	
AENG 326	Fluid Power	
AENG 347	Engineering Visualization	
AENG 376	Woodworking Technology	
Total Hours		30-39

Applied Engineering & Technology, A.T.- Electronics/Control Systems

The associate-degree program in Applied Engineering and Technology prepares technicians with the liberal arts, technological literacy and technical preparation for either direct employment or the seamless continuation in a bachelor's-degree program in applied engineering and technology management (AETM) or occupational safety and environmental health (OSEH). Technical concentrations in the associate of technology program include advanced manufacturing, computer-aided drafting and design (CADD), construction, control systems, graphic communications, nanofabrication and occupational safety.

Applied Engineering & Technology, A.T.- Graphic Communication Technology

The Graphic Communication concentration within this two-year program provides students with the same basic technical coursework as the AETM program, but without courses in management. Graduates of this degree concentration typically find employment in all technical phases of the industry, from pre-press through post-press operations, including design and layout, and desktop publishing.

Applied Engineering & Technology, A.T.- Graphic Communication Technology

Major in Appl Eng Tech-AT

Code	Title	Hours
AENG 110	Communication and Information Systems	3
AENG 251	Print Media Systems	3
AENG 252	Web Publishing Systems	3
AENG 351	Digital Imaging	3
AENG 355	Contemporary Printing	3
AENG 356	Desktop Publishing	3
OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
Directed Electives - Choose 3 of the following:		9-18
AENG 241	Drafting Communications	
AENG 243	Technical Sketching, Design & Rendering	
AENG 300	Co-Op Ed Experience in AENG	
AENG 357	Packaging Specialty Printing	
AENG 455	R&D in Graphic Communications and Packaging	
Total Hours		30-39

Applied Engineering & Technology, A.T.- Manufacturing Technology

The Advanced Manufacturing concentration associate degree prepared students equally well for technical proficiency in modern manufacturing environments. The curriculum mirrors the AETM program, but does not include the same degree of business and management coursework. Transfer into the AETM program is seamless if desired later on.

Applied Engineering & Technology, A.T.- Manufacturing Technology

Major in Appl Eng Tech-AT

Code	Title	Hours
AENG 130	Production Materials & Processes	3
AENG 241	Drafting Communications	3
AENG 261	Electronic Systems	3
AENG 271	Processing Nonmetallic Materials	3
AENG 281	Processing Metallic Materials	3
AENG 325	Power Conversion and Control	3
AENG 342	Computer-Aided Engineering Drawing	3
OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
Polymer Ceramic Technology OR Wood Technology - Choose 1 of the following:		3
AENG 375	Polymer and Ceramic Technology	
AENG 376	Woodworking Technology	
Directed Electives - Choose 1 of the following:		3-12
AENG 300	Co-Op Ed Experience in AENG	
AENG 382	Automated Manufacturing	
AENG 425	Industrial Robotic Systems	
AENG 448	Machine Tool Design	
Total Hours		30-39

Applied Engineering & Technology, A.T.- Occupational Safety and Environmental Health

The Occupational Safety and Hygiene option is designed to provide students with both basic theoretical knowledge and practical skills in occupational safety. The courses in this option allow students to have a broad experience in key issues. These courses provide an overview of legal aspects of safety; industrial fire prevention, protection and control; safety engineering; environmental and industrial hygiene; ergonomics; and general, organic and biochemistry.

Applied Engineering & Technology, A.T.- Occupational Safety and Environmental Health

Major in Appl Eng Tech-AT

Code	Title	Hours
AENG 120	Energy Systems	3
AENG 130	Production Materials & Processes	3
OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
OSEH 220	Legal Aspects Environmental Safety	3

OSEH 221	Industrial Fire Prevention, Protection and Control	3
OSEH 320	Safety Engineering Principles	3
OSEH 321	Environmental & Industrial Hygiene I - Chemical and Biological Hazards	4
OSEH 323	Human Factors in OSEH	3
CHEM 104	Gen Organic and Biochemistry 2	3
Directed Elective - Choose 1 of the following:		3-12
AENG 300	Co-Op Ed Experience in AENG	
AENG 392	Intro to Industrial Training	
OSEH 333	Introduction to System Safety	
OSEH 410	Safety and Hygiene Management	
OSEH 422	Environmental & Industrial Health II - Physical Hazards	

Total Hours **31-40**

Automation and Robotics Engineering Technology, B.S.

Students in the ARET degree are introduced to the fundamentals of power, electronic systems and formal programming techniques common in industry. The curriculum, supported jointly by the departments of Applied Engineering, Safety & Technology and Computer Science, includes in-depth technical content of electronics, control systems, mechanical systems, and computer programming and applications to prepare professionals equipped to design, improve, maintain, and manage robotic and automated process and control systems. Laboratory courses require students to design, program, develop and construct projects independently and in small teams.

The study of robotics and controls involves the design, modeling, optimization, documentation and automation of advanced control problems. This major is designed to produce graduates prepared to work with multiple types of technology to design and implement projects that have advanced programming needs. Typical entry-level professions include software engineers, research and development engineers, systems engineers, computer engineers, process engineers, control systems engineers, controls technicians, field engineers, manufacturing engineers, robotics programmers and robotics technicians.

Major in Automation & Robotics Engineering Tech

Code	Title	Hours
APPLIED ENGINEERING, SAFETY TECHNOLOGY COURSES		
OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
AENG 130	Production Materials & Processes	3
AENG 241	Drafting Communications	3
AENG 261	Electronic Systems	3
AENG 262	Semiconductor Electronics	3
AENG 325	Power Conversion and Control	3
AENG 326	Fluid Power	3
AENG 342	Computer-Aided Engineering Drawing	3
AENG 364	Digital Electronics	3
AENG 425	Industrial Robotic Systems	3
AENG 427	Programmable Logic Controllers	3
AENG 467	Mobile Robotics	3
AENG 468	Control Network Integration	3

AENG 494	Total Quality Management	3
Total Hours		42

Req Related for Automation & Robotics Engineering

Code	Title	Hours
CSCI 161	Introduction to Programming 1	4
MATH 130	Elements of Statistics 1	3
MATH 161	Calculus 1	4
CHEM 111	Introductory Chemistry 1	4
PHYS 231	Physics 1 with Calculus	5
OPTION (SELECT/COMPLETE ONE) - Choose 1 of the following options 1-2:		15-16
Option 1. COMPUTER SCIENCE		
CSCI 140	Discrete Structures	
CSCI 162	Introduction to Programming 2	
CSCI 362	Data Structures	
CSCI 450	Artificial Intelligence	
Option 2. TECHNOLOGY MANAGEMENT		
ECON 101	Principles of Macroeconomics	
ECON 102	Principles of Microeconomics	
BUAD 251	Principles of Management	
MGMT 452	Operations and Supply Chain Management	
AENG 492	Technical Entrepreneurship	
Total Hours		35-36

Computer Aided Drafting/Design Minor

Students taking the Computer-Aided Drafting minor complete 18 credits of technical courses. One of these is a foundational course in drafting and design and then students choose five technical courses from topics like production materials and processes, computer-aided engineering drawing, product design, architectural drawing, and several others.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Computer Aided Drafting/Design

Code	Title	Hours
AENG 241	Drafting Communications	3
Computer Aided Drafting/Design Electives - Choose 5 of the following:		15
AENG 130	Production Materials & Processes	

AENG 243	Technical Sketching, Design & Rendering	
AENG 342	Computer-Aided Engineering Drawing	
AENG 344	Product Design	
AENG 345	Statics/Strength of Materials	
AENG 346	Architectural Drawing	
AENG 347	Engineering Visualization	
AENG 446	Advanced Applications in Drafting and Design	
AENG 448	Machine Tool Design	
Total Hours		18

Construction Technology Minor

The minor in Construction Technology is available to students who complete 18 credits of technical courses. Four foundational classes explore safety, materials processing and computer-aided drafting and design. Students then select two technical courses focused specifically in construction technologies.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Construction Technology

Code	Title	Hours
AENG 130	Production Materials & Processes	3
AENG 241	Drafting Communications	3
AENG 271	Processing Nonmetallic Materials	3
OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
Construction Technology Electives - Choose 2 of the following:		6
AENG 331	Construction Technology 1	
AENG 332	Construction Technology 2	
AENG 346	Architectural Drawing	
AENG 348	Green Building and Sustainable Systems	
Total Hours		18

Control Systems Technology Minor

The Control Systems Technology curriculum helps students establish a foundation of knowledge about science principles before focusing on the application that knowledge to technology. Laboratory courses encourage students to design, program, develop and construct projects independently and collaborate in small groups. The minor in Control Systems Technology is available to students who complete 18 credits of technical courses related to the study of robotics and control systems.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Control Systems Technology

Code	Title	Hours
AENG 261	Electronic Systems	3
AENG 262	Semiconductor Electronics	3
AENG 325	Power Conversion and Control	3
Control Systems Technology Electives - Choose 3 of the following:		9
AENG 130	Production Materials & Processes	
AENG 241	Drafting Communications	
AENG 326	Fluid Power	
AENG 342	Computer-Aided Engineering Drawing	
AENG 364	Digital Electronics	
AENG 425	Industrial Robotic Systems	
AENG 427	Programmable Logic Controllers	
AENG 467	Mobile Robotics	
Total Hours		18

General Applied Engineering Technology Minor

The General Track option is the most flexible of all minors offered within the AEST department. It is built from a foundation of three broad-based introductory technical courses that provide students with a basic technical background in various technologies. After completing these three courses students are able to choose three more advanced technical courses offered within the department. This provides students with the opportunity to concentrate in a specific area such as material processing, manufacturing, communications or automation, or take a variety of courses from different areas to customize your minor for your own specific needs and interests.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.

6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Gen Applied Engineering Tech

Code	Title	Hours
Communication Info Systems		3
AENG 110	Communication and Information Systems	
AENG 120	Energy Systems	3
AENG 130	Production Materials & Processes	3
General Applied Engineering Technology Electives - Choose 3 of the following: ¹		9
AENG 241	Drafting Communications	
AENG 243	Technical Sketching, Design & Rendering	
AENG 251	Print Media Systems	
AENG 252	Web Publishing Systems	
AENG 261	Electronic Systems	
AENG 262	Semiconductor Electronics	
AENG 271	Processing Nonmetallic Materials	
AENG 281	Processing Metallic Materials	
AENG 325	Power Conversion and Control	
AENG 326	Fluid Power	
AENG 331	Construction Technology 1	
AENG 332	Construction Technology 2	
AENG 342	Computer-Aided Engineering Drawing	
AENG 344	Product Design	
AENG 345	Statics/Strength of Materials	
AENG 346	Architectural Drawing	
AENG 347	Engineering Visualization	
AENG 348	Green Building and Sustainable Systems	
AENG 351	Digital Imaging	
AENG 355	Contemporary Printing	
AENG 356	Desktop Publishing	
AENG 357	Packaging Specialty Printing	
AENG 364	Digital Electronics	
AENG 375	Polymer and Ceramic Technology	
AENG 376	Woodworking Technology	
AENG 382	Automated Manufacturing	
AENG 425	Industrial Robotic Systems	
AENG 427	Programmable Logic Controllers	
AENG 446	Advanced Applications in Drafting and Design	
AENG 448	Machine Tool Design	
AENG 455	R&D in Graphic Communications and Packaging	
AENG 467	Mobile Robotics	
AENG 492	Technical Entrepreneurship	
3 electives from the list are required. 2 of the electives MUST be 300/400 level.		
Total Hours		18

Graphic Communication Technology Minor

The Graphic Communication minor requires students to complete six courses from among the course offerings in the Graphic Communication (GC) concentration. Three of these courses are core GC classes: Communication & Information Systems, Print Media Systems, and Web Publishing & Interactive Media. To complete the minor, students must choose three additional courses from six options including: Digital Imaging, Contemporary Printing, Desktop Publishing, Packaging & Specialty Printing, R&D in Graphic Communication, and Print Production Management & Cost Estimating. A Graphic Communication minor can help students become knowledgeable about, and skilled in, practices involved in printing, packaging, publishing and other graphic communication industries.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Graphic Communication Technology

Code	Title	Hours
Communication Info Systems		3
AENG 110	Communication and Information Systems	
AENG 251	Print Media Systems	3
AENG 252	Web Publishing Systems	3
Graphic Communication Technology Electives - Choose 3 of the following:		9
AENG 351	Digital Imaging	
AENG 355	Contemporary Printing	
AENG 356	Desktop Publishing	
AENG 357	Packaging Specialty Printing	
AENG 455	R&D in Graphic Communications and Packaging	
AENG 457	Print Production Management & Cost Estimating	
Total Hours		18

Integrative STEM Education Methods Minor

The Integrative STEM Education Methods (ISEM) minor is specifically designed for students in the **Early Childhood Education (ERCH)** major. The overall goal of this minor is to prepare future early childhood teachers to develop the knowledge, skills, and habits of mind that would best prepare them to use integrative teaching-learning approaches to

enhance their students' learning of STEM, as well as other areas of the curriculum.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Manufacturing Engineering Technology, B.S.

Students in the Bachelor of Science in manufacturing engineering technology major will be introduced to the fundamentals and advanced concepts of engineering, materials and production processes used within industry. The program provides in-depth technical content of advanced manufacturing, with emphasis on automated manufacturing, robotics, and computer-aided drafting and design, often collectively referred to as computer-integrated manufacturing (CIM). Laboratory courses require students to design, develop and construct projects independently as well as in small groups. Technologies commonly used by major corporations are emphasized throughout the curriculum. Juniors and seniors are encouraged to participate in a cooperative education or internship experience to further enhance their knowledge in technical areas within an industrial environment.

Manufacturing engineers are responsible for planning the production process of manufactured products. Typical entry-level employment titles for graduates of this program include production managers, production engineers, manufacturing engineers, manufacturing process engineers, technical salespersons and quality assurance engineers. Graduates of the MFET major enjoy outstanding placement in their field at present with salaries among the highest of any majors on campus.

Major in Manufacturing Engineering Technology

Code	Title	Hours
CORE REQUIREMENTS		54
AENG 130	Production Materials & Processes	
AENG 241	Drafting Communications	
AENG 261	Electronic Systems	
AENG 262	Semiconductor Electronics	
AENG 271	Processing Nonmetallic Materials	
AENG 281	Processing Metallic Materials	
AENG 325	Power Conversion and Control	
AENG 326	Fluid Power	
AENG 342	Computer-Aided Engineering Drawing	
AENG 344	Product Design	
AENG 345	Statics/Strength of Materials	
AENG 375	Polymer and Ceramic Technology	

AENG 382	Automated Manufacturing	
AENG 425	Industrial Robotic Systems	
AENG 427	Programmable Logic Controllers	
AENG 448	Machine Tool Design	
AENG 492	Technical Entrepreneurship	
AENG 494	Total Quality Management	
DIRECTED ELECTIVES - Choose 1 class for at least 3 hours from:		3
AENG 300	Co-Op Ed Experience in AENG	
AENG 376	Woodworking Technology	
AENG 392	Intro to Industrial Training	
AENG 400	Co-Op Ed Experience in AENG	
AENG 446	Advanced Applications in Drafting and Design	
AENG 467	Mobile Robotics	
Total Hours		57

Req Related for Manufacturing Engineering Tech

Code	Title	Hours
MATH 161	Calculus 1	4
Survey of Statistics		3
MATH 130	Elements of Statistics 1	
Physics I with Algebra - Choose 1 of the following:		4-5
PHYS 131	Physics 1 with Algebra	
PHYS 231	Physics 1 with Calculus	
Physics II with Algebra - Choose 1 of the following:		4-5
PHYS 132	Physics 2 with Algebra	
PHYS 232	Physics 2 with Calculus	
CHEM 111	Introductory Chemistry 1	4
Total Hours		19-21

Occupational Safety & Environmental Health, B.S.

The OSEH program is designed for persons interested in the safety, industrial hygiene and environmental health professions. OSEH includes general education studies, with emphasis on the sciences and core studies in the technical and managerial aspects of industrial safety and hygiene. An internship is required in industry or in an insurance or government agency. Continuous improvement of the program is guided by an advisory committee of safety professionals. Graduates of this program typically work as safety and health managers, industrial hygienists, loss-control consultants, compliance officers and environmental safety specialists. The OSEH minor should be an attribute to majors in biology, business administration, chemistry, applied engineering and technology management, political science and nursing. OSEH is nationally accredited by the Accreditation Board for Engineering and Technology (ABET).

Major in Occupational Saf & Env Health, BS

Code	Title	Hours
OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
OSEH 220	Legal Aspects Environmental Safety	3
OSEH 221	Industrial Fire Prevention, Protection and Control	3
OSEH 320	Safety Engineering Principles	3

OSEH 321	Environmental & Industrial Hygiene I - Chemical and Biological Hazards	4
OSEH 323	Human Factors in OSEH	3
OSEH 333	Introduction to System Safety	3
OSEH 410	Safety and Hygiene Management	3
OSEH 422	Environmental & Industrial Health II - Physical Hazards	4
OSEH 430	Topics in Occupational Safety & Environmental Health	1
OSEH 435	Environmental Health	3
OSEH 440	Internship	12
Total Hours		45

Req Related for Occupatnl Safety & Env. Health

Code	Title	Hours
MATHEMATICS		
Statistics Course - Choose 1 of the following:		3
MATH 130	Elements of Statistics 1	
MATH 235	Survey of Statistics	
ECON 231	Applied Statistics 1	
Calculus - Choose 1 of the following:		4-5
MATH 101	College Algebra	
MATH 151	Calculus for Management	
MATH 160	Precalculus	
MATH 161	Calculus 1	
MATH 211	Calculus 2	
BIOLOGY AND CHEMISTRY		
BIOL 100	General Biology	3
Chemistry I - Choose 1 of the following:		3-4
CHEM 103	Gen Organic and Biochemistry 1	
CHEM 111	Introductory Chemistry 1	
CHEM 231	Organic Chemistry 1	
Chemistry II - Choose 1 of the following:		3-4
CHEM 104	Gen Organic and Biochemistry 2	
CHEM 112	Introductory Chemistry 2	
CHEM 232	Organic Chemistry 2	
PHYSICS AND INDUSTRIAL TECHNOLOGY		
AENG 130	Production Materials & Processes	3
AENG 392	Intro to Industrial Training	3
Physics Options - Choose 1 of the following options 1-2:		7-8
Option 1. Physics Elective and Energy Power Systems - See Appendix 1		7
Option 2. Physics Courses		
PHYS 131 & PHYS 132	Physics 1 with Algebra and Physics 2 with Algebra	
Total Hours		36-40

Appendix 1. Physics Elective and Energy & Power Systems

Code	Title	Hours
Energy Power Systems		3
AENG 120	Energy Systems	
Physics Elective - Choose 1 of the following:		4

PHYS 103	Elements of Physics
PHYS 104	Applied Physics
PHYS 131	Physics 1 with Algebra

Occupational Safety Minor

The OSEH minor is designed for persons interested in the safety and environmental health professions. This minor places emphasis on the core studies in the technical and managerial aspects of occupational safety and health. The six core courses required to complete the minor will provide you with sufficient technical skills to function in any safety and health role. Graduates of this program typically work as safety and health managers, loss-control consultants, compliance officers and environmental safety specialists. The OSEH minor should be an attribute to majors in biology, business administration, chemistry, applied engineering & technology management, political science and nursing. A minor in OSEH will enable you to function in multiple roles in your professional career if you so wish to.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Occupational Saf & Env Health

Code	Title	Hours
OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
OSEH 220	Legal Aspects Environmental Safety	3
OSEH 221	Industrial Fire Prevention, Protection and Control	3
OSEH 320	Safety Engineering Principles	3
OSEH 323	Human Factors in OSEH	3
OSEH 410	Safety and Hygiene Management	3
Total Hours		18

Technology & Engineering Education (K-12), B.S.Ed.

The TECE program is a teacher preparation program for persons seeking Pennsylvania teacher certification in technology education, K-12.

The three themes of professional education at Millersville are supported and implemented, including engagement in learning communities of inquiry and action, a focus on students and demonstration of exemplary professional practices. Professional dispositions are developed and assessed in communicating professionally, demonstrating professional growth, demonstrating professional relationships, exhibiting attributes

suitable to the profession, and displaying responsible and ethical behavior.

TECE majors are broadly prepared in general education, technology and engineering, and professional teacher education. Emphasis is on understanding, applying, managing and assessing design, biorelated, communication, energy and power, transportation and production technologies. Students may specialize in a technical area of their choice and must devote one semester to full-time student teaching in a public school.

An advisory committee of technology and engineering education teachers and supervisors assists with providing program relevancy. This program is accredited and nationally recognized as an outstanding technology teacher education program by the International Technology and Engineering Educators Association/Council on Technology and Engineering Teacher Education.

Major in Technology and Engineering Ed - BSE

Code	Title	Hours
TECHNOLOGY LITERACY CORE		
AENG 110	Communication and Information Systems	3
AENG 120	Energy Systems	3
AENG 130	Production Materials & Processes	3
AENG 140	Bio-related Technologies	3
TECHNICAL CORE		
AENG 241	Drafting Communications	3
Print Media Systems or Web Publishing Interactive Media - Choose 1 of the following:		3
AENG 251	Print Media Systems	
AENG 252	Web Publishing Systems	
AENG 261	Electronic Systems	3
Processing Nonmetallic or Metallic Materials - Choose 1 of the following:		3
AENG 271	Processing Nonmetallic Materials	
AENG 281	Processing Metallic Materials	
AENG 322	Transportation	3
AENG 327	Engineering Structures	3
AENG 344	Product Design	3
AENG 346	Architectural Drawing	3
AENG 435	Manufacturing Enterprise	3
TECHNICAL LAB COURSES		
Laboratory Electives - Choose 3 of the following:		9-10
AENG 243	Technical Sketching, Design & Rendering	
AENG 251	Print Media Systems	
AENG 252	Web Publishing Systems	
AENG 262	Semiconductor Electronics	
AENG 271	Processing Nonmetallic Materials	
AENG 281	Processing Metallic Materials	
AENG 325	Power Conversion and Control	
AENG 326	Fluid Power	
AENG 331	Construction Technology 1	
AENG 332	Construction Technology 2	
AENG 342	Computer-Aided Engineering Drawing	
AENG 345	Statics/Strength of Materials	
AENG 347	Engineering Visualization	

AENG 351	Digital Imaging
AENG 355	Contemporary Printing
AENG 356	Desktop Publishing
AENG 357	Packaging Specialty Printing
AENG 364	Digital Electronics
AENG 375	Polymer and Ceramic Technology
AENG 376	Woodworking Technology
AENG 382	Automated Manufacturing
AENG 425	Industrial Robotic Systems
AENG 427	Programmable Logic Controllers
AENG 446	Advanced Applications in Drafting and Design
AENG 448	Machine Tool Design
AENG 455	R&D in Graphic Communications and Packaging
AENG 467	Mobile Robotics
AENG 485	Adv Manufacturing Systems
AENG 498	Independent Study
AENG 515	Adv Prob:
AENG 525	Adv Prob:
AENG 535	Adv Prob:

REQUIRED EDTE COURSES - count in major GPA		
EDTE 291	Foundations of Technology & Engineering Ed	3
EDTE 391	Curr & Inst in Tech & Eng Ed	3
EDTE 491	Seminar in Techn & Engring Ed	1
EDTE 496	Innovatn/Design Methodologies	2

Total Hours 57-58

Professional Education

Code	Title	Hours
EDUCATIONAL FOUNDATIONS		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
REQUIRED EDUCATION COURSES		
Foundations of Technology Engineering Education 3		
EDTE 291	Foundations of Technology & Engineering Ed	3
Innovation and Design Methodologies 2		
EDTE 496	Innovatn/Design Methodologies	2
ACCOMMODATIONS AND ADAPTATIONS		
EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3
Curr Instruction in Technology Engineering Education 3		
EDTE 391	Curr & Inst in Tech & Eng Ed	3
STUDENT TEACHING		
EDSE 471	Student Teaching Seminar	3
Seminar in Technology Engineering Education 1		
EDTE 491	Seminar in Techn & Engring Ed	1
Student Teaching 9		
EDTE 461	Edte Stu Teaching	9

Total Hours 33

Req Related for Technology and Engineering Ed

Code	Title	Hours
General Education (G2) Math courses - Choose 2 classes from:		
Any MATH course(s) with attribute G2		
Science Elective		
Choose a G2 Lab Science from BIOL, CHEM, PHYS or ESCI. BIOL 100, CHEM 103, CHEM 205, PHYS 103 or PHYS 104 are strongly recommended.		
Literature Requirement - Choose 1 class from:		
Any ENGL 230-237 course(s)		
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 334	African American Literature 2	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	

Total Hours 0

Advanced Professional Studies, BSE

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		

APS REQUIREMENTS		
English Composition - Choose 1 of the following: 3		
ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	
English Literature - Choose 1 of the following: 3		
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	

Mathematics
Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211 Foundations Modern Education
& EDFN 241 and Psychological Foundations of Teaching

6 is likely that individuals would need more preparation to deliver courses with more depth at the high school level, but the certification is for all courses K-12.

48 earned (transcript) credit hours are required

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. [Click here for the application.](#)

Total Hours 12

Technology & Engineering Education Minor

The minor in Technology & Engineering Education is designed to help students prepare for the Praxis subject area specialty examination in Technology & Engineering Education. Successful completion of these courses, combined with a passing score on the subject area exam, should provide adequate preparation for teachers of other subjects to effectively deliver courses in Technology & Engineering Education at the K-8 level as these programs tend to be broad-based survey types of courses. It

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Technology and Engineering Education

Code	Title	Hours
Communications and Information Technology		3
AENG 110	Communication and Information Systems	
AENG 120	Energy Systems	3
AENG 130	Production Materials & Processes	3
AENG 241	Drafting Communications	3
EDTE 291	Foundations of Technology & Engineering Ed	3
AENG 344	Product Design	3
Total Hours		18

Technology & Engineering Education, B.S.Ed. - Engineering Design Education Concentration

TECE majors with the Engineering Design Education concentration meet all of the same requirements of the Technology & Engineering Education major, including broad preparation in all technology & engineering content areas. However, this concentration would ensure that students are being challenged to take some courses that best fit an engineering design-focused curriculum, including specific math and science courses and a narrower set of engineering-focused technical electives.

Major in Technology and Engineering Ed - BSE

Code	Title	Hours
TECHNOLOGY LITERACY CORE		
AENG 110	Communication and Information Systems	3
AENG 120	Energy Systems	3
AENG 130	Production Materials & Processes	3
AENG 140	Bio-related Technologies	3
TECHNICAL CORE		
AENG 241	Drafting Communications	3
Print Media Systems or Web Publishing Interactive Media - Choose 1 of the following:		3
AENG 251	Print Media Systems	
AENG 252	Web Publishing Systems	

AENG 261	Electronic Systems	3
Processing Nonmetallic or Metallic Materials - Choose 1 of the following:		
AENG 271	Processing Nonmetallic Materials	
AENG 281	Processing Metallic Materials	
AENG 322	Transportation	3
AENG 327	Engineering Structures	3
AENG 344	Product Design	3
AENG 346	Architectural Drawing	3
AENG 435	Manufacturing Enterprise	3

TECHNICAL LAB COURSES FOR ENGINEERING DESIGN

Only one OSEH course may be counted as a laboratory elective.

Laboratory Electives for Engineering Design - Choose 3 of the following: 9-10

AENG 262	Semiconductor Electronics	
AENG 325	Power Conversion and Control	
AENG 326	Fluid Power	
AENG 332	Construction Technology 2	
AENG 342	Computer-Aided Engineering Drawing	
AENG 345	Statics/Strength of Materials	
AENG 347	Engineering Visualization	
AENG 357	Packaging Specialty Printing	
AENG 364	Digital Electronics	
AENG 382	Automated Manufacturing	
AENG 446	Advanced Applications in Drafting and Design	
AENG 448	Machine Tool Design	
AENG 467	Mobile Robotics	
AENG 498	Independent Study	
OSEH 320	Safety Engineering Principles	
OSEH 323	Human Factors in OSEH	

REQUIRED EDTE COURSES - count in major GPA

EDTE 291	Foundations of Technology & Engineering Ed	3
EDTE 391	Curr & Inst in Tech & Eng Ed	3
EDTE 491	Seminar in Techn & Engring Ed	1
EDTE 496	Innovatn/Design Methodologies	2

Total Hours 57-58

Professional Education

Code	Title	Hours
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EDUCATIONAL FOUNDATIONS

EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3

REQUIRED EDUCATION COURSES

Foundations of Technology Engineering Education 3		
EDTE 291	Foundations of Technology & Engineering Ed	
Innovation and Design Methodologies 2		
EDTE 496	Innovatn/Design Methodologies	

ACCOMMODATIONS AND ADAPTATIONS

EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3
Curr Instruction in Technology Engineering Education 3		
EDTE 391	Curr & Inst in Tech & Eng Ed	

STUDENT TEACHING

EDSE 471	Student Teaching Seminar	3
Seminar in Technology Engineering Education 1		
EDTE 491	Seminar in Techn & Engring Ed	
Student Teaching 9		
EDTE 461	Edte Stu Teaching	

Total Hours 33

Req Related for Technology and Engineering Ed

Code	Title	Hours
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MATHEMATICS 9

MATH 130	Elements of Statistics 1	
MATH 151	Calculus for Management	

SCIENCE 8

PHYS 131	Physics 1 with Algebra	
PHYS 132	Physics 2 with Algebra	

Literature Requirement - Choose 1 class from:

Any ENGL 230-237 course(s)

ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 334	African American Literature 2	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	

Total Hours 15

Advanced Professional Studies, BSE

Code	Title	Hours
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*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.

APS REQUIREMENTS

English Composition - Choose 1 of the following: 3

ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	

English Literature - Choose 1 of the following: 3

ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	

ENGL 401	Old Eng Lang and Literature
ENGL 402	Middle Eng Lang and Literature

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211	Foundations Modern Education	6
& EDFN 241	and Psychological Foundations of Teaching	

48 earned (transcript) credit hours are required

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

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Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours 12

Biology

The Department of Biology offers one degree and 11 options leading to the baccalaureate degree in biology. The requirements are very similar for all programs during the first two years, so any change in career emphasis need not involve any major loss of time or credits. The department also offers minors in biology and molecular biology/biotechnology.

The program leading to the Bachelor of Science degree provides the student with an opportunity to elect a substantial number of courses in a specific area of biology. This program provides a strong background for admission to graduate or professional school and prepares the student for employment in the field of biology upon graduation.

Options available within the B.S. Biology program include animal behavior, environmental biology, marine biology, molecular biology/biotechnology, medical technology, nuclear medicine technology, plant sciences, premedical professions, pre-optometry, pre-athletic training, pre-podiatry and respiratory therapy.

The **animal behavior** option provides training in both the biological mechanisms and the evolutionary functions of behavior. Students completing this option are prepared for a career in applied animal behavior or for graduate study.

The **environmental biology** option permits students to concentrate in ecology and enables them to gain expertise that will make them competitive in industry, governmental agencies and graduate school.

The **marine biology** option encourages students to choose electives in the marine biology area. Many marine science courses are offered at our field station at Wallops Island, Virginia, since they usually involve significant field work. For more information on the field station, see "Chincoteague Bay Field Station at the Marine Science Consortium" in the Special Academic Opportunities (p. 338) section.

The **molecular biology/biotechnology** option allows students to concentrate in genetics, cell and molecular biology. The courses required for this option complement each other, training students in a variety of laboratory and methods and enabling students to gain the theoretical understanding and technical expertise currently needed to be competitive in industry and graduate school.

Students in the **plant sciences** option concentrate on the study of plants while obtaining a broad background in biology. This option effectively prepares those interested in professions in general botany, environmental studies, molecular/biotech, and horticulture as well as advanced graduate study in a variety of plant-related fields.

The **pre-medical professions** option allows the students to focus on courses in anatomy, physiology, cell biology and genetics. It includes one track for students planning on continuing their education in medical, dental or physician assistant school and another for students preparing for veterinary school. The program provides a strong background in courses that prepare the students for taking the appropriate entrance exams and encourages them to take advanced courses that will help them succeed in those professional programs.

After completing three years of undergraduate study, students in the **medical technology (clinical/medical laboratory science)** program are eligible to apply to an accredited hospital-based medical technology program for one year of clinical laboratory experience, after which they will be awarded the Bachelor of Science degree and will be eligible to sit for the national certification examination. Currently, Millersville has

full affiliations with three hospital-based programs (PA College of Health Sciences, York Hospital, Reading Hospital) and a renewable affiliation with Penn State Hershey).

After completing three years of undergraduate study, students in the **nuclear medicine technology** program are eligible to apply for admission to either the Pennsylvania College of Health Sciences of Nuclear Medicine Technology program (12-month clinical phase) or the Johns Hopkins School of Imaging program (18-month clinical phase), after which they will be awarded the Bachelor of Science degree and will be eligible to sit for the national certification examination.

An agreement between Millersville University and Salus University (formerly the Pennsylvania College of Optometry) in Philadelphia allows students in the **optometry** option to complete three years of undergraduate study at Millersville and then transfer to Philadelphia for the first year of study in the doctoral program. Students who complete the year with good grades receive a B.S. in biology from Millersville University, and after three additional years earn the Doctor of Optometry degree.

A cooperative option exists between Millersville University and the Temple University School of Podiatric Medicine. This 3/4 **prepodiatry** program allows students to transfer to the professional school after satisfactorily completing 99 semester hours at Millersville University. After successful completion of the basic science courses at the Temple University School of Podiatric Medicine, students are awarded a B.S. in biology from Millersville University. Three recommended Millersville students a year have reserved spaces for admission to the podiatric college, where graduation after four years earns a D.P.M. degree.

Millersville University has an Early Acceptance Program (EAP) agreement with the Lake Erie College of Osteopathic Medicine (LECOM) for programs in osteopathic medicine, dentistry and pharmacy. The current agreement is a “4+4 year program” and is designed for incoming first year students and second-year students. Students who are interested in the EAP must be accepted by LECOM, either as an incoming first year student, or before completing their sophomore year, and complete their degree at Millersville University. (EAP students will need to take the MCAT and complete an online application before they can enroll at LECOM.) Accepted students must do well during each academic semester at Millersville but will have a guaranteed seat in the classroom at LECOM.

Millersville University is the sponsoring institution for the **respiratory therapy** program. After successfully completing three years of study at the University, students enter the 16-month clinical phase at Millersville University and UPMC Lititz. Admission into the clinical phase is competitive and not guaranteed. At the end of the clinical phase, they are awarded the Bachelor of Science degree and a certificate in respiratory therapy, and will be eligible to sit for the national credentialing examination.

The education curriculum leads to the Bachelor of Science in Education, with secondary education certification in biology.

Individualized programs in genetic counseling are organized with a program advisor.

Bachelor of Science in Allied Health Technology

The Department of Biology offers one degree and five options leading to the baccalaureate degree in allied health technology. The requirements are initially very similar for each of the options so that any change in career emphasis need not involve any major loss of time or credits.

A dual-degree program in **athletic training** is available for well-prepared students. During three years of study at Millersville, students complete the requirements for admission to an affiliated graduate program. Upon completion of one year of graduate study, credits transfer back to Millersville to satisfy the requirements for the B.S. degree in allied health technology, pre-athletic training. Students then earn a M.S. in athletic training from the affiliated university after a second year of graduate study.

A four-year program prepares students for graduate or professional studies to become specialists in **sports medicine**, such as athletic trainers, physical therapists, physicians and physician assistants. The curriculum includes courses in nutrition, sports psychology, and the prevention and care of injuries.

After completing three years of undergraduate study, students in the allied health technology/**medical technology** program are eligible to apply to an accredited hospital-based medical technology program for one year of clinical laboratory experience, after which they will be awarded the Bachelor of Science degree and will be eligible to sit for the national certification examination. Currently, Millersville University has full affiliations with three hospital-based programs (PA College of Health Sciences, York Hospital, Reading Hospital) and a renewable affiliation with Penn State Hershey.

After completing three years of undergraduate study, students in the allied health technology/**nuclear medicine technology** program are eligible to apply for admission to either the Pennsylvania College of Health Sciences (12-month clinical phase) program or the Johns Hopkins School of Imaging (18-month clinical phase) program, after which they will be awarded the Bachelor of Science degree and will be eligible to sit for the national certification examination.

Millersville University is the sponsoring institution for the **respiratory therapy** program. After successfully completing two years of study at the University, students enter the approximately two-year clinical phase at UPMC Lititz. Admission into the clinical phase is competitive and not guaranteed. At the end of the clinical phase, students are awarded the Bachelor of Science degree and a certificate in respiratory therapy, and will be eligible to sit for the national credentialing examination. This degree option differs from the other B.S. allied health technology and B.S. degree programs offered by the biology department in its format and is termed a “2+2 year program” that begins the clinical year in the summer following the sophomore year, not the end of the junior year, as is the case for the other degree options.

the programs

- Allied Health Technology, B.S. - Pre-Athletic Training Dual-Degree Option (p. 263)
- Allied Health Technology, B.S. - Respiratory Therapy 2+2 Year Option (p. 263)
- Allied Health Technology, B.S. - Medical Technology 3+1 Year Option (p. 264)
- Allied Health Technology, B.S. - Nuclear Medicine Technology 3+1 Year Option (p. 265)
- Allied Health Technology, B.S. - Sports Medicine (p. 266)
- Biology Minor (p. 267)
- Biology, B.S. (p. 267)
- Biology, B.S. - Environmental Biology Option (p. 268)
- Biology, B.S. - Respiratory Therapy Option (p. 268)

- Biology, B.S. - Animal Behavior Option (p. 269)
- Biology, B.S. - Marine Biology Option (p. 269)
- Biology, B.S. - Medical Technology Option (p. 270)
- Biology, B.S. - Molecular Biology/Biotechnology Option (p. 271)
- Biology, B.S. - Nuclear Medicine Technology Option (p. 272)
- Biology, B.S. - Optometry Option (p. 273)
- Biology, B.S. - Plant Sciences Option (p. 273)
- Biology, B.S. - Pre-Medical Professions Option (p. 262)
- Biology, B.S. - Pre-Podiatry Option (p. 274)
- Biology, B.S.Ed. (p. 274)
- Molecular Biology/Biotechnology Minor (p. 276)

the faculty

Cebra-Thomas, Judith; Associate Professor

College of Science and Technology

B.A., Johns Hopkins University, 1979; Ph.D., Washington University, 1986

Didier, Dominique; Professor

College of Science and Technology

B.A., Illinois Wesleyan University, 1987; Ph.D., University of Massachusetts, 1992

Fellmeth, Jessica; Assistant Professor

College of Science and Technology

B.A., The College of New Jersey, 2006; Ph.D., Rutgers the State University of New Jersey, 2015

Haines, Aaron; Professor

College of Science and Technology

B.S., Virginia Tech, 1998; M.S., Texas A&M University, 2003; Ph.D., Ibid., 2006

Hardy, Christopher; Professor

College of Science and Technology

A.A., Catonsville Community College, 1991; B.S., University of Maryland, 1995; Ph.D., Cornell University and New York Botanical Garden, 2001

Hoover, John; Professor

College of Science and Technology

B.S., Indiana University of Pennsylvania, 1985; Ph.D., SUNY at Syracuse, 1990

Horton, Brent; Associate Professor

College of Science and Technology

B.S., Warner College of Natural Resources, 1999; Ph.D., University of Maine, 2007

Klosinska, Maja; Associate Professor

College of Science and Technology

M.S., University of Lodz (Poland), 2003; M.S., Ibid., 2004; Ph.D., Princeton University, 2011

Lehman, Heather; Associate Professor

College of Science and Technology

B.S., Shippensburg University, 2004; Ph.D., University of Delaware, 2012

Ligocki, Isaac; Assistant Professor

College of Science and Technology

B.A., Wittenberg University, 2006; Ph.D., The Ohio State University, 2015

Ramos-Sepulveda, Laura; Assistant Professor

College of Science and Technology

B.A., University of Puerto Rico at Mayaguez, 2010; Ph.D., The Pennsylvania State University, 2014

Ryndock, Eric; Assistant Professor

College of Science and Technology

B.S., Millersville University, 2007; Ph.D., The Pennsylvania State University, College of Medicine, 2016

Stieha, Christopher; Associate Professor

College of Science and Technology

B.S., University of Kentucky, 2003; B.A., Ibid., 2003; M.S., Ibid., 2008; Ph.D., Ibid., 2012

Wagner, Ryan; Professor

College of Science and Technology

B.S., South Dakota State University, 1996; Ph.D., Washington State University, 2001

Weaver, Carolyn; Assistant Professor

College of Science and Technology

B.S., Texas A&M University at Galveston, 2003; Ph.D., Ibid., 2016

Weise Cross, Laura; Assistant Professor

College of Science and Technology

B.A., University of Texas, 2009; B.S., Ibid., 2009; Ph.D., University of North Carolina, 2015

the courses

BIOL 100: 3 s.h.

General Biology (G2)

An introduction to biology with emphasis on cell structure, metabolism, genetics, behavior, ecology, adaptations, organ systems and evolution. 2 hours lec., 2 hours lab. No credit toward BIOL major.

BIOL 101: 4 s.h.

Foundations of Biology (G2)

This introduction of biological principles provides the foundation of modern biological knowledge essential for all higher-level courses. Topics include cell structure and function, cellular reproduction, energy acquisition, biochemical pathways, mechanisms of inheritance, natural selection, speciation and evolution. 2 hrs. lec., 1 hr. discussion, 3 hrs. lab. Offered in fall, spring. Prereq: Biology major or biology minor or permission of instructor.

BIOL 108H: 1 s.h.

Hrs: Freshman Biology Seminar

Emphasis on the intellectual and historical context of the core ideas of BIOL 100 and an in-depth exploration of ideas raised in lecture and laboratory. Satisfies the honors lab when taken with Biology 100. 1 hr. seminar. Offered in fall, spring. Prereq or coreq: BIOL 100 or 101.

BIOL 140: 3 s.h.**Introductory Ecology (G2)**

Introductory course in ecology (interactions of living organisms with the environment), evolution (adaptations of living organisms to the environment) and the environment of life on planet Earth. Important applied ecological topics such as agriculture and forestry, exploitation of populations, effects of disturbance and climate change, and conservation of biological diversity also are examined. The course covers significant content of the Academic Standards for Environment and Ecology and the Middle-Level Science Competencies as required by the Pa. Dept. of Education. 2 hrs. lec., 2 hrs. lab. No credit toward BIOL major. Prereq: ENGL 110, COMM 100 and completion of one course of MATH (101 or higher) or MPT of 160. In addition, BIOL 100 or 101 is recommended but not required. Offered during spring semester.

BIOL 179: 3 s.h.**Experimental**

Experimental

BIOL 204: 3 s.h.**Human Biology (G2, W)**

A non-laboratory course in human biology designed specifically for those students planning to specialize in social work, psychology or related fields. An overview of the changes that take place in the course of a human lifetime; basics of human evolution, ecology, behavior, anatomy and physiology of the human organism are discussed. 3 hrs. lec. Offered fall, spring. Prereq: BIOL 100 or BIOL 101, or permission of instructor, and ENGL 110. No credit toward BIOL major.

BIOL 205: 3 s.h.**Heredity and Human Affairs (G2)**

Genetics for non-majors with reference to human heredity and development. The social implications of recent advances in genetics are considered. 3 hrs. lec. Offered periodically. Prereq: BIOL 100 or BIOL 101, or permission of instructor or RN, and MATH 1**. No credit toward BIOL major.

BIOL 207: 3 s.h.**Human Sexuality (D, G2, W)**

Study of the nature of human sexuality, particularly as it relates to biological phenomena. Discussions and films will cover the biology of human reproduction, biology of human sexual behavior and its implications. 3 hrs. lec. Offered periodically. Prereq: BIOL 100 or BIOL 101, or permission of instructor or RN, and ENGL 110. No credit toward BIOL major.

BIOL 208: 3 s.h.**Plants and People (G2)**

Explores uses of plants and plant products by man and their impact on the development of civilization. Characteristics of plants that make them suitable for food, shelter, clothing, energy, medicines, entertainment, objects of worship, microclimate modification and aesthetic objects are discussed. 3 hrs. lec. Offered periodically. Prereq: BIOL 100 or BIOL 101, or permission of instructor. No credit toward BIOL major.

BIOL 211: 4 s.h.**Concepts of Zoology (G2)**

Study of invertebrate and vertebrate animals. Classification, reproduction, development, ecology, physiology, behavior, genetics, scientific methodology (including simple statistical approaches), and evolution. Laboratory studies include microscopy, dissections, live observations, computer exercises and experimentation. 3 hrs. lec., 3 hrs. lab. Prereq: BIOL 101 or BIOL 100 with a grade of C- or higher for non-majors; B- or higher in BIOL 100 for biology majors.

BIOL 212H: 1 s.h.**Hnrs:Zoology Seminar**

Continuation of BIOL 211. Original investigations and/or readings and discussions of the zoological literature about the diverse adaptations of animals to their environments. Completion of both BIOL/HNRS 212 and BIOL 211 earns 5 credits to be counted as one course in the G2 block. BIOL/HNRS 212 may not be used independently to fulfill a G2 requirement. 1 hr. seminar. Offered periodically. Prereq: completion of BIOL 211 with a grade of B- or higher and member of University Honors College, or 3.35 GPA, or instructor's permission.

BIOL 221: 4 s.h.**Concepts of Botany (G2)**

Consideration of features unique to plants such as localized meristems and open growth, water relations, photosynthesis, cell structure. An integrated study of plant structure and function using angiosperms as principal examples. Includes brief discussions of plant and fungal diversity, plant ecology and evolution and economic botany. 3 hrs. lec., 3 hrs. lab. Prereq: BIOL 101 or BIOL 100 with a grade of C- or higher; B- or higher in BIOL 100 for biology majors.

BIOL 222H: 1 s.h.**Hnrs:Problem Solving In Botany**

A botanical science investigation of a problem or series of problems. Students define a problem with a botanical basis, search appropriate literature, formulate hypotheses and collect appropriate information to test hypotheses through experimentation and data gathering. Completion of both BIOL/ HNRS 222 and BIOL 221 earns 5 credits to be counted as one course in the G2 block. BIOL/HNRS 222 may not be used independently to fulfill a G2 requirement. 1 hr. seminar. Offered periodically. Prereq: completion of BIOL 221 with a grade of B- or higher and member University Honors College, or 3.35 GPA, or instructor's permission.

BIOL 241: 3 s.h.**Principles of Ecology**

Ecological principles underlying physiological adaptations of organisms to their environment, population dynamics, community analysis and ecosystem studies. Ecological and evolutionary theory emphasized with examples from aquatic and terrestrial habitats. 3 hrs. lec. Offered in fall, spring. Prereq: BIOL 100 or BIOL 101 and MATH 235, 151, 160 or 161. No credit toward BIOL major.

BIOL 254: 4 s.h.**Human Anatomy & Physiology I**

Study of the structure and function of the human body. This first semester of a two-semester sequence deals with the development, histology, gross anatomy, function and pathophysiology of the cutaneous, skeletal, muscular and nervous systems. 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: BIOL 100 or BIOL 101.

BIOL 254H: 4 s.h.**Hon: Human Anat & Phys 1****BIOL 255: 4 s.h.****Human Anatomy & Physiology II**

Study of the structure and function of the human body. This second semester of a two-semester sequence deals with the development, histology, gross anatomy, function and pathophysiology of the endocrine, circulatory, respiratory, digestive, urinary, and reproductive systems. 3 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 254.

BIOL 255H: 4 s.h.**Hon: Human Anat/Phys 2**

BIOL 256: 3 s.h.**Nutrition (G2, W)**

Principles of adequate nutrition including digestion and metabolism of foods; energy, protein, mineral and vitamin needs; environmental and industrial contaminants, additives and carcinogens; dietary treatment for nutritional disorders. 3 hrs. lec. Offered in fall, spring. Prereq: BIOL 100 and ENGL 110. No credit toward BIOL major or minor. No credit given if credit earned for BIOL 352.

BIOL 257: 1 s.h.**Introduction to Allied Health Professions**

A survey of the various disciplines in the allied health field. The course describes the type of training offered by hospitals for students who are planning to major in a health profession and for students who are undecided on a career. 1 hr. lec. Offered in fall.

BIOL 266H: 1 s.h.**Hrs:Adv Princ Cell Biology**

Cellular operations and processes: hormonal control of cell physiology, secretory activities and vesicular trafficking, control of cell division, neu-rotransmission, control of muscle contraction, signal transduction, interrupted genes, cell recognition, etc. Students explore and lead discussions on one of these topics. Completion of both BIOL/HNRS 266 and BIOL 263 earns 5 credits to be counted as one course in the G2 block. BIOL/ HNRS 266 may not be used independently to fulfill a G2 requirement. 1 hr. seminar. Offered periodically. Prereq: completion of BIOL 362 or BIOL 263 with a grade of B- or higher and member of University Honors College, or 3.35 GPA, or instructor's permission.

BIOL 281: 3 s.h.**Behavioral Biology (G2, W)**

Provides an evolutionary and ethological frame of reference for further studies in psychology and animal behavior. Lectures supplemented by demonstrations and A-V media cover animal diversity, nervous systems, sensory reception, communication and behavior. 3 hrs. lec. Offered in fall or spring. Prereq: BIOL 100 or BIOL 101, and ENGL 110. No credit toward BIOL major.

BIOL 290: 3 s.h.**Coastal Marine Biology**

Introduction to marine organisms, marine communities, and the physical, chemical, and biological parameters that shape them; laboratory and field work will emphasize local coastal marine ecosystems. 2 hrs. lec., 3 hrs. lab. Offered in summer at the Chincoteague Bay Field Station. Prereq: BIOL 211 or 1 year of college biology or permission of instructor. No credit given if credit earned for BIOL 291.

BIOL 291: 4 s.h.**Marine Biology (G2)**

Phylogeny, morphology and ecology of marine organisms. Similarities and differences in solutions to problems of life in the marine environment are stressed. 2 hrs. lec., 3 hrs. lab. Weekend field trips. Offered in fall. Prereq: C- or higher in BIOL 211.

BIOL 292: 1 s.h.**Problem Solving in Marine Biol**

An introduction to foundational topics within marine biology, including (1) quantitative reasoning for aquatic biologists, (2) marine geography and mapping, (3) life in a fluid environment, (4) microcosms: marine aquarium systems, (5) scientific illustration, (6) electronic resources in marine biology, (7) internships, coops, jobs, and careers in marine biology, and (8) current topics. Offered in summer. Prereq: placement in college-level mathematics or permission of instructor. No credit given if credit earned for BIOL 291.

BIOL 293: 3 s.h.**Coastal Ornithology**

Students will achieve a strong understanding of a variety of aspects in ornithology with the strongest focus on field techniques, including identification. Material covered will include evolution, anatomy, physiology, behavior and ecology. A portion of the course will include an overview of the avian families of North America, especially those found in coastal regions along the mid-Atlantic seaboard. The field component for this course will include mist netting, census techniques and field identification. Emphasis will be placed on field research and a portion of the course will involve the development of a novel research idea in ornithology.

BIOL 294: 3 s.h.**Coral Reef Ecology**

The focus of this course is to introduce students to the unique aspects of coral reefs, and to provide a working knowledge of reef species and reef ecology. Students will learn basic taxonomy, biology, ecology, and conservation of coral reefs and the organisms associated with this habitat. Laboratory will consist of hands-on field experiences in a coral reef habitat. Students will learn techniques for study and assessment of marine habitats and complete an independent project.

BIOL 295: 3 s.h.**Marine Invertebrates**

The invertebrate phyla with emphasis on development, reproduction, structure, function and classification of selected marine organisms. Laboratory and field experience in collection, preservation and classification of the phyla.

BIOL 296: 3 s.h.**Marine Ecology**

Interrelationships among animals, plants and physical and chemical aspects of the environment will be studied, with stress on adaptations for survival that are unique to the marine environment.

BIOL 300: 3-12 s.h.**Co-Op Ed Experience in Biol**

Co-Op Ed Experience in Biol

BIOL 318: 4 s.h.**Comparative Vertebrate Anatomy**

Functional and comparative anatomy of selected vertebrates with developmental and evolutionary perspectives. Lab will primarily consist of dissection and histological analyses of animals representing various vertebrate classes. Comparisons between animals at the same level, and to see diverse features superimposed upon a common pattern. 3 hrs. lec., 3 hrs. lab. Offered in spring, 2 of 3 years. Prereq: BIOL 211 and BIOL 362 or 263, or permission of instructor.

BIOL 324: 4 s.h.**Plant Biochemistry**

A study of enzymes and pathways involved in plant intermediary as related to plant cell structure, function and plant development. Topics include plant bioenergetics, biosynthesis of plant hormones and elicitor molecules, signal perception and transduction, and secondary metabolites (natural products). 3 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 221 and BIOL 362 or BIOL 263, CHEM 232 or CHEM 235.

BIOL 325: 3 s.h.**Plant Systematics**

A survey of local vascular flora, use of dichotomous keys in identifying plants, distinguishing features of common plant families, principles of plant systematics. Phylogenetic, biosystematic and nomenclatural concepts are considered. 2 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: C- or higher in BIOL 221.

BIOL 327: 3 s.h.**Horticultural Science**

Principles of horticultural science including regulation of plant growth, propagation and breeding, plant nutrition, pruning, plant diseases and special topics related to individual types of plants. Laboratory includes propagation and handling of plants in the greenhouse and field trips. 2 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 221 or permission of instructor.

BIOL 327H: 3 s.h.**Hon: Horticultural Science****BIOL 329: 3 s.h.****Plant-Insect Interactions**

The chemical and biological interactions between plants and insects will be extensively examined with particular emphasis on the chemical ecology of important behaviors such as herbivory, oviposition, and pollination. The chemical communications between plants and insects will be examined regarding how plant-produced chemicals influence, both directly and indirectly, the behaviors of insects. Chemical, anatomical, behavioral, environmental and evolutionary concepts linked to plant-insect interactions will be examined. Unique laboratory experiences will include the design and implementation of an independent research project and the rearing of Lepidoptera to establish research colonies. 2 hrs. lec., 3 hrs. lab. Prereq: BIOL 221, BIOL 211, and either CHEM 231 or CHEM 235 or permission of the instructor.

BIOL 340: 3 s.h.**Prspctv in Environm Awareness (P)**

Interdisciplinary study of current environmental problems and their implications on future habitability of the planet. Physical, biological and social aspects of alterations to ecosystems presented and solutions considered. Course includes lectures, open forums and student participation. Offered in fall and spring. Prereq: COMM 100, ENGL 110, junior status and at least one science (G2 block) and one social science course (G3 block).

BIOL 340H: 3 s.h.**HNRS:Persp in Environ Awareness (P)****BIOL 343: 4 s.h.****Principles of Ecology & Evolution**

The basic concepts and principles of evolution and ecology. Topics include natural selection, genetic variation, macro- and microevolution, population genetics, evolutionary stable strategies, species concepts, biodiversity, extinction, reproductive strategies, population dynamics, the ecological niche concept, predation, competition, mutualism, parasitism, coevolution, biogeography, disturbance ecology, and ecosystem structure and function. 3 hrs. lec., 3 hrs. lab. Offered in fall and spring. Prereq: BIOL 101 or 100 with a grade of C- or higher; B- or higher in BIOL 100 for biology majors; C- or higher in BIOL 211 and BIOL 221; MATH 151, 160 or math equivalent; ENGL 110.

BIOL 343H: 4 s.h.**Hon: Ecology and Evolution****BIOL 344: 3 s.h.****Population Community Ecology**

An intermediate course that will explore population biology, species interactions, trophic structure, community organization, succession, island biogeography and biological diversity at a more advanced level than BIOL 343. The laboratory portion of the course will focus on the use of quantitative methods and manipulative experimental designs to verify fundamental principles and test new hypotheses. 2 hrs. lec., 3 hrs. lab. Offered in fall or spring. Prereq: BIOL 343, MATH 151 or MATH 161, and BIOL 375.

BIOL 346: 3 s.h.**Ornithology (W)**

Ecology, behavior, taxonomy and evolution of birds with emphasis on field studies. 2 hrs. lec., 3 hrs. lab. Weekend field trips. Offered in spring. Prereq: C- or higher in BIOL 211.

BIOL 352: 3 s.h.**Nutritional Science (W)**

Biological and biochemical roles of nutrients for the proper functioning of the human body. Designed for students with a more advanced understanding of chemistry and math. Nutrition concepts will be used to design and evaluate personal diet plans. No credit given if credit earned for BIOL 256. (BIOL 256 does not count for biology majors or minors.) Offered in fall, spring. Prereq: C- or higher in BIOL 362 or BIOL 263, ENGL 110.

BIOL 352H: 3 s.h.**Hon: Nutritional Science (W)****BIOL 356: 5 s.h.****Functional Human Anatomy**

A systemic approach to the study of the structure of the human body with discussion of general function. Course designed primarily for those planning to enter medical or allied health professions. Clinical laboratory experiences related to human anatomy. 3 hrs. lec., 4 hrs. lab. Offered in spring. Prereq: C- or higher in BIOL 211 and BIOL 362 or BIOL 263.

BIOL 361: 4 s.h.**Microbiology**

The structure, physiology and ecology of microorganisms. Symbiotic associations between organisms will be examined in depth. Principles of microbial virulence and immunology are also discussed. Laboratory investigations include the isolation and identification of unknown microorganisms. 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: BIOL101 C- or better or BIOL 100 B- or better; CHEM 112 (Prereq or Coreq) or CHEM 104

BIOL 361H: 4 s.h.**Hon: Microbiology****BIOL 362: 4 s.h.****Cell and Developmental Biology (G2, W)**

Cell structure and function, including cell ultrastructure, methods used in cell biology research, cell motility, signal transduction, cell division, macromolecules, metabolism and the cytomembrane system. Basic concepts in developmental biology are also covered: fertilization, early embryonic cleavage in model systems, cell-cell communication, extracellular matrix and research methods. Examples from developmental biology are employed to illustrate the functions and roles of cellular structures and processes. Laboratory includes isolation of cell components, fertilization and cleavage in sea urchins, microscopy and other techniques used in the study of cell and developmental biology. 3 hrs. lec., 3 hrs. lab. Offered in fall and spring. Prereq: BIOL 101 or 100 with a grade of C- or higher; B- or higher in BIOL 100 for biology majors; ENGL 110; CHEM 112 (Prereq or Coreq).

BIOL 362H: 4 s.h.**HNRS:Cell and Devel Biology**

BIOL 363: 3 s.h.**Medical Microbiology**

An in-depth exploration into the nature of disease-causing microorganisms, with an emphasis on medically important bacteria, viruses and fungi. This course will provide a comprehensive analysis of the structure of microorganisms, epidemiology and pathogenesis of microbial diseases, control of microbes, host responses to infection, vaccination strategies and antimicrobial therapy. 3 hrs. lec. Offered periodically in fall or spring. Prereq: BIOL 362 or BIOL 263.

BIOL 363H: 3 s.h.**Hon: Medical Microbiology****BIOL 364: 4 s.h.****Foundations of Genetics & Molecular Biology**

Concepts and principles essential for a basic understanding of genetics and molecular biology are covered. Topics include Mendelian genetics, gene mapping, molecular structure of the gene, gene expression and regulation, chromatin structure, molecular methodologies, human genome project, population genetics and evolution. 3 hrs. lec., 3 hrs. lab. Offered in fall, spring. Prereq: BIOL 101 or 100 with a grade of C- or higher; B- or higher in BIOL 100 for biology majors; CHEM 112.

BIOL 375: 3 s.h.**Biometry**

Use of statistical techniques in descriptive and experimental biology and the use of mathematical models in describing biological phenomena. 3 hrs. lec. Offered in fall, spring. Prereq: BIOL 100 or BIOL 101, and MATH 151 or higher.

BIOL 375H: 3 s.h.**Hon: Biometry****BIOL 385: 3 s.h.****Principles of Animal Behavior**

Animal groups from protozoa to mammals, studied from an ethologist's point of view. Inheritance, learning, development and motivations will be covered. 2 hrs. lec., 3 hr. labs. Offered in spring. Prereq: BIOL 211 and Junior Standing. BIOL 343 recommended.

BIOL 385H: 3 s.h.**H: Princ of Animal Behavior****BIOL 392: 3 s.h.****Marine Mammals**

The distribution, population size, physiology, evolution, adaptations and ecological relationships of marine mammals will be studied with an emphasis on mammals of the Atlantic Ocean. This course will stress hands-on understanding of marine mammal physiology, behavior, population dynamics and species diversity. Laboratory and field work will include an extended off-campus field trip to facilities holding and/or studying marine mammals of the NE Atlantic Ocean. In addition, the laboratory portion of this course will emphasize data collection in the field, and subsequent analysis and presentation of the data through a required mini-research project.

BIOL 396: 3 s.h.**Ichthyology**

Morphology, anatomy, physiology, systematics and behavior of fishes. Laboratory and field experiences involve collection and study of specimens from nearby field sites. Zoogeography, life histories and speciation also discussed. Prereq: BIOL 211 or 1 year college biology (department override required if BIOL 211 not completed)

BIOL 397: 3 s.h.**Marine Botany**

The taxonomy, ecology, distribution, life histories, physiology and economic status of marine and marine-fringe plants of the Middle Atlantic coast. Covers techniques of collecting, preserving, identifying and cataloging.

BIOL 400: 3-12 s.h.**Co-Op Ed Experience in Biol**

Co-Op Ed Experience in Biol

BIOL 415: 3 s.h.**Mammalogy (W)**

Phylogeny, taxonomy, adaptations, behavior and ecological relationships of mammals. Acquisition of laboratory and field techniques are stressed. 2 hrs. lec., 3 hrs. lab. Weekend field trips. Offered periodically in fall. Prereq: C- or higher in BIOL 211.

BIOL 415H: 3 s.h.**Hon: Mammalogy (W)****BIOL 416: 3 s.h.****Entomology**

Introduction to insects with emphasis on structure and function, behavior, adaptations, ecology, systematics, and economic and medical significance. Collecting, pinning and preservation techniques are covered. Field trips. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: C- or higher in BIOL 211.

BIOL 418: 4 s.h.**Aquatic Entomology**

Aquatic entomology covers topics such as aquatic insect morphology, physiology, ecology, behavior and evolution in a variety of aquatic systems and includes a significant taxonomic component. Each student will be required to make an aquatic insect collection. Prereq: BIOL 211 and BIOL 343 or permission of instructor. 3 hrs lec., 3 hrs. lab.

BIOL 424: 3 s.h.**Mycology**

The taxonomy, morphology, physiology and ecology of fungi. Laboratory activities include surveys of local populations of fleshy fungi, fungal pathogens of plants and soil fungi; physiological studies on growth and reproduction; experimental studies of fungal ecology; and studies of comparative morphology of diverse fungal groups. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: C- or higher in BIOL 221 and BIOL 362 or BIOL 263.

BIOL 435: 3 s.h.**Animal Physiology**

Structure and functions of animals. Independent investigation and recent physiological theories emphasized. 2 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: C- or higher in BIOL 211 and BIOL 362 or BIOL 263; CHEM 112.

BIOL 436: 3 s.h.**Plant Physiology**

Life processes of plants. Water relations, nutrition, translocation, photosynthesis, metabolism, growth, development and reproduction will be considered with particular reference to higher plants. 2 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 221 and BIOL 362 or BIOL 263. CHEM 231 or 235 recommended.

BIOL 437: 3 s.h.**Endocrinology**

The role of hormones in the integration and control of physiological and developmental process is stressed as well as the molecular mechanism of hormone action. 3 hrs. lec. Offered in fall. Prereq: BIOL 362 or BIOL 263.

BIOL 437H: 3 s.h.**Hon: Endocrinology****BIOL 438: 3 s.h.****Neurobiology**

The structure and function of the nervous system. Lectures will cover a broad range of topics, from the molecular to the cognitive. One of the major themes is the relationship between the brain and behavior. 3 hrs. lec. Offered periodically. Prereq: BIOL 362 or BIOL 263.

BIOL 442: 3 s.h.**Wildlife Ecology & Management**

Wildlife management involves protecting and conserving endangered species, increasing the number of game species and controlling pest species. We will discuss how the understanding of wildlife ecology, history, policy and statistics help shape the decisions a wildlife manager makes in the real world. Unique laboratory experiences will include field orienteering, radiotracking, soil and water assessment, vegetative measurements and animal trapping. Students will use these lab experiences to collect and analyze data in the development of a wildlife management plan. 2 hrs. lec., 3 hrs. lab. Prereq: BIOL 375 and BIOL 343.

BIOL 443: 3 s.h.**Conservation Biology**

Population ecology and genetics applied to the conservation of rare, threatened and endangered species. Emphasis on the regulation of abundance, theoretical models of population dynamics, experimental design, sampling approaches and case studies. 2 hrs. lec., 3 hrs. lab. Offered annually (usually in fall). Prereq: C- or higher in BIOL 101, 343.

BIOL 445: 3 s.h.**Aquatic Biology**

Study of the physical and biotic aspects of temporary pools, streams, ponds and rivers. Field trips. 2 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 211, 221, PHYS 132 or 232 desirable.

BIOL 446: 3 s.h.**Ecosystems (W)**

Ecosystem processes including nutrient cycles, energy budgets and trophodynamics are discussed for terrestrial, coastal and marine ecosystems. Processes are discussed for ecosystem types such as those controlled by fire, volcanism, chemosynthetic bacteria, detrital food resources, herbivory and predation. Ecosystems viewed in a global perspective to understand global carbon and nutrient cycles. 3 hrs. lec./discussion. Offered in spring of even years. Prereq: BIOL 343 and ENGL 110.

BIOL 447: 4 s.h.**Chesapeake Bay System (W)**

Study of the effects of human activity on the ecosystems of the Chesapeake Bay System and the role of ecological principles in current restoration efforts. Investigation of how agricultural practices, riparian forests, tidal and nontidal wetlands and urban development affect the input of nutrients and toxins, and the estuarine processes in Chesapeake Bay that cause eutrophication and population declines in fisheries. 2 hrs. lec., 4 hrs. lab/field. Offered in fall. Prereq: BIOL 343 and ENGL 110.

BIOL 448: 3 s.h.**Wetland Ecology and Management**

The investigation of the various biotic and abiotic components of wetland ecosystems, with an emphasis on wetland vegetation, hydrology, and biogeochemical processes. Course content will be a mix of fundamental and applied ecology and will cover topics such as vegetation succession, hydric soil, nutrient cycling, wetland classification and delineation, restoration and management, invasive species, and wetland loss. Prereq: BIOL 343 or permission of instructor.

BIOL 454: 3 s.h.**Immunology**

The development of innate, humoral and cellular immunity to an antigenic stimulus is discussed. Role of these mechanisms in immunogenetics, immunologically mediated disease, immunological protection against infectious agents, use of antibodies in diagnostic tests, and antibody- and cell-based cancer therapy are also considered. 3 hrs. lec. Offered in spring. Prereq: BIOL 362 or 263.

BIOL 454H: 2 s.h.**Hon: Immunology****BIOL 455: 3 s.h.****Cardiopulmonary Physiology**

Cardiovascular and pulmonary function. Covers heart muscle, electro-mechanical properties of the heart, hemodynamics, mechanics of ventilation, gas transport and cardiopulmonary insufficiencies. Laboratory exercises include use of human subjects, animal experimentation and computer simulations. 2 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 211, 362 or 263, 356 and CHEM 231 or 235 for the B.S. in biology; CHEM 103 and CHEM 104 for the B.S. in allied health technology.

BIOL 461H: 3 s.h.**H:General Microbiology****BIOL 462: 4 s.h.****Molecular Biology (W)**

The molecular and macromolecular basis of life. The structure and function of cellular macromolecules, molecular techniques of genetic analysis and the control of cellular processes will be examined in depth. 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: BIOL 362, 364 or 365, and ENGL 110. BIOL 461 or CHEM 326 recommended.

BIOL 463: 4 s.h.**Virology**

Comprehensive investigation of animal viruses. In-depth analysis of virus particles, modes of replication, epidemiology of virus infection, virus host interactions and vaccines. Focus is on medically important viruses such as herpes, influenza, hepatitis and human immunodeficiency viruses. Laboratory exercises include the culture and analysis of viruses in bacterial and mammalian systems. 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: 364 or permission of instructor.

BIOL 465: 3 s.h.**Developmental Biology**

Principles of development and differentiation in animals and plants at the molecular and supramolecular levels of organization. The laboratory includes both experimental and descriptive embryology. 2 hrs. lec., 3 hrs. lab. Offered in spring. BIOL 362 or 263, 364 or 365, or permission of instructor.

BIOL 466: 3 s.h.**Molecular and Cell Techniques**

Application and theory of techniques commonly used in biotechnology, and cell and molecular biological research. Cell culture, plant tissue culture, immunological techniques, cell fusion, radioisotope labeling and detection, centrifugation, microscopic techniques and electrophoretic protocols will be covered in depth. Intended for biology B.S. majors in the molecular biology/biotechnology option. 5 hrs. integrated lecture/lab. Offered in spring. Prereq: BIOL 462. BIOL 461 recommended.

BIOL 467: 3 s.h.**Human Genetics:Analysis/Apps (W)**

Applications of traditional and molecular approaches in understanding the genetic basis for human traits. Gene mapping and identification, cytogenetics and DNA sequence analysis will be covered in depth. Gene function, regulation, mutations and cloning will be explored in the context of human diseases. The Human Genome Project, genetic diagnostics, gene therapy and transgenic organisms will be addressed, along with the genetic basis of cancer, behavior, immunity and development. Genetic counseling and medical genetics will be discussed. 3 hrs. lec./discussion. Offered annually. Prereq: BIOL 364 or 365, ENGL 110.

BIOL 470: 1,2 s.h.**Biology Colloquium**

An opportunity to meet visiting scientists and to discuss their research work. Students will read and discuss, in a seminar format, assigned papers prior to the presentation of the colloquium by the visiting scholar. In addition, they will be expected to participate in discussions with the speaker after the colloquium hosted by the Department of Biology. Offered periodically. Prereq: BIOL 101 or BIOL 100. Other courses indicated by instructor.

BIOL 471: 4 s.h.**Topics In Biology**

Detailed investigations of a topic of current interest. Topic to be announced each time course is offered. Offered periodically. Prereq: Upperclass standing or permission of instructor.

BIOL 471H: 4 s.h.**Hon: Topics in BIOL:****BIOL 472: 1,2 s.h.****Seminar In Biology**

Group discussions. General theme to be determined by professor. Offered annually. Prereq: 16 s.h. of biology and courses indicated by the instructor.

BIOL 472H: 1,2 s.h.**HNRS:Seminar in Biology****BIOL 473: 1 s.h.****Methods/Teaching Biological Issues in the Secondary School**

A seminar for prospective life science teachers to consider methods a teacher might employ to present controversial aspects of biology in intellectually honest, balanced ways which also demonstrate sensitivity to the various moral, ethical and political dilemmas secondary school students may encounter. 1 hr. lecture. Offered annually. Co- or prereq: EDSE 435; required of all B.S.Ed./BIOL students prior to or with EDSE 461.

BIOL 483: 3 s.h.**Applied Ethology**

An introduction to applied animal behavior, including (1) the behavior of companion animals, animals in zoos & aquaria, animals in labs, and animals in agriculture/aquaculture; (2) animal welfare, (3) ethical issues in animal use, (4) methods of training captive animals, and (5) career options and certifications in animal behavior. 3 hrs lecture. Offered periodically. Prereq: PSYC 316 or BIOL 385; PSYC 300 or BIOL 300 or PSYC 495; Senior standing or permission of instructor. Students cannot also earn credit in PSYC 483.

BIOL 484: 3 s.h.**Mech of Animal Behavior**

An exploration of the physiological mechanisms that regulate animal behavior. Nervous and endocrine system physiology are examined and applied to understanding behavioral neuroendocrinology, the integrative study of hormones, brain, and behavior. Research methods in behavioral physiology and the importance of genetic control mechanisms are recurrent topics. A comparative approach is taken, and behavioral physiology is considered in ecological and evolutionary contexts. 3 hrs. lec. Prereq: BIOL 362 or permission of instructor. BIOL 385 recommended.

BIOL 486: 3 s.h.**Behavioral Ecology**

An in-depth examination of the evolution of animal behavior via natural selection with a on the adaptive significance (i.e., fitness consequences) of behaviors involved in foraging, resource defense, cooperation, mating, parental care, and communication. Predator-prey interactions, animal sociality, and approaches to studying behavioral ecology are recurrent topics. Involves a substantial field component where students learn to observe, document, and quantify animal behavior in the wild. 2 hrs. lec., 3 hrs. lab/field. Prereq: C- or higher in BIOL 343. BIOL 385 recommended.

BIOL 489: 1-4 s.h.**Honors Course**

For the definition of honors course and student eligibility, refer to the Special Academic Opportunities section of this catalog.

BIOL 495: 3 s.h.**Biological Oceanography**

Intensive summer lecture and field course teaching the physical, chemical and biological factors controlling the structure and dynamics of marine ecosystems. Classroom instruction focuses on theoretical principles concerning the environmental control of phytoplankton communities by sunlight, nutrients and grazing. The dynamics and complexity of marine food webs including the phytoplankton, zooplankton and upper trophic levels. Laboratory and field instruction focuses on ocean monitoring and sampling from research vessels, biomass determination and identification of key plankton species, measurement of the rates of net and gross primary production using oxygen light-dark bottle experiments, and optical and chemical techniques of determining phytoplankton biomass and species composition. Approximately 40-50% of course time is spent in field. Prerequisites: C- or higher in ESCI 261 and BIOL (211 or 221), or permission of instructor.

BIOL 498: 1-4 s.h.**Independent Study**

Student research on a topic agreed on with faculty supervisor. Applicant for independent study is required to submit a Request for Special Study Assignment form.

BIOL 499: 1-4 s.h.**Departmental Honors**

For the definition of honors course and student eligibility, refer to the Special Academic Opportunities section of this catalog.

RETENTION-IN-THE-MAJOR POLICY

University requirements for retention must be met. In addition, all biology majors must earn grades of C- or higher in all core courses (BIOL 101 Foundations of Biology, BIOL 211 Concepts of Zoology, BIOL 221 Concepts of Botany, BIOL 343 Principles of Ecology & Evolution, BIOL 362 Cell and Developmental Biology, BIOL 364 Foundations of Genetics & Molecular Biology) required for their option. These requirements must be satisfied before completion of 90 Millersville University credit hours. Those who change their major or option, and transfer students

with more than 60 credits, must satisfy these requirements before completing 45 additional credits. Those transferring into the major may substitute BIOL 100 General Biology for BIOL 101 Foundations of Biology if they earn a grade of B- or higher in this course.

For most biology majors, the core would include all six courses. Those in allied health options (medical technology, nuclear medicine technology, optometry, pre-podiatry, respiratory therapy and pre-athletic training), who are not required to complete six core courses, would be required to earn a C- or higher in all of the core courses required for that particular option.

Biology, B.S. - Pre-Medical Professions Option

As with all of its preprofessional programs, Millersville University believes that undergraduate training for medical school should focus on a well-rounded education. Therefore, premedical professional option students are required to take a core foundation of liberal arts courses. That foundation, in combination with the recommended scientific courses, prepares premedical students at Millersville for the rigors of medical education. It also challenges them to develop both their abilities and perceptions so they are primed for the diagnostic and ethical demands of medical practice.

Major in Biology, BS

Code	Title	Hours
CORE COURSES		26
Foundations of Biology - See Appendix 1		
BIOL 211	Concepts of Zoology	
BIOL 221	Concepts of Botany	
BIOL 343	Principles of Ecology & Evolution	
BIOL 362	Cell and Developmental Biology	
BIOL 364	Foundations of Genetics & Molecular Biology	
BIOL 472	Seminar In Biology	
Option in Pre-Medical Professions - See separate block		
Total Hours		26

Appendix 1. Foundations of Biology

Code	Title	Hours
Foundations of Biology C- or Higher		4
BIOL 101	Foundations of Biology	

Concentration in Pre-Medical Professions

Code	Title	Hours
PRE-PROFESSIONAL COURSES - Choose 1 of the following options 1-2:		7-8
Option 1. Human Anatomy Physiology I and II		
BIOL 254	Human Anatomy & Physiology I	
BIOL 255	Human Anatomy & Physiology II	
Option 2. Comp Vert Anatomy and Animal Physiology		
BIOL 318	Comparative Vertebrate Anatomy	
BIOL 435	Animal Physiology	
BIOLOGY ELECTIVES (9-12 to bring total BIOL credits to 43 minimum) - Choose 9 hours from:		9
BIOL 300	Co-Op Ed Experience in Biol	
BIOL 352	Nutritional Science	

BIOL 363	Medical Microbiology
BIOL 415	Mammalogy
BIOL 437	Endocrinology
BIOL 438	Neurobiology
BIOL 454	Immunology
BIOL 361	Microbiology
BIOL 462	Molecular Biology
BIOL 463	Virology
BIOL 465	Developmental Biology
BIOL 467	Human Genetics:Analysis/Apps
BIOL 489	Honors Course
BIOL 498	Independent Study
BIOL 499	Departmental Honors

Students interested in Veterinary School are encouraged to take BIOL 318 435; Students interested in Dental School are encouraged to take BIOL 461, 454, 465; Students interested in Pharmacy programs should take BIOL 461 454; Students interested in Physician Assistant programs should take BIOL 461 454 and an additional 1-3 credits of microbiology courses or independent study.

Total Hours **16-17**

Req Related for Biology, BS

Code	Title	Hours
For Biology Majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.		

CHEMISTRY

A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235. A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students interested in graduate or professional school should take CHEM 231 and 232.

CHEM 111	Introductory Chemistry 1	4
CHEM 112	Introductory Chemistry 2	4
Organic Chemistry I (C- minimum) and II		8
CHEM 231	Organic Chemistry 1	
CHEM 232	Organic Chemistry 2	

CHEM 326	Biochemistry 1	4
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MATHEMATICS FOR PRE-MEDICAL PROFESSIONS

MATH 161	Calculus 1	4
Biometry or Survey of Statistics - Choose 1 of the following:		3
BIOL 375	Biometry	
MATH 235	Survey of Statistics	

PHYSICS

undefined - Choose 1 of the following options 1-2:		8-10
Option 1. Physics with Algebra		
PHYS 131	Physics 1 with Algebra	
PHYS 132	Physics 2 with Algebra	
Option 2. Physics with Calculus		
PHYS 231	Physics 1 with Calculus	
PHYS 232	Physics 2 with Calculus	

RECOMMENDED GENED FOR MCAT

PSYC 100, 227/228, PHIL 100 and SOCY 101 are recommended Gen Ed courses for students planning to take the MCAT

PSYC 100, 227, 228 (G3), PHIL 100 (G1), and SOCY 101 (G3) 0

Total Hours 35-37

Allied Health Technology, B.S. - Pre-Athletic Training Dual-Degree Option

Millersville University's Pre-Athletic Training program puts students on their way to the master's degree now required by the Athletic Training Strategic Alliance. MU collaborates with other graduate-level athletic training education programs in Pennsylvania to allow students to meet that requirement in five years. Following three years of coursework, students can apply to one of the select graduate programs. Upon the completion of your first year in that graduate program, students receive a Bachelor of Science (B.S.) in Allied Health Technology with an option in Pre-Athletic Training from Millersville University. Students who continue this course of study earn a Master of Science (M.S.) in Athletic Training from the affiliated university after a second year of graduate study.

Pre-Athletic Training students also have the option to complete all four years of their bachelor degree at MU before applying to an athletic training graduate program.

Major in Allied Health Tech-Pre-Athletic Trng, BS

Code	Title	Hours
BIOLOGY FOUNDATIONS		
General Biology with B- or higher		3
BIOL 100	General Biology	
REQUIRED BIOLOGY COURSES		
BIOL 254	Human Anatomy & Physiology I	4
BIOL 255	Human Anatomy & Physiology II	4
BIOL 352	Nutritional Science	3
BIOL 362	Cell and Developmental Biology	4
BIOL 364	Foundations of Genetics & Molecular Biology	4
BIOL 375	Biometry	3
BIOL 361	Microbiology	4
REQUIRED WELLNESS SPORT SCIENCES COURSES		
WSSD 311	Resp to Emergen: First Aid CPR	3
WSSD 375	Prevention and Care of Athletic Injuries	3
WSSD 450	Kinesiology and Phys Found of Sport	3
WSSD 452	Nutrition for Performance Enhancement	3
Sport Psychology - Choose 1 of the following:		3
WSSD 485	Perf Enhance:Mntl Trng in Sprt	
WSSD 582	Sport Psychology	
WSSD 491	Exercise Physiology	3
CLINICAL EDUCATION		
Athletic Training Clinical Coursework		7
Upon completion of one year of clinical education in an affiliated Athletic Training Program, up to 40% of the graduate credits will be counted toward the B.S. degree in Allied Health Technology, Pre-Athletic Training option		
Total Hours		54

Req Related for Allied Hlth Tech-Pre-Ath Trng, BS

Code	Title	Hours
For Allied Health Technology majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.		

CHEM 111	Introductory Chemistry 1	4
CHEM 112	Introductory Chemistry 2	4
ORGANIC CHEMISTRY - Choose 1 of the following:		4-8

A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235. A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students planning to attend graduate school or pursue programs in medical, dental, veterinary, pharmacy, physical therapy or physician assistant after their clinical training should take CHEM 231 and 232 for this requirement.

Short Course in Organic Chemistry - See Appendix 1

Organic Chemistry I and Organic Chemistry II - See Appendix 2

Precalculus		4
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MATH 160 Precalculus

Students interested in attending graduate or professional school should also take MATH 161

Physics I with Algebra		4
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PHYS 131 Physics 1 with Algebra

Students interested in attending graduate or professional school should also take PHYS 132

Health Psychology		3
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PSYC 356 Health Psychology

PSYC 100 and 227 or 228 should be taken as G3 electives, they are pre-requisites for PSYC 356. PHIL 100 (G1), SOCY 101 or ANTH 121 (G3), BIOL 207 (D, W) and COMM 461 (P) are also recommended courses to help students fulfill graduate school pre-requisites.

Total Hours		23-27
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Appendix 1. Short Course in Organic Chemistry

Code	Title	Hours
CHEM 235	Organic Chemistry	4

Appendix 2. Organic Chemistry I and Organic Chemistry II

Code	Title	Hours
CHEM 231	Organic Chemistry 1	4
CHEM 232	Organic Chemistry 2	4

Allied Health Technology, B.S. - Respiratory Therapy 2+2 Year Option

Millersville University's Respiratory Therapy program is one of the longest continuously accredited Respiratory Care schools in the nation, with roots in a training course that was first offered in 1963. MU offers two tracks for aspiring respiratory therapists. The 2+2 Respiratory Therapy option within the Allied Health Technology major consists of two years of undergraduate liberal arts and science coursework at Millersville followed by a 19-month professional education and training phase. At the completion of the training, students are awarded a Bachelor of Science (B.S.) in Allied Health Technology degree with an option in Respiratory Therapy.

Major in Allied Hlth Tech-Respiratory Therapy, BS

Code	Title	Hours
BIOLOGY FOUNDATIONS		
General Biology with B- or higher		3

BIOL 100	General Biology	
REQUIRED BIOLOGY COURSES		
BIOL 254	Human Anatomy & Physiology I	4
BIOL 255	Human Anatomy & Physiology II	4
BIOL 352	Nutritional Science	3
BIOL 361	Microbiology	4
REQUIRED RESPIRATORY THERAPY COURSES		
RESP 410	Acute Cardiopulmonary Care	2
RESP 411	Respiratory Care Techniques 1	2
RESP 412	Principles of Aerosol & Gas Therapy	3
RESP 413	Respiratory Assessment & Therapeutics	4
RESP 414	Respiratory Care Techniques 2	3
RESP 415	Technical Aspects of Mechanical Ventilation	3
RESP 417	Respiratory Care Techniques 3	3
RESP 419	Respiratory Care in Alternate Sites	2
RESP 420	Arterial Blood Gas Analysis	3
RESP 421	Physiology of Mechanical Ventilation	2
RESP 422	Pharmacology	2
RESP 423	Infectious Diseases	2
RESP 424	Non-Infectious Diseases	2
RESP 425	Neonatology for the Respiratory Therapist	2
RESP 460	Clinical Practice 1	1
RESP 461	Clinical Practicum 1	2
RESP 462	Clinical Practice 2	1
RESP 463	Clinical Practicum 2	3
RESP 464	Clinical Practicum 3	10
RESP 495	Respiratory Care Research	2
Total Hours		72

Req Related for Allied Hlth Tech-Resp Ther, BS

Code	Title	Hours
For Allied Health Technology majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.		
CHEMISTRY		
Students planning to attend graduate school or pursue programs in medical, dental, veterinary, pharmacy, physical therapy or physician assistant after their clinical training should take CHEM 111, 112, 231 and 232 for this requirement. Others may take only CHEM 103 and CHEM 104.		
General, Organic and Biochemistry		6
CHEM 103	Gen Organic and Biochemistry 1	
CHEM 104	Gen Organic and Biochemistry 2	
Elements of Statistics I		
MATH 130	Elements of Statistics 1	3
Students intereted in attending graduate or professional school should also take MATH 161		
Physics I with Algebra		
PHYS 131	Physics 1 with Algebra	4
Students interested in attending graduate or professional school should also take PHYS 132		
Total Hours		13

Allied Health Technology, B.S. - Medical Technology 3+1 Year Option

In the Medical Technology program at Millersville University, students study for three years at Millersville and then apply to an accredited regional teaching hospital for one year of clinical training. Upon successful completion of the clinical phase of the program, students receive a Bachelor of Science (B.S.) in Biology degree with an option in Medical Technology. MU students are also eligible to sit for the national certification examination upon graduation.

Students hoping to pursue this field can also do so through the Clinical Laboratory Science option within the Allied Health Technology major.

Major in Allied Health Tech-Medical Technology, BS

Code	Title	Hours
Credits Required for Major		
	true	
Minimum Residency 50% of Major Courses		
	true	
Minimum GPA 2.0 for Major		
	true	
BIOL 257	Introduction to Allied Health Professions	1
BIOLOGY FOUNDATIONS		
General Biology with B- or higher		3
BIOL 100	General Biology	
REQUIRED BIOLOGY COURSES (C- or higher)		
BIOL 254	Human Anatomy & Physiology I	4
BIOL 255	Human Anatomy & Physiology II	4
BIOL 362	Cell and Developmental Biology	4
BIOL 364	Foundations of Genetics & Molecular Biology	4
BIOL 454	Immunology	3
BIOL 361	Microbiology	4
Directed Electives		
undefined - Choose 2 of the following:		5-8
BIOL 211	Concepts of Zoology	
BIOL 352	Nutritional Science	
BIOL 363	Medical Microbiology	
BIOL 437	Endocrinology	
BIOL 438	Neurobiology	
BIOL 455	Cardiopulmonary Physiology	
BIOL 462	Molecular Biology	
BIOL 463	Virology	
BIOL 465	Developmental Biology	
BIOL 466	Molecular and Cell Techniques	
BIOL 467	Human Genetics:Analysis/Apps	
RESP 422	Pharmacology	

Med Tech Clinical Coursework

26 credits in Clinical Laboratory Science completed at an affiliate hospital site 26

Total Hours 58-61

Req Related for Allied Healt Tech-Medical Tech, BS

Code	Title	Hours
Required Related Credits		

true

For Allied Health Technology majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.

CHEM 111	Introductory Chemistry 1	4
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CHEM 112	Introductory Chemistry 2	4
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CHEM 326	Biochemistry 1	4
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ORGANIC CHEMISTRY - Choose 1 of the following:		4-8
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A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235. A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students planning to attend graduate school or pursue programs in medical, dental, veterinary, pharmacy, physical therapy or physician assistant after their clinical training should take CHEM 231 and 232 for this requirement.

Short Course in Organic Chemistry - See Appendix 1

Organic Chemistry I and Organic Chemistry II - See Appendix 2

MATH 130	Elements of Statistics 1	3
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Precalculus		4
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MATH 160	Precalculus	
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Students intereted in attending graduate or professional school should also take MATH 161

Physics I with Algebra		4
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PHYS 131	Physics 1 with Algebra	
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Students interested in attending graduate or professional school should also take PHYS 132

Total Hours 27-31

Appendix 1. Short Course in Organic Chemistry

Code	Title	Hours
CHEM 235	Organic Chemistry	4

Appendix 2. Organic Chemistry I and Organic Chemistry II

Code	Title	Hours
CHEM 231	Organic Chemistry 1	4
CHEM 232	Organic Chemistry 2	4

Allied Health Technology, B.S. - Nuclear Medicine Technology 3+1 Year Option

The Nuclear Medicine Technology option within Millersville University's Allied Health major prepares students to become nuclear medicine technologists (NMTs), healthcare professionals who are trained to safely prepare and administer small doses of radioactive compounds

(radiopharmaceuticals) to patients to help detect diseases, injuries or abnormalities. The NMT uses sophisticated radiation-detecting diagnostic equipment to create images of virtually every organ in the body, study body functions (stress test), analyze biological specimens and treat disease (certain cancers).

This 3 + 1 program gives students the benefit of learning in the classroom and in the hospital. At Millersville, courses focus on general education, math and science requirements. The clinical programs provide classroom, laboratory and patient experiences under the supervision of medical instructors. For MU students interning at local hospitals, University housing is available.

Major in Allied Health Tech-Nuclear Med Tech, BS

Code	Title	Hours
BIOL 257	Introduction to Allied Health Professions	1

BIOLOGY FOUNDATIONS

General Biology with B- or higher		3
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BIOL 100	General Biology	
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REQUIRED BIOLOGY COURSES

BIOL 254	Human Anatomy & Physiology I	4
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BIOL 255	Human Anatomy & Physiology II	4
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BIOL 362	Cell and Developmental Biology	4
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BIOL 364	Foundations of Genetics & Molecular Biology	4
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BIOL 454	Immunology	3
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BIOL 361	Microbiology	4
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Directed Electives

undefined - Choose 2 of the following:		5-8
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BIOL 211	Concepts of Zoology	
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BIOL 352	Nutritional Science	
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BIOL 363	Medical Microbiology	
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BIOL 437	Endocrinology	
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BIOL 438	Neurobiology	
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BIOL 455	Cardiopulmonary Physiology	
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BIOL 462	Molecular Biology	
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BIOL 463	Virology	
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BIOL 465	Developmental Biology	
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BIOL 467	Human Genetics:Analysis/Apps	
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RESP 422	Pharmacology	
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Nuclear Med Clinical Coursework

26 credits in Clinical Education at Lancaster General Hospital College of Nursing and Allied Health 26

Total Hours 58-61

Req Related for Allied Hlth Tech-Nuclear Med, BS

Code	Title	Hours
For Allied Health Technology majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.		

CHEM 111	Introductory Chemistry 1	4
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CHEM 112	Introductory Chemistry 2	4
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CHEM 326	Biochemistry 1	4
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ORGANIC CHEMISTRY - Choose 1 of the following:		4-8
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A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235. A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students planning to attend graduate school or pursue programs in medical, dental, veterinary, pharmacy, physical therapy or physician assistant after their clinical training should take CHEM 231 and 232 for this requirement.

Short Course in Organic Chemistry - See Appendix 1

Organic Chemistry I and Organic Chemistry II - See Appendix 2

MATH 130	Elements of Statistics 1	3
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Precalculus		4
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MATH 160	Precalculus	
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Students interested in attending graduate or professional school should also take MATH 161

Physics I with Algebra		4
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PHYS 131	Physics 1 with Algebra	
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Students interested in attending graduate or professional school should also take PHYS 132

Total Hours		27-31
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Appendix 1. Short Course in Organic Chemistry

Code	Title	Hours
CHEM 235	Organic Chemistry	4

Appendix 2. Organic Chemistry I and Organic Chemistry II

Code	Title	Hours
CHEM 231	Organic Chemistry 1	4
CHEM 232	Organic Chemistry 2	4

Allied Health Technology, B.S. - Sports Medicine

The Sports Medicine degree program is for students who envision a future career in healthcare professions such as Athletic Trainer, Physical Therapist, Occupational Therapist, Physician Assistant, or Orthopedic Medicine – a branch of medicine that focuses on the care of the skeletal system. This academic major provides students with the foundational knowledge of the human body, sport performance, and basic injury care. This major also provides students with the prerequisite coursework they will need to become eligible for graduate school.

Major in Allied Health Tech-Sports Medicine, BS

Code	Title	Hours
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BIOLOGY FOUNDATIONS

General Biology with B- or higher		3
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BIOL 100	General Biology	
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REQUIRED BIOLOGY COURSES (C- or higher)

Must earn a C- or higher in all required Biology courses.

BIOL 254	Human Anatomy & Physiology I	4
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BIOL 255	Human Anatomy & Physiology II	4
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BIOL 352	Nutritional Science	3
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BIOL 362	Cell and Developmental Biology	4
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BIOL 364	Foundations of Genetics & Molecular Biology	4
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BIOL 375	Biometry	3
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BIOL 361	Microbiology	4
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REQUIRED WELLNESS SPORT SCIENCES COURSES

WSSD 311	Resp to Emergen: First Aid CPR	3
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WSSD 375	Prevention and Care of Athletic Injuries	3
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WSSD 450	Kinesiology and Phys Found of Sport	3
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WSSD 452	Nutrition for Performance Enhancement	3
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Sport Psychology - Choose 1 of the following:		3
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WSSD 485	Perf Enhance:Mntl Trng in Sprt	
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WSSD 582	Sport Psychology	
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WSSD 491	Exercise Physiology	3
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WSSD 492	Seminar in Sport Science	3
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SPORTS MEDICINE ELECTIVES ¹

undefined - Choose 6 hours from:		6
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BIOL 300	Co-Op Ed Experience in Biol	
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BIOL 454	Immunology	
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BIOL 363	Medical Microbiology	
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BIOL 438	Neurobiology	
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BIOL 463	Virology	
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BIOL 465	Developmental Biology	
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BIOL 498	Independent Study	
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BIOL 489	Honors Course	
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BIOL 499	Departmental Honors	
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WSSD 483	Legal Aspects of Sport	
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WSSD 300	Co-Op Ed Experience in Wssd	
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WSSD 400	Co-Op Ed Experience in Wssd	
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WSSD 498	Ind Stdy.	
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In consultation with your advisor, choose a minimum of 6 credits from the following recommended courses. At least 2 credits must be from Biology (BIOL).

Total Hours		56
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Req Related for Allied Hlth Tech-Sports Med, BS

Code	Title	Hours
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For Allied Health Technology majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.

CHEM 111	Introductory Chemistry 1	4
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CHEM 112	Introductory Chemistry 2	4
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ORGANIC CHEMISTRY - Choose 1 of the following:		4-8
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A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235. A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students planning to attend graduate school or pursue programs in medical, dental, veterinary, pharmacy, or physician assistant after their clinical training should take CHEM 231 and 232 for this requirement.

Short Course in Organic Chemistry - See Appendix 1

Organic Chemistry I and Organic Chemistry II - See Appendix 2

CHEM 326	Biochemistry 1	4
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Precalculus		4
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MATH 160	Precalculus	
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Students interested in attending graduate or professional school should also take MATH 161

PHYSICS - Choose 1 of the following options 1-4:		8-10
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Option 1. Physics with Algebra		
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PHYS 131	Physics 1 with Algebra	
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PHYS 132	Physics 2 with Algebra	
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Option 2. Physics with Calculus	
PHYS 231	Physics 1 with Calculus
PHYS 232	Physics 2 with Calculus
Option 3. Physics 1 with Algebra and 2 with Calc	
PHYS 131	Physics 1 with Algebra
PHYS 232	Physics 2 with Calculus
Option 4. Physics 1 with Calc and 2 with Algebra	
PHYS 132	Physics 2 with Algebra
PHYS 231	Physics 1 with Calculus
Health Psychology	3
PSYC 356	Health Psychology
PSYC 100 and 227 or 228 should be taken as G3 electives, they are pre-requisites for PSYC 356. PHIL 100 (G1), SOCY 101 or ANTH 121 (G3), BIOL 207 (D, W) and COMM 461 (P) are also recommended courses to help students fulfill graduate school pre-requisites.	
Total Hours	31-37

Appendix 1. Short Course in Organic Chemistry

Code	Title	Hours
CHEM 235	Organic Chemistry	4

Appendix 2. Organic Chemistry I and Organic Chemistry II

Code	Title	Hours
CHEM 231	Organic Chemistry 1	4
CHEM 232	Organic Chemistry 2	4

Biology Minor

Students pursuing other degrees at Millersville University looking to expand their understanding and interest in living organisms can opt to minor in Biology. This minor will benefit students by strengthening fundamental concepts, expanding breadth of knowledge, and enhancing depth of knowledge through unique, advanced biology electives. Completing a minor in biology can enhance graduate's employment opportunities in many areas, including but not limited to, Occupational Safety and Health, Disaster Response, Environmental Policy, Education, Science Writing, Scientific Illustration, Data Science, and others.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Biology, B.S.

The B.S. in Biology provides students with a degree path without an "option" or specialization in a particular area of biology. Our goal in this flexible programs is to prepare students broadly in biology so that they can gain immediate employment, or enter graduate school, or start professional study in a school of medicine, veterinary science, dentistry, optometry or podiatry.

Major in Biology, BS

Code	Title	Hours
CORE COURSES		
Foundations of Biology		4
Foundations of Biology C- or Higher - See Appendix 1		
BIOL 211	Concepts of Zoology	4
BIOL 221	Concepts of Botany	4
BIOL 343	Principles of Ecology & Evolution	4
BIOL 362	Cell and Developmental Biology	4
BIOL 364	Foundations of Genetics & Molecular Biology	4
REQUIREMENTS FOR BS BIOLOGY - NO OPTION SELECTED		
In consultation with your advisor, choose additional Biology courses to bring your total Biology courses to 43 credits. 12 credits must be at the 300-level or higher. No more than 3 credits of internship/co-op can count for credits in the major.		
Biology Colloquium or Seminar in Biology - Choose 1 of the following:		2
BIOL 470	Biology Colloquium	
BIOL 472	Seminar In Biology	
Electives - 300 level or higher - Choose 12 hours from:		12
Any 3-level BIOL course(s)		
Any 4-level BIOL course(s)		
Any 5-level BIOL course(s)		
Note: This requirement may not be satisfied with BIOL 340, BIOL 362, BIOL 343, BIOL 364, or BIOL 390.		
Electives - Choose 3 hours from:		3
Any 2-level BIOL course(s)		
Any 3-level BIOL course(s)		
Any 4-level BIOL course(s)		
Any 5-level BIOL course(s)		
Note: This requirement may not be satisfied with BIOL 204, BIOL 205, BIOL 207, BIOL 208, BIOL 247, BIOL 281, BIOL 256, BIOL 340, or BIOL 390.		
Total Hours		41

Appendix 1. Foundations of Biology C- or Higher

Code	Title	Hours
BIOL 101	Foundations of Biology	4

Req Related for Biology, BS

Code	Title	Hours
For Biology Majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.		
CHEMISTRY		
A C- or higher in CHEM 111, 112, and 231 is a pre-requisite for CHEM 232.		
CHEM 111	Introductory Chemistry 1	4

CHEM 112	Introductory Chemistry 2	4
CHEM 231	Organic Chemistry 1 (C- minimum)	4
CHEM 232	Organic Chemistry 2	4
CHEM 326	Biochemistry 1	4

MATHEMATICS AND COMPUTER SCIENCE

Calculus I or Honors Calculus - Choose 1 of the following:		4-5
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	

Add Mathematics or Computer Science Electives - Choose 1 class from:

Any CSCI 140-599 course(s)		
Any MATH 160-599 course(s)		
Note: This requirement may not be satisfied with CSCI 101, CSCI 111, or CSCI 121.		

PHYSICS

undefined - Choose 1 of the following options 1-2:		8-10
Option 1. Physics with Algebra		
PHYS 131	Physics 1 with Algebra	
PHYS 132	Physics 2 with Algebra	
Option 2. Physics with Calculus		
PHYS 231	Physics 1 with Calculus	
PHYS 232	Physics 2 with Calculus	

Total Hours **32-35**

Biology, B.S. - Environmental Biology Option

Designed to prepare students either to work as environmental managers or to pursue graduate study this program gives students a strong background in basic biology and ecology. Public service or private employment in conservation, environmental management, planning and consulting, pollution abatement, public health, natural resource management, aquatic biology, and wildlife managers are some of the career areas available to students in this program. Many students in this program complete co-ops (<https://www.millersville.edu/elcm/>) and/or independent research projects as part of their education.

Biology, B.S. - Respiratory Therapy Option

The Respiratory Therapy program consists of three years study as a Biology/Respiratory Therapy major or two years study as an Allied Health Technology/Respiratory Therapy major at Millersville followed by a 19-month clinical training phase cosponsored by a regional hospital. At the end of their studies students are awarded the BS in Biology, Respiratory Therapy option or Allied Health Technology, Respiratory Therapy option. They are eligible to sit for the entry-level national certification examination, and when that is passed, the Clinical Simulation Exam. Persons already holding baccalaureate degrees may apply for admission into the clinical phase of the program as certification students.

Affiliated Faculty:

Ahmad, Masood; Medical Director
M.D., F.Sc., Pre-Medicine, Government College, Gujranwala, Pakistan, 1989; M.B., B.S., Nishtar Medical College, Multan, Pakistan, 1996. Board

Certifications: Internal Medicine, 2004; Critical Care Medicine, 2007; Pulmonary Disease, 2010; Sleep Medicine, 2011

Chrissos, Elaine; Program Director

B.S.Ed., Millersville University, 1980; Millersville University Program in Respiratory Therapy, 1988; RRT, 1989, MS Northeastern University, 2022

Harleman, Jarrod; Director of Clinical Education

B.S., Millersville University Program in Respiratory Therapy, 2010; M.S., Misericordia University, 2016; RRT, 2011. Neonatal- Pediatric Specialist, 2011

Major in Biology, BS

Code	Title	Hours
CORE COURSES		12
Foundations of Biology - See Appendix 1		
BIOL 362	Cell and Developmental Biology	
BIOL 364	Foundations of Genetics & Molecular Biology	
Option in Respiratory Therapy - See separate block		
Total Hours		12

Appendix 1. Foundations of Biology

Code	Title	Hours
Foundations of Biology C- or Higher		4
BIOL 101	Foundations of Biology	

Concentration in Respiratory Therapy

Code	Title	Hours
REQUIRED RESPIRATORY THERAPY COURSES		
BIOL 257	Introduction to Allied Health Professions	1
BIOL 254	Human Anatomy & Physiology I (C- minimum)	4
BIOL 255	Human Anatomy & Physiology II (C- minimum)	4
BIOL 361	Microbiology (C- minimum)	4
RESPIRATORY THERAPY PROFESSIONAL PHASE I		
After completion of the Phase I coursework, the student may graduate with a B.S. degree in Biology, Respiratory Therapy; however, the graduate must complete the Phase II coursework in order to be employed and certified as a respiratory therapist.		
RESP 410	Acute Cardiopulmonary Care	2
RESP 411	Respiratory Care Techniques 1	2
RESP 412	Principles of Aerosol & Gas Therapy	3
RESP 413	Respiratory Assessment & Therapeutics	4
RESP 414	Respiratory Care Techniques 2	3
RESP 419	Respiratory Care in Alternate Sites	2
RESP 420	Arterial Blood Gas Analysis	3
RESP 421	Physiology of Mechanical Ventilation	2
RESP 422	Pharmacology	2
RESP 423	Infectious Diseases	2
RESP 424	Non-Infectious Diseases	2
RESP 425	Neonatology for the Respiratory Therapist	2
RESP 460	Clinical Practice 1	1
RESP 461	Clinical Practicum 1	2

RESPIRATORY THERAPY PROFESSIONAL PHASE II

Following completion of Phase II coursework, the student will receive a respiratory therapy certificate, which will permit them to seek employment as a respiratory therapist and qualifies them to take the certification exam.

RESP 415	Technical Aspects of Mechanical Ventilation	3
RESP 417	Respiratory Care Techniques 3	3
RESP 462	Clinical Practice 2	1
RESP 463	Clinical Practicum 2	3
RESP 464	Clinical Practicum 3	10
RESP 495	Respiratory Care Research	2
Total Hours		67

Req Related for Biology, BS

Code **Title** **Hours**

For Biology Majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.

CHEMISTRY

A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235. A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students interested in graduate or professional school should take CHEM 231 and 232.

CHEM 111	Introductory Chemistry 1	4
CHEM 112	Introductory Chemistry 2	4
Organic Chemistry - Choose 1 of the following options 1-2:		4-8
Option 1. Organic Chemistry I and II		
CHEM 231	Organic Chemistry 1	
CHEM 232	Organic Chemistry 2	
Option 2. Short Course in Organic Chemistry		
CHEM 235	Organic Chemistry	
CHEM 326	Biochemistry 1	4

MATHEMATICS FOR PRE-ATHL, RESP THER, OR PPOD

Calculus I or Honors Calculus - Choose 1 of the following:		4-5
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	

PHYSICS

Students who might be interested in attending graduate or professional school after completing their professional phase should also take PHYS 132 or 232.

Physics 1 with Algebra or Calculus (C- minimum) - Choose 1 of the following:		4-5
PHYS 131	Physics 1 with Algebra	
PHYS 231	Physics 1 with Calculus	

Total Hours **24-30**

Biology, B.S. - Animal Behavior Option

The Animal Behavior option in Biology is designed for students who wish to specialize in the study of animal behavior, the scientific study of the causes, functions, development, and evolutionary history of behavior. Students will be prepared for careers in education, whether in a classroom or at an aquarium or zoological garden; research, whether sponsored by companies, universities or the government; animal-human

interactions, including both pet and livestock management; and animal conservation biology.

Biology, B.S. - Marine Biology Option

The Marine Biology option prepares students for careers in marine biology and graduate study. Our affiliation with the Marine Science Consortium and its field station at Wallops Island, Virginia gives students hands-on experience and training with marine organisms and environments. Students in this program take several three-week long intensive courses during the summer at the field station.

Major in Biology, BS

Code	Title	Hours
CORE COURSES		24
Foundations of Biology - See Appendix 1		
BIOL 211	Concepts of Zoology	
BIOL 221	Concepts of Botany	
BIOL 343	Principles of Ecology & Evolution	
BIOL 362	Cell and Developmental Biology	
BIOL 364	Foundations of Genetics & Molecular Biology	
Option in Marine Biology - See separate block		
Total Hours		24

Appendix 1. Foundations of Biology

Code	Title	Hours
Foundations of Biology C- or Higher		4
BIOL 101	Foundations of Biology	

Concentration in Marine Biology

Code **Title** **Hours**

Students majoring in Marine Biology are encouraged to consider completing a minor in Oceanography and, in consultation with their advisor, to take further courses in mathematics.

REQUIRED MARINE BIOLOGY COURSES

Required Marine Biology (4 credits) - Choose 1 of the following options 1-2:		4
Option 1. Marine Biology		
BIOL 291	Marine Biology	
Option 2. Coastal Marine Biology and Problem Solving Marine Biol		
BIOL 290	Coastal Marine Biology	
BIOL 292	Problem Solving in Marine Biol	
BIOL 295	Marine Invertebrates	3
BIOL 375	Biometry	3
BIOL 396	Ichthyology	3
Biological Oceanography - Choose 1 of the following:		3
BIOL 495	Biological Oceanography	
ESCI 465	Biological Oceanography	
Seminar in Marine Biology		2
BIOL 472	Seminar In Biology	

ELECTIVES

undefined - Choose 5 hours from:		5
Any 3-level BIOL course(s)		
Any 4-level BIOL course(s)		

Note: This requirement may not be satisfied with BIOL 340 or BIOL 390.

In consultation with your advisor, choose additional courses at the 300-level or higher and approved for Biology majors to bring total credits in major to the minimum 47.

MARINE SCIENCE FIELD COURSES

undefined - Choose 2 classes totaling at least 6 hours from: 6

BIOL 293 Coastal Ornithology

BIOL 294 Coral Reef Ecology

BIOL 295 Marine Invertebrates

BIOL 296 Marine Ecology

BIOL 392 Marine Mammals

BIOL 397 Marine Botany

Any course(s) with DWLOCATION = W

At least 2 courses (6 credits) of a student's biology courses (required marine biology or biology electives) must be taken at a marine field site.

Total Hours 29

Req Related for Biology, BS

Code	Title	Hours
For Biology Majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.		

CHEMISTRY AND EARTH SCIENCES

A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235.

A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students interested in graduate or professional school should take CHEM 231 and 232.

Intoduction to Oceanography 4

ESCI 261 Introduction to Oceanography

CHEM 111 Introductory Chemistry 1 4

CHEM 112 Introductory Chemistry 2 4

Organic Chemistry - Choose 1 of the following options 1-2: 4-8

Option 1. Organic Chemistry I and II

CHEM 231 Organic Chemistry 1

CHEM 232 Organic Chemistry 2

Option 2. Short Course in Organic Chemistry

CHEM 235 Organic Chemistry

Environmental Chem or Chem Oceanography - Choose 1 of the following: 3-4

CHEM 375 Environmental Chemistry

ESCI 363 Chemical Oceanography

MATHEMATICS FOR MARINE BIOLOGY

Calculus for Mgt, Calculus I or Honors Calculus - Choose 1 of the following: 4-5

MATH 151 Calculus for Management

MATH 161 Calculus 1

MATH 163H Honors Calculus 1

PHYSICS

undefined - Choose 1 of the following options 1-2: 8-10

Option 1. Physics with Algebra

PHYS 131 Physics 1 with Algebra

PHYS 132 Physics 2 with Algebra

Option 2. Physics with Calculus

PHYS 231 Physics 1 with Calculus

PHYS 232 Physics 2 with Calculus

Total Hours 31-39

Biology, B.S. - Medical Technology Option

In this program, students study for three years at Millersville and then apply for admission to an accredited regional teaching hospital for one year of clinical training in medical technology. Then students are awarded a BS in Biology, Medical Technology Option. After completing the required work, students may sit for a national examination which, if successfully completed, confers board certification in medical technology.

Affiliated Faculty:

Beitz, Edwin; Program Director, Medical Laboratory Science Program, WellSpan/York Hospital
 MT(HHS), 1988; B.S., Lycoming College, 1990; M.H.A., St. Francis University, 2001; MLS(ASCP), 2004

Hurt, Stanley D.; Medical Advisor, Medical Laboratory Science Program, WellSpan/York Hospital
 B.A., University of Maryland, 1996; M.D., University of Pittsburgh School of Medicine, 2002; AP/CP, 2007

Kentzel, Ethan; Program Director, Medical Laboratory Science Program, Reading Hospital School of Health Sciences
 MLS ASCP, B.S., Slippery Rock University, 2014, M.S., Drexel University, 2022

Miele, Mary Beth; Program Director, Medical Laboratory Science Program, Penn State Health
 PhD, MLS(ASCP)CM, RM(NRCM)

Soost, Sherry; Program Director, Medical Laboratory Science Program, Pennsylvania College of Health Sciences
 MSHS, MT(ASCP), CHO(NRCC)

Major in Biology, BS

Code	Title	Hours
CORE COURSES		16
Foundations of Biology - See Appendix 1		
BIOL 211	Concepts of Zoology	
BIOL 362	Cell and Developmental Biology	
BIOL 364	Foundations of Genetics & Molecular Biology	
Option in Medical Technology - See separate block		
Total Hours		16

Appendix 1. Foundations of Biology

Code	Title	Hours
Foundations of Biology C- or Higher		4
BIOL 101	Foundations of Biology	

Concentration in Medical Technology

Code	Title	Hours
REQUIRED MEDICAL TECH COURSES		8
BIOL 257	Introduction to Allied Health Professions	
BIOL 454	Immunology	

BIOL 361	Microbiology	
ELECTIVES - Choose 8 hours from:		8
BIOL 254	Human Anatomy & Physiology I	
BIOL 255	Human Anatomy & Physiology II	
BIOL 318	Comparative Vertebrate Anatomy	
BIOL 352	Nutritional Science	
BIOL 356	Functional Human Anatomy	
BIOL 363	Medical Microbiology	
BIOL 375	Biometry	
BIOL 435	Animal Physiology	
BIOL 437	Endocrinology	
BIOL 438	Neurobiology	
BIOL 462	Molecular Biology	
BIOL 463	Virology	
BIOL 465	Developmental Biology	
BIOL 466	Molecular and Cell Techniques	
BIOL 356 or 254 255; and BIOL 375 are strongly recommended.		
CLINICAL LAB SCIENCE EDUCATION		30
Upon completion of one year of Clinical Laboratory Science education at an affiliated hospital site, 30 credit hours will be credited here.		
Total Hours		46

Req Related for Biology, BS

Code	Title	Hours
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For Biology Majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.

CHEMISTRY

A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235. A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students interested in graduate or professional school should take CHEM 231 and 232.

CHEM 111	Introductory Chemistry 1	4
CHEM 112	Introductory Chemistry 2	4
Organic Chemistry - Choose 1 of the following options 1-2:		4-8
Option 1. Organic Chemistry I and II		
CHEM 231	Organic Chemistry 1	
CHEM 232	Organic Chemistry 2	
Option 2. Short Course in Organic Chemistry		
CHEM 235	Organic Chemistry	
CHEM 326	Biochemistry 1	4

MATHEMATICS FOR MEDICAL TECH OR NUCLEAR MED

Some clinical sites require a course in statistics such as MATH 130, MATH 235, or BIOL 375. Students interested in graduate or professional school should take MATH 161.

Precalculus, Calculus I or Honors Calculus - Choose 1 of the following:		4-5
MATH 160	Precalculus	
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	

PHYSICS

Students interested in graduate or professional school should also take PHYS 132.

PHYS 131	Physics 1 with Algebra	4
Total Hours		24-29

Biology, B.S. - Molecular Biology/Biotechnology Option

Designed to prepare students both for careers in the fast-growing industry associated with molecular biology and for admission into graduate and professional schools, this program allows students to concentrate in molecular and cellular biology while obtaining a broad background in biology and in the liberal arts. Students in this program complete advanced courses in biochemistry and in molecular and cellular techniques; many take advantage of opportunities to complete independent research projects in genetics, developmental biology, virology, cell and molecular biology, or endocrinology.

Major in Biology, BS

Code	Title	Hours
CORE COURSES		24
Foundations of Biology - See Appendix 1		
BIOL 211	Concepts of Zoology	
BIOL 221	Concepts of Botany	
BIOL 343	Principles of Ecology & Evolution	
BIOL 362	Cell and Developmental Biology	
BIOL 364	Foundations of Genetics & Molecular Biology	
Option in Molecular Biology - See separate block		
Total Hours		24

Appendix 1. Foundations of Biology

Code	Title	Hours
Foundations of Biology C- or Higher		4
BIOL 101	Foundations of Biology	

Concentration in Molecular Biology

Code	Title	Hours
REQUIRED MOLECULAR/BIO TECHNOLOGY COURSES		
BIOL 462	Molecular Biology	4
BIOL 466	Molecular and Cell Techniques	3
Seminar in Molecular Biology		2
BIOL 472	Seminar In Biology	
ELECTIVES		
undefined - Choose 6 hours from:		6
Any 3-level BIOL course(s)		
Any 4-level BIOL course(s)		
Any 5-level BIOL course(s)		
Note: This requirement may not be satisfied with BIOL 340, BIOL 390, or BIOL 324.		
BIOL 463, 465, and 467 are recommended.		
Total Hours		15

Req Related for Biology, BS

Code	Title	Hours
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For Biology Majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.

CHEMISTRY

A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235.
A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students interested in graduate or professional school should take CHEM 231 and 232.

CHEM 111	Introductory Chemistry 1	4
CHEM 112	Introductory Chemistry 2	4
Organic Chemistry I (C- minimum) and II		8
CHEM 231	Organic Chemistry 1	
CHEM 232	Organic Chemistry 2	
CHEM 326	Biochemistry 1	4
Plant Biochemistry or Biochemistry II - Choose 1 of the following:		4
BIOL 324	Plant Biochemistry	
CHEM 324	Plant Biochemistry	
CHEM 327	Biochemistry 2	

MATHEMATICS AND COMPUTER SCIENCE

Calculus I or Honors Calculus - Choose 1 of the following:		4-5
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	

Addl Mathematics or Computer Science Electives - Choose 1 class from:

Any CSCI 140-599 course(s)

Any MATH 160-599 course(s)

Note: This requirement may not be satisfied with CSCI 101, CSCI 111, or CSCI 121.

PHYSICS

undefined - Choose 1 of the following options 1-2:		8-10
Option 1. Physics with Algebra		
PHYS 131	Physics 1 with Algebra	
PHYS 132	Physics 2 with Algebra	
Option 2. Physics with Calculus		
PHYS 231	Physics 1 with Calculus	
PHYS 232	Physics 2 with Calculus	

Total Hours **36-39**

Biology, B.S. - Nuclear Medicine Technology Option

To earn a B.S. in Biology with the Nuclear Medicine Technology Option, students must complete three years of study at Millersville, then apply for admission to Lancaster Institute for Health Education for one year's training at a regional hospital. After completing the degree, students are prepared to take a national examination which, if passed, grants board certification in nuclear medicine technology.

Affiliated Faculty:

Bakel, Joanne; Clinical Coordinator-Radiologic Science Program
Penn State University

Baranowski, Jarrod; Clinical Supervisor
B.S., Millersville University, 2000; CNMT, 2000; Lancaster General Hospital Noninvasive Cardiology

Crincoli, Jonathan; CNMT, NMTCB(CT), PET
Fern Hill Medical Campus

Dreach, Heath Tanner; PharmD
Cardinal Health

Glenn, Jaime; Clinical Supervisor, Meritus Medical Center/Diagnostic Imaging Services
A.S., Hagerstown Community College; ARRT(R), 2003; Pennsylvania College of Health Sciences, CNMT, 2004

Greth, Madeline; Program Director, Nuclear Medicine Program, Pennsylvania College of Health Sciences
B.S., Millersville University, 2012; CNMT, 2012, RT(CT), 2015, PET, 2018, NCT, 2020

Grove Shaffer, Jennifer; Clinical Instructor–Nuclear Medicine, Hershey Medical Center
B.S., York College of Pennsylvania/Lancaster Institute of Health Education, CNMT, 1998

Hansell, Amanda; Clinical Supervisor, WellSpan Good Samaritan Hospital
B.S., Pennsylvania College of Health Sciences; CNMT, 2010

Havanas, Olga; Clinical Supervisor, Wellspan York Hospital
B.A., York College/Lancaster General College of Health Sciences, 2018; CNMT, 2018

Hoffert, Kathleen, CNMT, RT(N)
B.S., Cedar Crest College; ARRT(N), 1986; CNMT, 1986

Ingstad, Scott, PharmD, BCNP, Pharmacy Manager
Cardinal Health

Kelkis, David; Program Director, Nuclear Medicine Technology, The Johns Hopkins Hospital Schools of Medical Imaging
BS, CNMT, NMTCB(CT), RT(N)(CT), B.S. University of Scranton, 2022, Hopkins' Schools of Medical Imaging, 2015,

Lazarus, Monica, CNMT, RT(N), Network Manager, Nuclear Medicine
St. Luke's University Health Network

Mancini, Paula; Adjunct Faculty, Nuclear Medicine Technology Program, Pennsylvania College of Health Sciences
B.S., Millersville University; M.H.A., The Pennsylvania State University, 2002; ARRT(N), 1987; CNMT, 1987.

Meley, Jessica; Clinical Supervisor, Hershey Medical Center
B.S., Millersville University/Lancaster General College of Health Sciences, 2004; CNMT, 2004,

Miles, Constance E.; Clinical Supervisor, Penn Medicine/Lancaster General Hospital
B.S., Millersville University, 1994; CNMT, 1994.

Poulton, Bethany; Clinical Supervisor, Penn Medicine Chester County Hospital
B.S., Thomas Jefferson University, 2004; CNMT, 2004,

Satre, Susan; Clinical Supervisor, St. Luke's Health Network
B.S., Lyndon University, 1984; CNMT, 1995, RT(N), 1995, PET, 2004,

Shaffer, Jennifer; Clinical Instructor–Nuclear Medicine, WellSpan York Hospital
B.S., York College of Pennsylvania/Lancaster Institute of Health Education, CNMT, 1998;

Villanti, Alison; CNMT, RT (N) (CT), MHA

Fern Hill Medical Campus

Biology, B.S. - Optometry Option

This affiliated Optometry degree program is for students interested in pursuing a medical profession focusing on eye/vision health. Students in this program complete the first three years of Pre-Optometry study at Millersville by following a broad, interdisciplinary approach to general biology studies. Those who meet the admissions standards of the Pennsylvania College of Optometry (PCO) are eligible to apply for admission. After completion of the first year of study at PCO, the successful Millersville student is awarded the BS in Biology. After completing the PCO four-year program of study students then are awarded the Doctor of Optometry degree from PCO.

Biology, B.S. - Plant Sciences Option

This option is designed for students who wish to specialize in the study of plants in preparation for graduate study or for careers in plant sciences such as plant propagation, genetic plant engineering, horticulture, forestry, agriculture, plant ecology or the floral industry.

Major in Biology, BS

Code	Title	Hours
CORE COURSES		26
Foundations of Biology - See Appendix 1		
BIOL 211	Concepts of Zoology	
BIOL 221	Concepts of Botany	
BIOL 343	Principles of Ecology & Evolution	
BIOL 362	Cell and Developmental Biology	
BIOL 364	Foundations of Genetics & Molecular Biology	
BIOL 472	Seminar In Biology	
PRACTICAL EXPERIENCE - Choose 1 of the following:		4-15
BIOL 300	Co-Op Ed Experience in Biol	
BIOL 498	Independent Study	
BIOL 489	Honors Course	
BIOL 499	Departmental Honors	
Biology majors must earn grades of C- (C minus) or higher in all core courses.		
Option in Plant Sciences - See separate block		
Total Hours		30-41

Appendix 1. Foundations of Biology

Code	Title	Hours
Foundations of Biology C- or Higher		4
BIOL 101	Foundations of Biology	

Concentration in Plant Sciences

In addition to Biology Core Courses, the Plant Sciences Concentration requires completion of a course sequence in Botany, Horticultural Science, Plant Biotech and Molecular, or Plant Ecology and the Environment in order to complete the required 52 credits for major.

UNDECLARED TRACK - DEFAULT TO BOTANY COURSE SEQUENCE

In addition to Biology Core Courses, the Plant Sciences Concentration requires completion of a course sequence in Botany, Horticultural Science, Plant Biotech and Molecular, or Plant Ecology and the Environment in order to complete the required 52 credits for major. You have not selected a track, so have been placed into the Botany track as a default. Click here to Access the Academic Program Change Request to declare your track.

Advanced Plant Science Electives - Choose 3 of the following:	9
BIOL 325	Plant Systematics
BIOL 327	Horticultural Science
BIOL 329	Plant-Insect Interactions
BIOL 424	Mycology
Biochemistry - Choose 1 of the following:	4
BIOL 324	Plant Biochemistry
CHEM 326	Biochemistry 1
Biometry (BIOL 375 recommended) - Choose 1 of the following:	3-4
BIOL 375	Biometry
MATH 235	Survey of Statistics
PSYC 211	Principles of Statistics and Experimental Design 1
Biology Electives - Choose 7 hours from:	7
Any 3-level BIOL course(s)	
Any 4-level BIOL course(s)	
Total Hours	23-24

Req Related for Biology, BS

Code **Title** **Hours**

For Biology Majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.

CHEMISTRY

A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235. A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students interested in graduate or professional school should take CHEM 231 and 232.

CHEM 111	Introductory Chemistry 1	4
CHEM 112	Introductory Chemistry 2	4
Organic Chemistry - Choose 1 of the following options 1-2:	4-8	
Option 1. Short-sequence (recommended)		
CHEM 235	Organic Chemistry	
Option 2. Long-sequence		
CHEM 231	Organic Chemistry 1	
CHEM 232	Organic Chemistry 2	

COMPUTATIONAL

Calculus (MATH 151 recommended) - Choose 1 of the following:	4-5
MATH 151	Calculus for Management
MATH 161	Calculus 1
MATH 163H	Honors Calculus 1

PHYSICS

undefined - Choose 1 of the following options 1-2:	8-10
Option 1. Physics with Algebra	
PHYS 131	Physics 1 with Algebra
PHYS 132	Physics 2 with Algebra
Option 2. Physics with Calculus	
PHYS 231	Physics 1 with Calculus

PHYS 232	Physics 2 with Calculus	
Total Hours		24-31

Biology, B.S. - Pre-Podiatry Option

Students interested in pursuing a medical career focusing on the foot and ankle should consider the Pre-Podiatry degree program. This affiliated program between Millersville and the Temple University School of Podiatric Medicine allows Millersville students to transfer to the professional school after satisfactorily completing three years at Millersville. While at Millersville University, students will follow a broad, interdisciplinary approach to general biology studies. After successful completion of the basic science courses at Temple the student is awarded a BS in Biology from Millersville. Each year, three spaces for admission to the podiatric school are reserved for Millersville students. After four years of successful study at the podiatric school the student earns a Doctor of Podiatric Medicine degree from Temple University.

Major in Biology, BS

Code	Title	Hours
CORE COURSES		16
Foundations of Biology - See Appendix 1		
BIOL 211	Concepts of Zoology	
BIOL 362	Cell and Developmental Biology	
BIOL 364	Foundations of Genetics & Molecular Biology	
Option in Pre-Podiatry - See separate block		
Total Hours		16

Appendix 1. Foundations of Biology

Code	Title	Hours
Foundations of Biology C- or Higher		4
BIOL 101	Foundations of Biology	

Concentration in Pre-Podiatry

Code	Title	Hours
REQUIRED PRE-PODIATRY COURSES		9
BIOL 257	Introduction to Allied Health Professions	
BIOL 356	Functional Human Anatomy	
BIOL 435	Animal Physiology	
PODIATRY CLINICAL EDUCATION		24
Upon completion of one year at Temple University College of Podiatric Medicine 24 credit hours will be credited toward the B.S. degree in Biology with the Pre-podiatry option.		
Total Hours		33

Req Related for Biology, BS

Code	Title	Hours
For Biology Majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.		

CHEMISTRY

A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235. A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students interested in graduate or professional school should take CHEM 231 and 232.

CHEM 111	Introductory Chemistry 1	4
CHEM 112	Introductory Chemistry 2	4

Organic Chemistry I (C- minimum) and II		8
CHEM 231	Organic Chemistry 1	
CHEM 232	Organic Chemistry 2	
CHEM 326	Biochemistry 1	4
MATHEMATICS FOR PRE-ATHL, RESP THER, OR PPOD		
Calculus I or Honors Calculus - Choose 1 of the following:		4-5
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	
PHYSICS		
undefined - Choose 1 of the following options 1-2:		8-10
Option 1. Physics with Algebra		
PHYS 131	Physics 1 with Algebra	
PHYS 132	Physics 2 with Algebra	
Option 2. Physics with Calculus		
PHYS 231	Physics 1 with Calculus	
PHYS 232	Physics 2 with Calculus	
Total Hours		32-35

Biology, B.S.Ed.

Traditionally one of the strengths at Millersville, this program prepares students to be teaching biologists. Our goal is graduates who are highly competent biologist who are also highly effective in teaching biology at the secondary school level. The four-year program includes broad training in the physical and biological sciences and extensive coursework in professional education. Students who already hold baccalaureate pedigrees may also apply to be Biology certification students.

Major in Biology, BSE

Code	Title	Hours
BIOLOGY FOUNDATIONS		
Foundations of Biology with C- or higher		4
BIOL 101	Foundations of Biology	
REQUIRED BIOLOGY COURSES		
Biology majors must earn grades of C- (C minus) or higher in BIOL 101, 211, 221, 343, 362 and 364.		
BIOL 211	Concepts of Zoology	4
BIOL 221	Concepts of Botany	4
BIOL 343	Principles of Ecology & Evolution	4
BIOL 362	Cell and Developmental Biology	4
BIOL 364	Foundations of Genetics & Molecular Biology	4
BIOL 375	Biometry	3
BIOL 473	Methods/Teaching Biological Issues in the Secondary School	1
ELECTIVES		
undefined - Choose 4 hours from:		4
Any BIOL course(s)		
Note: This requirement may not be satisfied with BIOL 100, BIOL 204, BIOL 205, BIOL 207, BIOL 208, BIOL 247, BIOL 281, or BIOL 340.		
Total Hours		32

Professional Education

Code	Title	Hours
EDUCATIONAL FOUNDATIONS		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
REQUIRED EDUCATION COURSES		
EDSE 321	Issues in Secondary Education	3
EDFN 330	Instructional Technology, Design & Assessment	3
EDSE 435	Teaching of Science in Secondary Schools	3
ACCOMMODATIONS AND ADAPTATIONS		
EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3
STUDENT TEACHING		
EDSE 471	Student Teaching Seminar	3
EDSC 461	Student Teaching in Science	9
Total Hours		33

Req Related for Biology, BSE

Code	Title	Hours
For Biology Majors the G2 block of the Liberal Arts Core will be fulfilled by your required related coursework.		

CHEMISTRY

A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235.
A C- or higher in CHEM 231 is a pre-requisite for CHEM 232. Students considering going to graduate school for an advanced degree in Biology should take CHEM 231 + 232.

CHEM 111	Introductory Chemistry 1	4
CHEM 112	Introductory Chemistry 2	4
Organic Chemistry - Choose 1 of the following options 1-2:		4-8
Option 1. Organic Chemistry I and II		
CHEM 231	Organic Chemistry 1	
CHEM 232	Organic Chemistry 2	
Option 2. Short Course in Organic Chemistry		
CHEM 235	Organic Chemistry	
Biochemistry Chemistry I		4
CHEM 326	Biochemistry 1	

EARTH SCIENCE

Earth Science 200-level and above - Choose 1 class from:

Any 2-level ESCI course(s)		
Any 3-level ESCI course(s)		
Any 4-level ESCI course(s)		

MATHEMATICS

Students considering graduate or professional school should take MATH 161.

Precalculus, Calculus I or Honors Calculus - Choose 1 of the following:		4-5
MATH 160	Precalculus	
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	

PHYSICS

undefined - Choose 1 of the following options 1-2:		8-10
Option 1. Physics with Algebra		

PHYS 131	Physics 1 with Algebra	
PHYS 132	Physics 2 with Algebra	
Option 2. Physics with Calculus		
PHYS 231	Physics 1 with Calculus	
PHYS 232	Physics 2 with Calculus	
Total Hours		28-35

Advanced Professional Studies, BSE

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		

APS REQUIREMENTS

English Composition - Choose 1 of the following:		3
ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211 & EDFN 241	Foundations Modern Education and Psychological Foundations of Teaching	6
48 earned (transcript) credit hours are required		
APS registration status		
You ARE NOT eligible to register for courses requiring APS status.		
ACT 126 - Educator Ethics Training		
You must submit your Educator Ethics Training.		

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. [Click here for the application.](#)

Total Hours

12

Molecular Biology/Biotechnology Minor

The Molecular Biology/Biotechnology minor focuses on the cellular level of biology and genetics. It is designed to prepare students both for careers in the fast-growing industry associated with molecular biology. This program allows students to study molecular and cellular biology while obtaining a broad background in biology and in the liberal arts.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.

5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Chemistry

The Department of Chemistry, approved by the American Chemical Society (ACS), offers two degree programs leading to the baccalaureate degree with a major in chemistry. There are five options available within the B.S. degree program that allow students to pursue focused study in specific areas of chemistry. The recommended course sequence during the first year is identical for all programs and differs minimally through the junior year, meaning that a change in career emphasis within chemistry need not delay graduation. Completion of specific requirements within their program qualifies a graduate for certification by the department to the American Chemical Society, which offers immediate membership eligibility in the ACS as well as more desirable employment opportunities.

The Bachelor of Science degree (B.S.) offers intensive training in chemistry and mathematics with the greatest flexibility in selecting broad training that covers all areas of chemistry. This degree is designed specifically for students who wish to pursue graduate studies or employment as a chemist.

The biochemistry option provides enhanced study in the chemistry of life processes and macromolecules. This program offers the best preparation for acceptance to medical or dental school as well as graduate programs or lab work that includes biological techniques.

The environmental chemistry option provides focused study in areas that involve the traditional chemistry of the atmosphere, hydrosphere, geosphere, and biosphere. The study of environmental chemistry prepares students for work related to environmental analysis, industrial hygiene, or engineering.

The polymer chemistry option focuses on chemistry that forms the basis of production of plastics, synthetic fibers, paints, coatings, adhesives, and many other chemical products. This program is especially relevant for students planning work in industrial settings or materials development.

The nanotechnology option provides study in the control of materials at very small dimensions to make smaller, cheaper and better materials used in many fields. Students in this program spend a semester at the Penn State University Park campus in their nanofabrication facility. Graduates can pursue graduate studies or employment in materials science.

The engineering instrumentation automation option provides an interdisciplinary program focused on using, controlling, and improving instruments for chemical analysis and interpreting/analyzing data. This degree includes study of industrial electronics, control systems, and robotics that prepares graduates for scientific careers where instrumentation plays a key role, including industry, forensics, or graduate school.

For students wanting a career in teaching chemistry at the high school level, the Bachelor of Science in Education degree (B.S.Ed.) provides a sound background in chemistry as well as the necessary pedagogical methods courses.

An important program option in chemistry is an internship that integrates on-site learning applicable to any of the above degree options.

Internships offer students invaluable experience in a job related to their career goal as well as financial remuneration, which helps significantly to defray the expenses of college study. Beginning after the freshman year, students choosing this option may alternate periods of on-campus study with off-campus employment until graduation. In addition, up to three credits may be approved to count toward major sequence requirements for each internship experience; up to six credits may be counted toward degree requirements. For more information, see Cooperative Education in the Special Academic Opportunities (p. 338) section.

The chemistry 3+4 pre-pharmacy option within the B.S. program requires three years of study as a chemistry major in the Millersville liberal arts curriculum along with coursework from the first year in the Lake Erie College of Osteopathic Medicine (LECOM) Pharmacy school program. At the end of the four years, the student receives a B.S. in chemistry degree from Millersville, and after seven years, the student receives a Doctorate in Pharmacy degree from LECOM.

Students majoring in other sciences can readily round out studies in chemistry to complete one of three minors. Additional coursework provides deeper expertise in chemistry, biochemistry, or environmental chemistry that expands professional opportunities.

the programs

- Biochemistry Minor (p. 280)
- Chemistry Minor (p. 280)
- Chemistry, B.S. (p. 281)
- Chemistry, B.S. - Biochemistry Option (p. 281)
- Chemistry, B.S. - Polymer Chemistry Option (p. 282)
- Chemistry, B.S. - 3+4 Pre-Pharmacy Option (p. 283)
- Chemistry, B.S. - Engineering Instrumentation Automation Option (p. 284)
- Chemistry, B.S. - Environmental Option (p. 286)
- Chemistry, B.S. - Nanotechnology Option (p. 287)
- Chemistry, B.S.Ed. (p. 288)
- Environmental Chemistry Minor (p. 289)

the faculty

Albert, Daniel; Associate Professor
College of Science and Technology
B.A., Ohio Wesleyan University, 2007; M.S., University of Wisconsin-Madison, 2008; Ph.D., Cornell University, 2013

Baker, Kristen; Assistant Professor
College of Science and Technology
B.S., Gettysburg College, 2016; Ph.D., University of Delaware, 2021

Elioff, Michael; Associate Professor
College of Science and Technology
B.S., University of Texas at Tyler, 1991; M.S., University of Texas at Arlington, 1995; Ph.D., Boston University, 2001

Kennedy, Steven; Associate Professor
College of Science and Technology
B.S., Lewis-Clark State College, 2004; Ph.D., University of California, 2010

Mbindyo, Jeremiah; Professor
College of Science and Technology
B.Ed., Kenyatta University (Kenya), 1987; M.Sc., University of Nairobi (Kenya), 1993; Ph.D., University of Connecticut, 1999

Miller, Aimee; Associate Professor
College of Science and Technology
B.A., Eastern Mennonite University, 1992; Ph.D., University of Virginia, 2000

Mullen Davis, Melissa; Assistant Professor
College of Science and Technology
B.A., Colby College, 2005; Ph.D., The Pennsylvania State University, 2011

Rajaseelan, R; Professor
College of Science and Technology
B.S., University of Peradeniya (Sri Lanka), 1981; Ph.D., University of Arizona, 1989

Rickard, Lyman; Professor
College of Science and Technology
B.S., University of Southern Mississippi, 1973; M.S., Ibid., 1975; Ph.D., Florida Institute of Technology, 1985

Schiza, Maria; Associate Professor
College of Science and Technology
B.S., Roosevelt University, 1995; Ph.D., University of South Carolina, 2001

the courses

CHEM 101: 3 s.h.

Chem!Better Things/Better Lvng (G2)

A brief introduction to chemistry and its uses in modern society: consumer, environmental, and industrial application. Presented in a mostly descriptive fashion. No credit toward chemistry major. 3 hrs. lec. Offered in fall, spring.

CHEM 102: 3 s.h.

Demonstration Chemistry (G2)

Chemical reactions that are encountered in everyday living, present in living systems, the basis of societal issues, the foundation of producing new materials and used to modify materials into finished products. Investigated by observing, describing, explaining and presenting demonstrations. Emphasis on readily understood reactions that begin with and produce nonhazardous materials. No credit toward chemistry major. 2 hrs. lec., 2 hrs. lab. Offered in spring.

CHEM 103: 3 s.h.

Gen Organic and Biochemistry 1 (G2)

An introduction to the basic theories of general and organic chemistry, including nomenclature, reactions and problem solving. Appropriate for nonscience majors and satisfies general education requirements. Proficiency in algebra is essential. High school chemistry is required. 2 hrs. lec., 2 hrs. lab. Offered fall, summer.

CHEM 104: 3 s.h.

Gen Organic and Biochemistry 2 (G2)

Solutions, acids and bases, oxidation reduction and organic chemistry, including nomenclature and basic reactions with relevancy to biochemistry. Appropriate for nonscience majors and satisfies general education requirements. 2 hrs. lec., 2 hrs. lab. Offered in spring. Prereq: CHEM 103.

CHEM 105: 3 s.h.**Culinary Chemistry (D, G2)**

Introduction to foundational chemical principles using examples from food, cooking, and baking. Topics include chemical terminology, reactions, problem solving, the scientific method. Includes specific examples from global cuisines including comparisons of ingredients and cooking methods on the molecular level. There are no pre-requisites for this course which is appropriate for non-science majors and satisfies general education requirements. No credit toward chemistry major. 2 hrs lec, 2 hrs lab. Offered: fall, summer.

CHEM 110: 3 s.h.**Fundamentals of Chemistry**

An intensive review of the fundamentals of chemistry, with particular emphasis placed on solving chemistry problems. Topics include: measurements, formulas and nomenclature, equations, stoichiometry, atomic and molecular structure, solution concentrations, acids and bases. This course is designed to prepare students majoring in the sciences for their general chemistry sequence, CHEM 111 and CHEM 112. This course may be counted only as an elective beyond normal graduation requirements. 3 hrs. lec./problem solving. Pre- or Coreq: MATH 101 or MPT of 160 or higher.

CHEM 111: 4 s.h.**Introductory Chemistry 1 (G2)**

The properties and theories of the solid, liquid and gaseous states of matter, the stoichiometry and thermochemistry of chemical reactions, and theories and applications of molecular structure and bonding. Proficiency in algebra is essential. High school chemistry is strongly recommended. Intended for science majors: biology, chemistry, Earth sciences, physics. 3 hrs. lec., 1 hr. discussion, 2 hrs. lab. Prereq: Placement in Chem.111 or C- grade or higher in CHEM 110, AND MATH 101 with a grade of C- or higher or MPT of 160 or higher, or permission of instructor.

CHEM 112: 4 s.h.**Introductory Chemistry 2 (G2)**

Continuation of CHEM 111. The interactions of matter and energy-thermodynamics, kinetics and electrochemistry. Equilibria in aqueous systems theory and practice. Coordination chemistry and descriptive chemistry of the elements. 3 hrs. lec., 1 hr. discussion, 2 hrs. lab. Prereq: CHEM 111 with a grade of C- or higher; C for chemistry majors.

CHEM 112H: 4 s.h.**Hrs: Introductory Chemistry 2 (G2)****CHEM 113H: 1 s.h.****H: Introductory Chem 2 Seminar**

The ideas of introductory chemistry are studied in extended depth, using problems, laboratory exercises, readings and discussion. Grades of B- or higher in both CHEM 112 and CHEM 113 will result in honors designation for the pair. The pair of courses counts as one entry in the science component of general education and results in 5 hours of general education credit. 1 hr. discussion. Prereq or Coreq: CHEM 112 is required

CHEM 179: 1-3 s.h.**Experimental**

Experimental

CHEM 188: 1 s.h.**Freshman Seminar in Chemistry**

An orientation to the opportunities and services available to chemistry students in the university and professional environments. Students will develop a better understanding of the major and career options and will be introduced to the chemistry department faculty and programs. 1 hr. discussion. Required of all freshman chemistry majors. Recommended for transfer students. Offered in fall.

CHEM 231: 4 s.h.**Organic Chemistry 1 (G2)**

Organic structural theory, including conformations and configurations of molecules and functional group classification of organic compounds: alkanes, alkenes, alcohols, ethers, alkyl halides, aldehydes and ketones, and aromatic and organometallic compounds. Major emphasis on relationships among molecular structure, chemical reactivity and physical properties. Thorough integration of reaction mechanisms as elucidated using principles of kinetics, thermodynamics, stereochemistry and spectroscopy. Introduction to the instrumentation of organic chemistry: proton and carbon-13 NMR, infrared and mass spectrometry. 3 hrs. lec., 3 hrs. lab. Prereq: CHEM 112 with a grade of C- or higher; C for chemistry majors.

CHEM 232: 4 s.h.**Organic Chemistry 2 (G2)**

The structure-property-reactivity-mechanism-synthesis approach from CHEM 231 continues with application to, and/or emphasis on, unsaturated compounds-alkynes, dienes and aromatic compounds. Also, carbonyl compounds, including carboxylic acids and derivatives, along with amines, phenols and complex compounds with multiple functionality. Introduction to natural and synthetic polymers; biomolecules, including fats, oils, amino acids and carbohydrates, along with the basic reactions of metabolism. Thorough integration of structural relationships to spectral properties using UV, IR, C-13 and H-1 NMR, and mass spectral instrumentation and derived data. 3 hrs. lec., 3 hrs. lab. Prereq: CHEM 231 with a grade of C- or higher.

CHEM 235: 4 s.h.**Organic Chemistry**

The elementary theory, reactions, and properties of organic compounds in an integrated fashion. No credit toward chemistry major. 3 hrs. lec., 3 hrs. lab. Offered fall. Prereq: CHEM 112 with a grade of C- or higher; C for chemistry majors. CHEM 235 is not an acceptable Prereq for CHEM 232.

CHEM 251: 3 s.h.**Inorganic Chemistry 1**

Emphasis on the unification of descriptive chemistry with the basic principles that may be used to explain natural phenomena in inorganic chemistry. The physical and chemical properties of the elements and classes of compounds such as oxides, halides, hydrides, etc., will be described and explained. Acid-base and oxidation-reduction behavior will be emphasized, along with coordination chemistry. Periodic trends are an integral part of the course. 3 hrs. lec. Offered in spring. Prereq: CHEM 112 with a grade of C- or higher; C for chemistry majors; or Coreq: CHEM 112.

CHEM 265: 4 s.h.**Quantitative Analysis (G2)**

An integrated study of advanced chemical equilibrium, activity, experimental uncertainty and accepted practice in the analytical laboratory. Titrimetry, potentiometry, extraction theory, introductory spectroscopy and chromatography are discussed. 3 hrs. lec., 3 hrs. lab. Offered spring, summer. Prereq: CHEM 112 with a grade of C- or higher; C for chemistry majors.

CHEM 265H: 4 s.h.

H: Quantitative Analysis (G2)

CHEM 279: 3 s.h.

Experimental

Experimental

CHEM 300: 3-12 s.h.

Co-Op Ed Experience in Chem

Co-Op Ed Experience in Chem

CHEM 312: 3 s.h.

Chemistry in Nanotechnology

A study of principles, methods and applications of chemistry in nanotechnology, with a special emphasis on the chemistry of materials. Topics include synthesis, characterization and manipulation of nanomaterials, sensors, bioinspired nanomaterials, atomic force and scanning electron microscopy. 2 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: NFMT 313 and CHEM 104 or 111; or CHEM 232; or CHEM 235; or permission of instructor.

CHEM 312H: 3 s.h.

Hon: Chem in Nanotechnology

CHEM 324: 4 s.h.

Plant Biochemistry

A study of enzymes and pathways involved in plant intermediary metabolism as related to plant cell structure, function and plant development. Topics include plant bioenergetics, biosynthesis of plant hormones and elicitor molecules, signal perception and transduction, and secondary metabolites (natural products). 3 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 221 and 263; CHEM 232 or 235.

CHEM 326: 4 s.h.

Biochemistry 1 (G2)

The structure and physical and chemical properties of carbohydrates, lipids, nucleic acids and other biological compounds, and their importance in life processes. Introduction to metabolic processes. Laboratory studies include the properties of chemicals of biological origin, techniques in isolation, identification, qualitative and quantitative analysis. 3 hrs. lec., 3 hrs. lab. Prereq: C- in CHEM 232 or 235.

CHEM 327: 4 s.h.

Biochemistry 2

Major focus on understanding the chemistry behind the function of biological compounds involved in cellular processes. Specific topics include enzyme mechanisms and energetics, membrane dynamics and transport, replication, transcription, protein translation and signal transduction. Additionally, metabolism of lipids, amino acids and nucleotides is studied in detail. 3 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: CHEM 326 with a grade of C- or higher.

CHEM 327H: 4 s.h.

Hon: Biochemistry 2

CHEM 328: 1 s.h.

Analytical Biochemistry Lab

Laboratory course designed to expand the technical experience of biochemistry students. Experiments completed focus on the analysis of major classes of biological compounds using advanced techniques and instrumentation. Includes opportunities to develop literature research, writing and presentation skills critical for scientific study. 3 hrs. lab. Offered in spring. Prereq or Coreq: CHEM 327 or CHEM 324 or BIOL 324.

CHEM 341: 4 s.h.

Physical Chemistry 1 (W)

A thermodynamic study of chemical systems, including ideal and nonideal solutions, chemical and phase equilibria, and electrochemistry. Investigation of the macroscopic behavior of gases and its theoretical explanations. Summary of the determination and application of additive properties. 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: CHEM 265 with a grade of C or higher, PHYS 232, MATH 311 and ENGL 110.

CHEM 342: 4 s.h.

Physical Chemistry 2 (W)

Chemical kinetics, statistical mechanics and the development and present state of quantum theory, including chemical bonding theories, atomic and molecular spectroscopy, and methods of structure determination. 3 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: CHEM 341 with a grade of D or higher and ENGL 110, or permission of instructor.

CHEM 342H: 4 s.h.

H: Physical Chemistry 2 (W)

CHEM 372: 3 s.h.

History of Chem and Society (D, P)

The history of the development of the science of chemistry from its roots in Egyptian and Greek societies through its specialization in the early 20th century. The relationships between chemical developments and society are explored, as well as the influences of chemistry on Western thought. 3 hrs. discussion. Offered in fall. Prereq: COMM 100; ENGL 110; junior status; CHEM 102, 104 or 111; two social science courses, including one history course: HIST 101, 102 or 410 preferred.

CHEM 372H: 3 s.h.

Hnrs: Hist of Chem and Society (D, P)

The history of the development of the science of chemistry from its roots in Egyptian and Greek societies through its specialization in the early twentieth century. The relationships between chemical developments and society are explored, as well as the influences of chemistry on Western thought. 3 hrs. of discussion. Offered in spring.

CHEM 375: 4 s.h.

Environmental Chemistry (D, G2)

The application of modern chemical principles to the chemical and physical interactions among the hydrosphere, lithosphere, atmosphere and biosphere. Also discussed are the more recent topics in the areas of pollution, energy and waste control. (The laboratory covers the current, fundamental instrumental methods and techniques encountered in environmental analysis.) 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: CHEM 112 with a grade of C- or higher.

CHEM 379: 3 s.h.

Experimental

Experimental

CHEM 381: 4 s.h.

Polymer Chemistry 1

An introduction to polymer chemistry. Covered are nomenclature, solutions and solubility, molecular weight determination, morphology, structure determination, polymerization reactions and synthetic methods, physical properties and fabrication methods. The laboratory provides an introduction to the methods of polymer synthesis and characterization. 3 hrs. lec., 3 hrs. lab. Offered in alternate fall semesters. Prereq: C or higher in CHEM 232 or permission of instructor.

CHEM 381H: 4 s.h.

Hon: Polymer Chemistry I

CHEM 391: 1 s.h.**Advanced Laboratory 1**

Application of advanced techniques in organic synthesis including chemical and physical methods of separation with major emphasis on advanced spectroscopic methods of characterizing organic compounds. 3 hrs. lab. Offered in fall. Prereq: C or higher in CHEM 265, 232.

CHEM 392: 1 s.h.**Advanced Laboratory 2**

A continuation of CHEM 391 including advanced techniques in inorganic synthesis and analysis. 3 hrs. lab. Offered in spring. Prereq: CHEM 251 with a grade of C or higher.

CHEM 400: 3-12 s.h.**Co-Op Ed Experience in Chem**

Co-Op Ed Experience in Chem

CHEM 435: 3 s.h.**Advanced Organic Chemistry**

Current theories of organic chemistry, with major emphasis on physical aspects as applied to structure, reactions, spectroscopy and reaction mechanisms. 3 hrs. lec. and reading in current literature. Offered in spring. Prereq: C or higher in CHEM 232.

CHEM 452: 3 s.h.**Inorganic Chemistry**

Theories of bonding and structure of inorganic elements and compounds, acid-base theories, coordination chemistry, organometallic chemistry, and bioinorganic chemistry. 3 hrs. lec. Offered in fall. Prereq: C or higher in CHEM 251 and 342 or permission of instructor.

CHEM 452H: 3 s.h.**H: Inorganic Chemistry****CHEM 465: 4 s.h.****Analytical Chemistry (W)**

Theory and practice of modern analytical techniques in chemical separations and instrumental analysis. 3 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: ENGL 110 and Prereq or Coreq: CHEM 342.

CHEM 476: 4 s.h.**Environmental Chemistry 2**

Extension of the principle topics covered in CHEM 375, with emphasis on quantitative aspects of topics such as the ozone layer, potential greenhouse effects, tropospheric chemistry, chemical fate and transport in aquatic systems, phase interactions and chemical equilibrium. Includes computer modeling, government regulations, pesticides and pollutants, hazardous waste and disposal methods. All topics will be studied from chemical, political and socioeconomic perspectives. 3 hrs. lec., 3 hrs. lab. Offered alternate spring semesters. Prereq: CHEM 375.

CHEM 482: 3 s.h.**Polymer Chemistry 2**

Topics in polymer physical chemistry, including conformation of polymer molecules, polymer solutions, theory of molecular weight determination methods, rheology, orientation, time-temperature dependence of physical properties, thermodynamics and kinetics of polymerization, rubber elasticity and spectroscopic methods of polymer characterization. 3 hrs. lec. Offered alternate spring semesters. Prereq: CHEM 342 and 381 or permission of instructor.

CHEM 486: 4 s.h.**Topics in Chemistry**

Detailed investigation of a topic in chemistry of current interest. Topic to be announced each time course is offered. Offered infrequently. Prereq: permission of instructor.

CHEM 487: 0.5 s.h.**Seminar in Chemistry 1**

Topics of current chemical interest. 1 hour. Offered in fall. Prereq: senior standing or permission of instructor.

CHEM 488: 0.5 s.h.**Seminar in Chemistry 2**

Topics of current chemical interest. 1 hour. Offered in spring. Prereq: CHEM 487; Coreq: GRAD 999 or permission of instructor.

CHEM 489: 1-4 s.h.**Honors Course**

For the definition of honors course and eligibility, refer to the Special Academic Opportunities section of this catalog.

CHEM 498: 1-3 s.h.**Independent Study**

A course for qualified students to investigate problems in chemistry. Guidance in the methods of chemical research. A minimum of 3 hours of lab required per semester hour. Prereq: permission of instructor. For further information on independent study, see the Special Academic Opportunities section.

CHEM 499: 0.5-4 s.h.**Departmental Honors**

For the definition of honors course and eligibility, refer to the Special Academic Opportunities section of this catalog.

Biochemistry Minor

The Biochemistry Minor provides students with a strong program in chemistry. The advantages to the student are increased understanding of the applicability of their major to chemical systems, increased adaptability to changing circumstances in employment, and the ability to cross-reference knowledge and expand one's ability to understand more complex problems and discover solutions through research and testing.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Chemistry Minor

Students pursuing other degrees at Millersville University who wish to have a special understanding of Chemical Systems or Chemical Principles can opt to minor in Chemistry. This emphasis can greatly increase a graduate's employment opportunities in certain areas, such as Occupational Safety and Health, Industrial Technology, Biology and others. The Chemistry minor option allows students to take a concentration of courses in the area of chemistry while pursuing their primary degree.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Chemistry

Code	Title	Hours
CHEM 111	Introductory Chemistry 1	4
CHEM 112	Introductory Chemistry 2	4
CHEM 265	Quantitative Analysis	4
CHEMISTRY REQUIRED COURSES - Choose 1 of the following:		4-8
If CHEM 235 is selected, you will need an additional Chemistry Elective, CHEM 326 or 375. If CHEM 231/232 or 341/342 are selected, no elective is needed to reach 20 credits for the minor.		
CHEM 235	Organic Chemistry	
Organic Chemistry I II - See Appendix 1		
Physical Chemistry I II - See Appendix 2		
Chemistry Elective (If Needed)		0
Total Hours		16-20

Appendix 1. Organic Chemistry I & II

Code	Title	Hours
CHEM 231	Organic Chemistry 1	4
CHEM 232	Organic Chemistry 2	4

Appendix 2. Physical Chemistry I & II

Code	Title	Hours
CHEM 341	Physical Chemistry 1	4
CHEM 342	Physical Chemistry 2	4

Chemistry, B.S.

The four-year outline of BS-CHEM courses is designed for the student who wishes to become a chemist, and wishes to prepare for further education beyond the college level in the field. Most students intending to pursue professional careers in the field of chemistry pursue this degree.

Chemistry, B.S. - Biochemistry Option

Millersville University is one of the few universities in the Commonwealth of Pennsylvania that awards an ACS approved Bachelor of Science Degree with an option in Biochemistry. The program provides the student with a basic background in chemistry and biology as well as a flexible science elective block that will allow the student to pursue any one of a number of major areas of interest upon graduation. The student may also elect to participate in the Cooperative Education Program during his or

her course of study. This opportunity affords the student with invaluable practical on-the-job experience, as well as earning college credits and a salary. The career opportunities available in biochemistry are many and diverse.

Major in Chemistry, BS

Code	Title	Hours
Credits Required for Major		
true		
Minimum GPA 2.0 for Major		
true		
Minimum credits for 50% residency		
true		
CHEM 188	Freshman Seminar in Chemistry	1
100 AND 200 LEVEL CHEMISTRY REQUIRED COURSES		
A grade of C or better is required in the 100/200 level courses before proceeding to the courses for which they are pre-requisites.		
CHEM 111	Introductory Chemistry 1 (C minimum)	4
CHEM 112	Introductory Chemistry 2 (C minimum)	4
CHEM 231	Organic Chemistry 1 (C minimum)	4
CHEM 232	Organic Chemistry 2 (C minimum)	4
CHEM 251	Inorganic Chemistry 1 (C minimum)	3
CHEM 265	Quantitative Analysis (C minimum)	4
300 AND 400 LEVEL CHEMISTRY REQUIRED COURSES		
CHEM 341	Physical Chemistry 1	4
CHEM 342	Physical Chemistry 2	4
CHEM 487	Seminar in Chemistry 1	0.5
CHEM 488	Seminar in Chemistry 2	0.5
Independent Study - Choose 1 hour from:		1
CHEM 498	Independent Study	
CHEMISTRY OPTIONS		
Option in Biochemistry - See separate block		
Total Hours		34

Option in Chemistry, Biochemistry, BS

Code	Title	Hours
Credits Required for Concentration		
true		
Minimum 50% Residency Credits		
true		
CHEM 326	Biochemistry 1	4
CHEM 327	Biochemistry 2	4
CHEM 328	Analytical Biochemistry Lab	1

CHEM 465	Analytical Chemistry	4
Chemistry Electives - Choose 5 hours from:		5
CHEM 300	Co-Op Ed Experience in Chem	
CHEM 312	Chemistry in Nanotechnology	
CHEM 324	Plant Biochemistry	
CHEM 327	Biochemistry 2	
CHEM 328	Analytical Biochemistry Lab	
CHEM 375	Environmental Chemistry	
CHEM 381	Polymer Chemistry 1	
CHEM 391	Advanced Laboratory 1	
CHEM 392	Advanced Laboratory 2	
CHEM 400	Co-Op Ed Experience in Chem	
CHEM 435	Advanced Organic Chemistry	
CHEM 452	Inorganic Chemistry	
CHEM 476	Environmental Chemistry 2	
CHEM 482	Polymer Chemistry 2	
CHEM 486	Topics in Chemistry	
CHEM 489	Honors Course	
CHEM 498	Independent Study	
CHEM 499	Departmental Honors	
If you are opting for ACS Certification, you should take CHEM 392 as one of your elective courses.		

Total Hours 18

Req Related for Chemistry, BS

Code	Title	Hours
MATHEMATICS		
Calculus I or Honors Calculus - Choose 1 of the following:		4-5
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	
MATH 211	Calculus 2	4
MATH 311	Calculus 3	4
PHYSICS		
PHYS 231	Physics 1 with Calculus	5
PHYS 232	Physics 2 with Calculus	5
BIOLOGY COMPETENCY		
General Biology		
Competency may be demonstrated with credits earned for BIOL 100 through any of the following: 1) a successful score on either the national AP Biology exam or the Biology CLEP exam. 2) a passing grade for General Biology (BIOL 100) or equivalent.		
ADDITIONAL REQUIRED RELATED FOR BIOCHEMISTRY		
BIOL 364	Foundations of Genetics & Molecular Biology	4
Biochemistry Related Directed Electives - Choose 1 of the following:		4
BIOL 362	Cell and Developmental Biology	
BIOL 361	Microbiology	
BIOL 462	Molecular Biology	
Total Hours		30-31

American Chemical Society Certification - Optional

Code **Title** **Hours**

THIS BLOCK IS NOT REQUIRED FOR DEGREE COMPLETION. The following block contains courses which are required/recommended to students opting for ACS Certification. While not required, an introductory Economics course, elementary German or Russian (GERM/RUSS 101 and 102) are recommended for inclusion in the core Liberal Arts core requirements for general education. Students must take a minimum of two hours of CHEM 489, 498, or 499 (Research) under Chemistry Electives. This means you will need a total of 3 credits in CHEM 489, 498 or 499.

REQUIRED COURSES FOR ACS CERTIFICATION		
CHEM 326	Biochemistry 1	4
CHEM 392	Advanced Laboratory 2	1
Required Independent Research - Choose 3 hours from:		3
CHEM 489	Honors Course	
CHEM 498	Independent Study	
CHEM 499	Departmental Honors	
RECOMMENDED COURSES FOR ACS CERTIFICATION		
Introductory Economics - Optional Recommended		0
Elementary Language German or Russian - Optional Recommended		0
Total Hours		8

It is strongly recommended that students pursuing the Bachelor of Science degree achieve competency equivalent to the first two courses in a foreign language. A course in economics is also recommended.

Chemistry, B.S. - Polymer Chemistry Option

The Chemistry Department at Millersville offers a B.S. Chemistry degree with an option in Polymer Chemistry that satisfies the guidelines set forth by the American Chemical Society. The Department of Chemistry is currently initiating the process of having the option certified by the American Chemical Society. Polymer chemistry has become an important area in the chemical industry. It is estimated that 50% of all chemists will work in polymer chemistry in some capacity during their careers. Polymer chemistry forms the basis for the production of plastics, synthetic fibers, paints, coatings, adhesives, and many other chemical products. Although most polymer chemists are employed by industry there are also jobs available in academics and in the government.

Major in Chemistry, BS

Code	Title	Hours
Credits Required for Major		
	true	
Minimum GPA 2.0 for Major		
	true	
Minimum credits for 50% residency		
	true	

CHEM 188 Freshman Seminar in Chemistry 1

100 AND 200 LEVEL CHEMISTRY REQUIRED COURSES

A grade of C or better is required in the 100/200 level courses before proceeding to the courses for which they are pre-requisites.

CHEM 111 Introductory Chemistry 1 (C minimum) 4

CHEM 112 Introductory Chemistry 2 (C minimum) 4

CHEM 231 Organic Chemistry 1 (C minimum) 4

CHEM 232 Organic Chemistry 2 (C minimum) 4

CHEM 251 Inorganic Chemistry 1 (C minimum) 3

CHEM 265 Quantitative Analysis (C minimum) 4

300 AND 400 LEVEL CHEMISTRY REQUIRED COURSES

CHEM 341 Physical Chemistry 1 4

CHEM 342 Physical Chemistry 2 4

CHEM 487 Seminar in Chemistry 1 0.5

CHEM 488 Seminar in Chemistry 2 0.5

Independent Study - Choose 1 hour from: 1

CHEM 498 Independent Study

CHEMISTRY OPTIONS

Option in Polymer Chemistry - See separate block

Total Hours 34

Option in Polymer, Chemistry, BS

Code	Title	Hours
CHEM 381	Polymer Chemistry 1	4
CHEM 452	Inorganic Chemistry	3
CHEM 465	Analytical Chemistry	4
CHEM 482	Polymer Chemistry 2	3
Electives - Choose 11 hours from:		11
CHEM 300	Co-Op Ed Experience in Chem	
CHEM 312	Chemistry in Nanotechnology	
CHEM 324	Plant Biochemistry	
CHEM 326	Biochemistry 1	
CHEM 327	Biochemistry 2	
CHEM 328	Analytical Biochemistry Lab	
CHEM 375	Environmental Chemistry	
CHEM 391	Advanced Laboratory 1	
CHEM 392	Advanced Laboratory 2	
CHEM 400	Co-Op Ed Experience in Chem	
CHEM 435	Advanced Organic Chemistry	
CHEM 476	Environmental Chemistry 2	
CHEM 486	Topics in Chemistry	
CHEM 489	Honors Course	
CHEM 498	Independent Study	
CHEM 499	Departmental Honors	
AENG 271	Processing Nonmetallic Materials	
AENG 375	Polymer and Ceramic Technology	
Total Hours		25

Req Related for Chemistry, BS

Code	Title	Hours
MATHEMATICS		
Calculus I or Honors Calculus - Choose 1 of the following:		4-5
MATH 161	Calculus 1	

MATH 163H	Honors Calculus 1	
MATH 211	Calculus 2	4
MATH 311	Calculus 3	4
PHYSICS		
PHYS 231	Physics 1 with Calculus	5
PHYS 232	Physics 2 with Calculus	5
Total Hours		22-23

American Chemical Society Certification - Optional

Code	Title	Hours
THIS BLOCK IS NOT REQUIRED FOR DEGREE COMPLETION. The following block contains courses which are required/recommended to students opting for ACS Certification. While not required, an introductory Economics course, elementary German or Russian (GERM/RUSS 101 and 102) are recommended for inclusion in the core Liberal Arts core requirements for general education. Students must take a minimum of two hours of CHEM 489, 498, or 499 (Research) under Chemistry Electives. This means you will need a total of 3 credits in CHEM 489, 498 or 499.		
REQUIRED COURSES FOR ACS CERTIFICATION		
CHEM 326	Biochemistry 1	4
CHEM 392	Advanced Laboratory 2	1
Required Independent Research - Choose 3 hours from:		3
CHEM 489	Honors Course	
CHEM 498	Independent Study	
CHEM 499	Departmental Honors	
RECOMMENDED COURSES FOR ACS CERTIFICATION		
Introductory Economics - Optional Recommended		0
Elementary Language German or Russian - Optional Recommended		0
Total Hours		8

Chemistry, B.S. - 3+4 Pre-Pharmacy Option

The 3+4 Pre-Pharmacy option is designed within the B.S. Chemistry program, allowing students to complete both B.S. Chemistry and Doctor of Pharmacy degrees in seven years. Students will be admitted into this program by Millersville University and complete a 3-year program in the Chemistry department that includes all courses required in the first three years (101.0 credits) of a B.S. chemistry degree. To remain in the program, each student must maintain an overall GPA of 3.0 as well as a science GPA of 3.0 at Millersville University. The students will then enroll in a 4-year Pharm. D. degree program at the pharmacy school of their choice. Upon successful completion of the first-year pharmacy program coursework, the chemistry department will accept a professional block of 19.0 credits from the pharmacy school. The 120.0 total credits earned will be the basis for awarding a B.S. chemistry degree from Millersville University, provided the student has completed all other requirements.

Major in Chemistry, BS

Code	Title	Hours
Credits Required for Major		
true		
Minimum GPA 2.0 for Major		

true
Minimum credits for 50% residency
true

100 AND 200 LEVEL CHEMISTRY REQUIRED COURSES

A grade of C or better is required in the 100/200 level courses before proceeding to the courses for which they are pre-requisites.

CHEM 111	Introductory Chemistry 1 (C minimum)	4
CHEM 112	Introductory Chemistry 2 (C minimum)	4
CHEM 231	Organic Chemistry 1 (C minimum)	4
CHEM 232	Organic Chemistry 2 (C minimum)	4
CHEM 251	Inorganic Chemistry 1 (C minimum)	3
CHEM 265	Quantitative Analysis (C minimum)	4

300 AND 400 LEVEL CHEMISTRY REQUIRED COURSES

CHEM 341	Physical Chemistry 1	4
CHEM 342	Physical Chemistry 2	4
CHEM 487	Seminar in Chemistry 1	0.5
CHEM 488	Seminar in Chemistry 2	0.5
Independent Study - Choose 1 hour from:		1
CHEM 498	Independent Study	

CHEMISTRY OPTIONS

Option in Pre-Pharmacy - See separate block

Total Hours **33**

Option in Chemistry, Pre-Pharmacy, BS

Code	Title	Hours
Chemistry Electives - Choose 4 hours from:		
CHEM 300	Co-Op Ed Experience in Chem	4
CHEM 375	Environmental Chemistry	
CHEM 381	Polymer Chemistry 1	
CHEM 391	Advanced Laboratory 1	
CHEM 392	Advanced Laboratory 2	
CHEM 435	Advanced Organic Chemistry	
CHEM 452	Inorganic Chemistry	
CHEM 465	Analytical Chemistry	
CHEM 486	Topics in Chemistry	
CHEM 489	Honors Course	
CHEM 498	Independent Study	
CHEM 499	Departmental Honors	
1st Year Pharmacy School Credits		19
19 Credits will be awarded upon receipt of transcripts from first year of Pharmacy School.		
Total Hours		23

Req Related for Chemistry, BS

Code	Title	Hours
MATHEMATICS		
Calculus I or Honors Calculus - Choose 1 of the following:		
MATH 161	Calculus 1	4-5
MATH 163H	Honors Calculus 1	

MATH 211	Calculus 2	4
MATH 311	Calculus 3	4
MATH 235	Survey of Statistics	3

PHYSICS

PHYS 231	Physics 1 with Calculus	5
PHYS 232	Physics 2 with Calculus	5

BIOLOGY COMPETENCY

General Biology

Competency may be demonstrated with credits earned for BIOL 100 through any of the following: 1) a successful score on either the national AP Biology exam or the Biology CLEP exam. 2) a passing grade for General Biology (BIOL 100) or equivalent.

Total Hours **25-26**

American Chemical Society Certification - Optional

Code	Title	Hours
THIS BLOCK IS NOT REQUIRED FOR DEGREE COMPLETION. The following block contains courses which are required/recommended to students opting for ACS Certification. While not required, an introductory Economics course, elementary German or Russian (GERM/RUSS 101 and 102) are recommended for inclusion in the core Liberal Arts core requirements for general education. Students must take a minimum of two hours of CHEM 489, 498, or 499 (Research) under Chemistry Electives. This means you will need a total of 3 credits in CHEM 489, 498 or 499.		

REQUIRED COURSES FOR ACS CERTIFICATION

CHEM 326	Biochemistry 1	4
CHEM 392	Advanced Laboratory 2	1
Required Independent Research - Choose 3 hours from:		
CHEM 489	Honors Course	
CHEM 498	Independent Study	
CHEM 499	Departmental Honors	

RECOMMENDED COURSES FOR ACS CERTIFICATION

Introductory Economics - Optional Recommended	0
Elementary Language German or Russian - Optional Recommended	0

Total Hours **8**

Specific pharmacy curricula have additional requirements; students should consult with their advisor or chemistry department chairperson.

Chemistry, B.S. - Engineering Instrumentation Automation Option

The B.S. Chemistry degree with an option in Engineering Instrumentation Automation is focused on using, controlling, and improving instruments for chemical analysis and interpreting/analyzing data. Many chemistry employment opportunities exist in analytical laboratories or graduate school where sophisticated instrumentation is used extensively. This option maintains a core chemistry curriculum and supplements the chemistry knowledge content with industrial electronics, control systems, and robotics. This option is a unique learning experience available at Millersville due to the collaboration of the Department of Chemistry and the Department of Applied Engineering Safety and Technology. Graduate of this option will be well prepared for positions where instrumentation and analysis plays a key role.

Major in Chemistry, BS

Code	Title	Hours
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Credits Required for Major

true

Minimum GPA 2.0 for Major

true

Minimum credits for 50% residency

true

CHEM 188 Freshman Seminar in Chemistry 1

100 AND 200 LEVEL CHEMISTRY REQUIRED COURSES

A grade of C or better is required in the 100/200 level courses before proceeding to the courses for which they are pre-requisites.

CHEM 111 Introductory Chemistry 1 (C minimum) 4

CHEM 112 Introductory Chemistry 2 (C minimum) 4

CHEM 231 Organic Chemistry 1 (C minimum) 4

CHEM 232 Organic Chemistry 2 (C minimum) 4

CHEM 251 Inorganic Chemistry 1 (C minimum) 3

CHEM 265 Quantitative Analysis (C minimum) 4

300 AND 400 LEVEL CHEMISTRY REQUIRED COURSES

CHEM 341 Physical Chemistry 1 4

CHEM 342 Physical Chemistry 2 4

CHEM 487 Seminar in Chemistry 1 0.5

CHEM 488 Seminar in Chemistry 2 0.5

Independent Study - Choose 1 hour from: 1

CHEM 498 Independent Study

CHEMISTRY OPTIONS

Option in Engineering Instrumentation Automation - See separate block

Total Hours 34**Option in Chemistry, Engineering Inst. Automat, BS**

Code	Title	Hours
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CHEM 391 Advanced Laboratory 1 1

CHEM 465 Analytical Chemistry 4

Chemistry Electives - Choose 8 hours from: 8

CHEM 300 Co-Op Ed Experience in Chem

CHEM 312 Chemistry in Nanotechnology

CHEM 326 Biochemistry 1

CHEM 327 Biochemistry 2

CHEM 328 Analytical Biochemistry Lab

CHEM 375 Environmental Chemistry

CHEM 381 Polymer Chemistry 1

CHEM 392 Advanced Laboratory 2

CHEM 400 Co-Op Ed Experience in Chem

CHEM 435 Advanced Organic Chemistry

CHEM 452 Inorganic Chemistry

CHEM 476 Environmental Chemistry 2

CHEM 482 Polymer Chemistry 2

CHEM 486 Topics in Chemistry

CHEM 489 Honors Course

CHEM 498 Independent Study

CHEM 499 Departmental Honors

CHEM 500

If you are opting for ACS Certification, you should take CHEM 392 as one of your elective courses.

Total Hours 13**Req Related for Chemistry, BS**

Code	Title	Hours
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MATHEMATICS

Calculus I or Honors Calculus - Choose 1 of the following: 4-5

MATH 161 Calculus 1

MATH 163H Honors Calculus 1

MATH 211 Calculus 2 4

MATH 311 Calculus 3 4

PHYSICS

PHYS 231 Physics 1 with Calculus 5

PHYS 232 Physics 2 with Calculus 5

CONTROL SYSTEMS

AENG 261 Electronic Systems 3

AENG 325 Power Conversion and Control 3

AENG 425 Industrial Robotic Systems 3

Programming Logic Controllers 3

AENG 427 Programmable Logic Controllers

Total Hours 34-35**American Chemical Society Certification - Optional**

Code	Title	Hours
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THIS BLOCK IS NOT REQUIRED FOR DEGREE COMPLETION. The following block contains courses which are required/recommended to students opting for ACS Certification. While not required, an introductory Economics course, elementary German or Russian (GERM/RUSS 101 and 102) are recommended for inclusion in the core Liberal Arts core requirements for general education. Students must take a minimum of two hours of CHEM 489, 498, or 499 (Research) under Chemistry Electives. This means you will need a total of 3 credits in CHEM 489, 498 or 499.

REQUIRED COURSES FOR ACS CERTIFICATION

CHEM 326 Biochemistry 1 4

CHEM 392 Advanced Laboratory 2 1

Required Independent Research - Choose 3 hours from: 3

CHEM 489 Honors Course

CHEM 498 Independent Study

CHEM 499 Departmental Honors

RECOMMENDED COURSES FOR ACS CERTIFICATION

Introductory Economics - Optional Recommended 0

Elementary Language German or Russian - Optional Recommended 0

Total Hours 8

Chemistry, B.S. - Environmental Option

Millersville University Department of Chemistry offers a B.S. Chemistry degree with an option in Environmental Chemistry. The curriculum offers courses whose contents are consistent with similar programs offered elsewhere and, with electives in inorganic chemistry and biochemistry, that will satisfy the guidelines of an option in Environmental Chemistry approved by the ACS. In addition to course requirements, the curriculum includes opportunities for industrial and government internship programs related to environmental analysis, engineering, and regulation. Of more immediate promise is the interest expressed by Lancaster Laboratories in generating a student internship program with the Chemistry Department. These internships include such areas as research in sampling and instrumental analysis of many different kinds of materials, toxicity and risk assessment, field testing and monitoring, drug screening, environmental law and regulations, analysis of food products, and quality assurance in the chemical laboratory.

Major in Chemistry, BS

Code	Title	Hours
Credits Required for Major		
	true	
Minimum GPA 2.0 for Major		
	true	
Minimum credits for 50% residency		
	true	
CHEM 188	Freshman Seminar in Chemistry	1
100 AND 200 LEVEL CHEMISTRY REQUIRED COURSES		
A grade of C or better is required in the 100/200 level courses before proceeding to the courses for which they are pre-requisites.		
CHEM 111	Introductory Chemistry 1 (C minimum)	4
CHEM 112	Introductory Chemistry 2 (C minimum)	4
CHEM 231	Organic Chemistry 1 (C minimum)	4
CHEM 232	Organic Chemistry 2 (C minimum)	4
CHEM 251	Inorganic Chemistry 1 (C minimum)	3
CHEM 265	Quantitative Analysis (C minimum)	4
300 AND 400 LEVEL CHEMISTRY REQUIRED COURSES		
CHEM 341	Physical Chemistry 1	4
CHEM 342	Physical Chemistry 2	4
CHEM 487	Seminar in Chemistry 1	0.5
CHEM 488	Seminar in Chemistry 2	0.5
Independent Study - Choose 1 hour from:		1
CHEM 498	Independent Study	
CHEMISTRY OPTIONS		
Option in Environmental Chemistry - See separate block		
Total Hours		34

Option in Environmental Chemistry, BS

Code	Title	Hours
CHEM 375	Environmental Chemistry	4
CHEM 465	Analytical Chemistry	4
CHEM 476	Environmental Chemistry 2	4
Chemistry Electives - Choose 5 hours from:		5
CHEM 300	Co-Op Ed Experience in Chem	
CHEM 312	Chemistry in Nanotechnology	
CHEM 324	Plant Biochemistry	
CHEM 326	Biochemistry 1	
CHEM 327	Biochemistry 2	
CHEM 328	Analytical Biochemistry Lab	
CHEM 381	Polymer Chemistry 1	
CHEM 391	Advanced Laboratory 1	
CHEM 392	Advanced Laboratory 2	
CHEM 400	Co-Op Ed Experience in Chem	
CHEM 435	Advanced Organic Chemistry	
CHEM 452	Inorganic Chemistry	
CHEM 486	Topics in Chemistry	
CHEM 489	Honors Course	
CHEM 498	Independent Study	
CHEM 499	Departmental Honors	
CHEM 500		
Total Hours		17

Req Related for Chemistry, BS

Code	Title	Hours
MATHEMATICS		
Calculus I or Honors Calculus - Choose 1 of the following:		4-5
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	
MATH 211	Calculus 2	4
MATH 311	Calculus 3	4
PHYSICS		
PHYS 231	Physics 1 with Calculus	5
PHYS 232	Physics 2 with Calculus	5
BIOLOGY COMPETENCY		
General Biology		
Competency may be demonstrated with credits earned for BIOL 100 through any of the following: 1) a successful score on either the national AP Biology exam or the Biology CLEP exam. 2) a passing grade for General Biology (BIOL 100) or equivalent.		
Environmental Chemistry Related Directed Electives		
undefined - Choose 2 of the following:		6-8
BIOL 211	Concepts of Zoology	
BIOL 221	Concepts of Botany	
BIOL 241	Principles of Ecology	
BIOL 340	Prspctv in Environm Awareness	
BIOL 343	Principles of Ecology & Evolution	
ESCI 245	Environmental Meteorology	
ESCI 322	Environmental Hydrology	
ESCI 349	Chemistry of the Atmosphere	
ESCI 426	Groundwater Resources and Contamination	

GEOG 202	Environmental Sustainability
GEOG 230	Physical Geography
GEOG 304	Water Resources Management
OSEH 321	Environmental & Industrial Hygiene I - Chemical and Biological Hazards
OSEH 422	Environmental & Industrial Health II - Physical Hazards
OSEH 435	Environmental Health

Other relevant environmental courses may also be selected by consulting with your academic advisor and submitting an exception to graduation requirements. A related minor may be earned by completing the minor requirements that include courses from the disciplines above.

Total Hours 28-31

American Chemical Society Certification - Optional

Code **Title** **Hours**

THIS BLOCK IS NOT REQUIRED FOR DEGREE COMPLETION. The following block contains courses which are required/recommended to students opting for ACS Certification. While not required, an introductory Economics course, elementary German or Russian (GERM/RUSS 101 and 102) are recommended for inclusion in the core Liberal Arts core requirements for general education. Students must take a minimum of two hours of CHEM 489, 498, or 499 (Research) under Chemistry Electives. This means you will need a total of 3 credits in CHEM 489, 498 or 499.

REQUIRED COURSES FOR ACS CERTIFICATION

CHEM 326	Biochemistry 1	4
CHEM 392	Advanced Laboratory 2	1
Required Independent Research - Choose 3 hours from:		3
CHEM 489	Honors Course	
CHEM 498	Independent Study	
CHEM 499	Departmental Honors	

RECOMMENDED COURSES FOR ACS CERTIFICATION

Introductory Economics - Optional Recommended	0
Elementary Language German or Russian - Optional Recommended	0

Total Hours 8

Chemistry, B.S. - Nanotechnology Option

The Chemistry Department at Millersville offers a B.S. Chemistry degree with an option in Nanotechnology. The curriculum includes courses that give students a strong background in chemistry and electives in nanotechnology and other sciences. As part of the current program, students spent a semester at Penn State University Park Campus to gain practical experience in nanofabrication and the use of clean room facilities. Nanotechnology - which is the control of materials at very small dimensions to make smaller, cheaper and better products is being adopted in many industries. Upon graduation students can pursue graduate studies in chemistry or materials sciences, or work in industry or government usually in an environment involving interaction with scientists from other disciplines such as biology, physics and engineering.

Major in Chemistry, BS

Code **Title** **Hours**

Credits Required for Major

true		
Minimum GPA 2.0 for Major		
true		
Minimum credits for 50% residency		
true		
CHEM 188	Freshman Seminar in Chemistry	1

100 AND 200 LEVEL CHEMISTRY REQUIRED COURSES

A grade of C or better is required in the 100/200 level courses before proceeding to the courses for which they are pre-requisites.

CHEM 111	Introductory Chemistry 1 (C minimum)	4
CHEM 112	Introductory Chemistry 2 (C minimum)	4
CHEM 231	Organic Chemistry 1 (C minimum)	4
CHEM 232	Organic Chemistry 2 (C minimum)	4
CHEM 251	Inorganic Chemistry 1 (C minimum)	3
CHEM 265	Quantitative Analysis (C minimum)	4

300 AND 400 LEVEL CHEMISTRY REQUIRED COURSES

CHEM 341	Physical Chemistry 1	4
CHEM 342	Physical Chemistry 2	4
CHEM 487	Seminar in Chemistry 1	0.5
CHEM 488	Seminar in Chemistry 2	0.5

Independent Study - Choose 1 hour from:

CHEM 498	Independent Study	1
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CHEMISTRY OPTIONS

Option in Nanotechnology - See separate block

Total Hours 34

Option in Nanotechnology, Chemistry, BS

Code	Title	Hours
CHEM 312	Chemistry in Nanotechnology	3
Electives - Choose 4 hours from:		4
CHEM 300	Co-Op Ed Experience in Chem	
CHEM 326	Biochemistry 1	
CHEM 375	Environmental Chemistry	
CHEM 381	Polymer Chemistry 1	
CHEM 391	Advanced Laboratory 1	
CHEM 392	Advanced Laboratory 2	
CHEM 435	Advanced Organic Chemistry	
CHEM 452	Inorganic Chemistry	
CHEM 465	Analytical Chemistry	
CHEM 486	Topics in Chemistry	
CHEM 489	Honors Course	
CHEM 498	Independent Study	
CHEM 499	Departmental Honors	

PROFESSIONAL BLOCK PENN STATE COURSES

Courses taken in a Capstone Semester at Penn State University in the Nanofabrication Facility.

NFMT 311	Materials, Safety & Equipment Overview for Nanotechnology	3
NFMT 312	Basic Nanotechnology Processes	3
NFMT 313	Thin Film Utilization	3
NFMT 314	Lithography	3
NFMT 315	Materials Modification in Nanotechnology	3
NFMT 316	Characterization, Testing Nanotech Structures & Materials	3

Total Hours 25

Req Related for Chemistry, BS

Code	Title	Hours
MATHEMATICS		
Calculus I or Honors Calculus - Choose 1 of the following:		4-5
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	
MATH 211	Calculus 2	4
MATH 311	Calculus 3	4
PHYSICS		
PHYS 231	Physics 1 with Calculus	5
PHYS 232	Physics 2 with Calculus	5
Total Hours		22-23

American Chemical Society Certification - Optional

Code	Title	Hours
THIS BLOCK IS NOT REQUIRED FOR DEGREE COMPLETION. The following block contains courses which are required/recommended to students opting for ACS Certification. While not required, an introductory Economics course, elementary German or Russian (GERM/RUSS 101 and 102) are recommended for inclusion in the core Liberal Arts core requirements for general education. Students must take a minimum of two hours of CHEM 489, 498, or 499 (Research) under Chemistry Electives. This means you will need a total of 3 credits in CHEM 489, 498 or 499.		
REQUIRED COURSES FOR ACS CERTIFICATION		
CHEM 326	Biochemistry 1	4
CHEM 392	Advanced Laboratory 2	1
Required Independent Research - Choose 3 hours from:		3
CHEM 489	Honors Course	
CHEM 498	Independent Study	
CHEM 499	Departmental Honors	
RECOMMENDED COURSES FOR ACS CERTIFICATION		
Introductory Economics - Optional Recommended		0
Elementary Language German or Russian - Optional Recommended		0
Total Hours		8

Chemistry, B.S.Ed.

The BSE-CHEM degree leads to certification to teach chemistry at the secondary level in the public schools of the Commonwealth of Pennsylvania. Millersville University's Chemistry Education program allows you to pursue a comprehensive study of the scientific discipline while gaining the skills to teach 7th to 12th grade students. By

successfully completing this program, students earn a Bachelor of Science in Education (B.S.E.) degree with a certification in Secondary Chemistry Education and are prepared for Pennsylvania licensure exams.

Major in Chemistry, BSE

Code	Title	Hours
Credits Required for Major		
	true	
Minimum GPA 2.0 for Major		
	true	
Minimum Residency 50% of Major Courses		
	true	
CHEM 188	Freshman Seminar in Chemistry	1
100 AND 200 LEVEL CHEMISTRY REQUIREMENTS		
CHEM 111	Introductory Chemistry 1 (C minimum)	4
CHEM 112	Introductory Chemistry 2 (C minimum)	4
CHEM 231	Organic Chemistry 1 (C minimum)	4
CHEM 232	Organic Chemistry 2 (C minimum)	4
CHEM 251	Inorganic Chemistry 1 (C minimum)	3
CHEM 265	Quantitative Analysis (C minimum)	4
300 AND 400 LEVEL CHEMISTRY REQUIREMENTS		
CHEM 326	Biochemistry 1	4
CHEM 341	Physical Chemistry 1	4
CHEM 342	Physical Chemistry 2	4
CHEM 375	Environmental Chemistry	4
CHEM 487	Seminar in Chemistry 1	0.5
CHEM 488	Seminar in Chemistry 2	0.5
Total Hours		41
Professional Education		
Code	Title	Hours
EDUCATIONAL FOUNDATIONS		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
REQUIRED EDUCATION COURSES		
EDSE 321	Issues in Secondary Education	3
EDFN 330	Instructional Technology, Design & Assessment	3
EDSE 435	Teaching of Science in Secondary Schools	3
ACCOMMODATIONS AND ADAPTATIONS		
EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3
STUDENT TEACHING		
EDSE 471	Student Teaching Seminar	3
EDSC 461	Student Teaching in Science	9
Total Hours		33

Req Related for Chemistry, BSE

Code	Title	Hours
MATHEMATICS		
Calculus I - Choose 1 of the following:		4-5
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	
MATH 211	Calculus 2	4
MATH 311	Calculus 3	4
PHYSICS		
PHYS 231	Physics 1 with Calculus	5
PHYS 232	Physics 2 with Calculus	5
BIOLOGY		
General Biology		
Competency may be demonstrated by: 1) a course grade of 'A' or 'B' in AP Bioogy; 2) a score of 3 or better in the national AP exam; 3) a successful score on the CLEP exam; 4) a passing grade for General Biology (BIOL 100)		
Total Hours		22-23

Advanced Professional Studies, BSE

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		
APS REQUIREMENTS		
English Composition - Choose 1 of the following:		3
ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211	Foundations Modern Education	6
& EDFN 241	and Psychological Foundations of Teaching	
48 earned (transcript) credit hours are required		

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours	12
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Environmental Chemistry Minor

This program, a minor within the Chemistry program, incorporates all the scientific areas but focuses on green chemistry and sustainability. You will prepare for graduate training or professional work in chemistry under the instruction of faculty members who are active researchers and reflect the diversity of expertise across chemical disciplines.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.

- Only one course which counts toward your major may be counted toward your minor.
- Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
- At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
- No course needed for the minor may be taken Pass-Fail.
- One-half or more of the work required for the minor must be completed at Millersville University.
- No student may minor in his or her major.

Minor in Environmental Chemistry

Code	Title	Hours
CHEM 111	Introductory Chemistry 1	4
CHEM 112	Introductory Chemistry 2	4
CHEM 375	Environmental Chemistry	4
CHEM 476	Environmental Chemistry 2	4
CHEMISTRY REQUIRED COURSES - Choose 1 of the following options 4-8 1-2:		
Option 1. Organic Chemistry I II		
CHEM 231	Organic Chemistry 1	
CHEM 232	Organic Chemistry 2	
Option 2. Organic Chemistry		
CHEM 235	Organic Chemistry	
CHEM 265	Quantitative Analysis recommended	0
Total Hours		20-24

Computer Science

The Department of Computer Science offers a baccalaureate degree in computer science and also offers minors in computer science and data science.

The Bachelor of Science degree program in computer science is accredited by the Computing Accreditation Commission of ABET, www.abet.org (<http://www.abet.org>). The Bachelor of Science degree program in computer science has been recognized as a high-quality degree program that meets national standards for computer science education. Our B.S. degree program in computer science was the first computer science program in a Pennsylvania State System University to be accredited by ABET. The B.S. degree program in computer science is designed to provide students with a fundamental background in computer science as well as allow students to study advanced topics such as compiler design, artificial intelligence, mobile device application development, game development, human-computer interaction, algorithms, networking, computer graphics, security and parallel programming. Graduates are well prepared to pursue graduate study or a career in the computer field. Opportunities for student research are available.

For admission as a major in computer science, a student is expected to have a sound preparation in high school academic mathematics: algebra I and II, plane geometry, trigonometry and analytic geometry. Students who have completed an AP course in high school are encouraged to take the College Board Advanced Placement Exam in computer science and have their scores sent to Millersville University for evaluation. University credit for freshman-level computer science major courses will be offered to students with grades of 3 or higher. For further information, see

Advanced Placement Examinations in this catalog. The cooperative education program allows students to gain valuable experience in a full-time professional position related to their career goals, adding practical relevance to their program of study as well as financial remuneration. Students may elect one or more cooperative education experiences.

The cooperative education program allows students to gain valuable experience in a full-time professional position related to their career goals, adding practical relevance to their program of study as well as financial remuneration. Students may elect one or more cooperative education experiences.

Millersville University's Computer Science program consists of two components: required courses that every student must take and elective courses from which each student selects those most relevant to their interests and career goals. The required courses prepare students for an immediate career and for lifelong learning by providing a solid foundation of computer science principles. In particular, the required curriculum includes coverage of discrete mathematical structures, computer programming, data structures and algorithm analysis, computer architecture, programming languages, mathematical models of computation, database systems, design of operating systems, and contemporary software engineering practices. The electives cover a wide variety of important application areas and more advanced versions of the fundamental topics. Popular elective topics include artificial intelligence, computer graphics, computer networks, computer security, data mining, video game development, and web application development. Graduates of the Computer Science program are well qualified for careers such as software engineer/developer, web developer, systems analyst, data scientist, and system administrator, as well as for graduate studies in computer science and related fields.

Information about the degree programs offered by the Department of Computer Science can be found on the web at www.millersville.edu/computerscience (<http://www.millersville.edu/computerscience/>) or send email to info@cs.millersville.edu

the programs

- Computer Science Minor (p. 293)
- Computer Science, B.S. (p. 294)
- Data Science Minor (p. 294)

the faculty

Hardy, Nazli; Associate Professor
College of Science and Technology
B.S., Clarkson University, 1996; M.B.A., Audrey Cohen Business School, 1998; Ph.D., City University of New York, 2004

Hogg, Chad; Assistant Professor
College of Science and Technology
B.S., Ursinus College, 2004; M.S., Lehigh University, 2007; Ph.D., Ibid., 2011

Schwartz, Stephanie; Professor
College of Science and Technology
B.S., Shippensburg University, 1991; M.S., University of Delaware, 1993; Ph.D., Ibid., 2006

Xie, Jingnan; Assistant Professor
College of Science and Technology
B.A., Shandong Agricultural University, 2011; Ph.D., SUNY at Albany, 2011

Zoppetti, Gary; Associate Professor
College of Science and Technology
B.S., California University of Pennsylvania, 1992; M.S., University of Delaware, 1997; Ph.D., Ibid., 2001

the courses

CSCI 101: 4 s.h.

Problem Solving with Computers (G2)

Designed to introduce concepts, techniques and history of computing to students who are not computer science majors. Emphasis on problem solving using the computer, including making calculations and presenting reports, tables and graphs based on those calculations. Collecting, storing, updating and retrieving data. Display and interpretation of information using the Internet. No credit toward computer science major.

CSCI 121: 4 s.h.

Intro to Web Programming (G2)

Designed to introduce web programming to students who are not computer science majors. Topics include web-page design, scripting languages, graphics animation, image handling, event handling, document object model and graphical interface control objects. No credit toward computer science major. Offered periodically.

CSCI 140: 4 s.h.

Discrete Structures

Discrete mathematical structures and their application to computer science including formal mathematical notation and proofs, algorithms, computer related arithmetic, propositional logic, predicate logic, set theory, graphics, relations and databases, functions, matrices and combinatorics. Prereq: Placement in MATH 151 or higher.

CSCI 151: 4 s.h.

Intro to Programming for Data Science I (G2)

Introduction to computer programming for the student not intending to major in computer science or related fields. Emphasis on learning to develop programs in an appropriate programming language (currently Python) to manipulate and analyze data from domains such as science, business, engineering, and the humanities. Pre or Co-req: MATH 130 or MATH 234 or MATH 235 or MATH 333 or ECON 231 or GEOG 292 or CHEM 265 or BIOL 375. 4 s.h.

CSCI 152: 4 s.h.

Intro to Programming for Data Science II (G2)

Continuation of CSCI 151 covering more advanced computer programming techniques with an emphasis on developing programs to manipulate and analyze real-world data from various domains including business, science, and the humanities. Topics include creating appropriate data visualizations, acquiring data from numerous sources, analyzing and cleaning data sets, drawing advanced conclusions from data and the ethics of data collection and analysis. Current language used is Python. Pre-req: C or higher in CSCI 151 or B or higher in CSCI 161 and C- or higher in MATH 130 or MATH 234 or MATH 235 or MATH 333 or ECON 231 or GEOG 292 or CHEM 265 or BIOL 375. 4 s.h.

CSCI 161: 4 s.h.

Introduction to Programming 1 (G2)

Introduction to computer programming for the student intending to major in computer science or related fields. Emphasis on developing ability to apply problem-solving strategies to design and implement algorithms in a modern programming language. Prereq: Placement in MATH 151 or higher.

CSCI 162: 4 s.h.

Introduction to Programming 2 (G2)

Continuation of CSCI 161 covering advanced computer programming techniques. Emphasis on object-oriented programming, specification, design, elementary data structures, and proper use of programming language and development tools. Abstract data types, classes and objects, recursion, linked lists, queues, stacks and binary trees. Prereq: C or higher in CSCI 161 or B or higher in CSCI 151.

CSCI 179: 3,4 s.h.

Experimental

Experimental

CSCI 279: 3 s.h.

Experimental

Experimental

CSCI 300: 3-12 s.h.

Co-Op Ed Experience in CSCI

Co-Op Ed Experience in CSCI

CSCI 330: 4 s.h.

Programming Languages

Introduction to the fundamental principles of programming language design, semantics, and implementation. Structure and vocabulary of modern programming languages. Programming language topics include formal semantics of programming, name binding, scope, data types, type systems, control flow, object orientation, scripting languages, functional languages, polymorphism, and concurrency. Labs and assignments will include experience in writing programs in a nonprocedural programming paradigm. Pre- or co-requisite: CSCI 362

CSCI 340: 4 s.h.

Computational Models

Introduction to theory of computation. Topics include finite state automata, regular languages and grammars, pushdown automata, context-free languages and grammars, Turing machines, limits on algorithmic computation. Offered in spring. Prereq: C- or higher in CSCI 140, 162.

CSCI 350: 3 s.h.

Cognitive Science (P)

Basic introduction to cognitive science. Reviews attempts to understand cognition using insights from psychology, artificial intelligence, philosophy, linguistics and the neurosciences. Examines the synthesis of those attempts in the emergent field of cognitive science. Offered periodically. Prereq: COMM 100, ENGL 110, junior status. No credit given if credit earned in PSYC/CSCI 314.

CSCI 362: 4 s.h.

Data Structures

Abstract data types, objects, algorithm design and analysis, trees, graphs, sorting and searching. Emphasis on ADT-based and object-oriented design, incremental development and testing, and comparison of data structure implementations. Offered in fall, spring. Prereq: C- or higher in CSCI 140 and CSCI 162.

CSCI 366: 4 s.h.

Database Systems

Introduction to building database-driven applications. Topics include data modeling, building databases, database queries, basic data management, Model View Controller design paradigm, basic database-driven application development, and non-relational database systems. Pre-req: C- or higher in CSCI 152 or 162 and CSCI 140 or MATH 120.

CSCI 370: 4 s.h.**Computer Architecture**

Structure of digital computers including register transfer notation, instruction set architecture, computer arithmetic, pipelining and parallel processors. Offered in fall. Prereq: C- or higher in CSCI 140, 162.

CSCI 375: 4 s.h.**Computer Graphics**

Theory and implementation of computer graphics. Explores each stage of the graphics pipeline through topics such as mathematical representations of positions and transformations, graphics primitives, 3D modeling, cameras, clipping, lighting, texturing, animation, and rasterization. Students build a graphics engine by iteratively replacing library code with their own work. Pre-req: MATH 304 and C- or higher in CSCI 362.

CSCI 379: 3 s.h.**Experimental**

Experimental

CSCI 380: 4 s.h.**Operating Systems**

Design and implementation of operating systems including types of operating systems, file systems, resource management, concurrent processes, deadlocks, memory management techniques, processor scheduling, disk scheduling, operating system security and system administration. Students expected to develop significant operating systems programming projects. Offered in fall, spring. Prereq: C- or higher in CSCI 362, 370.

CSCI 380H: 4 s.h.**Hon: Operating Systems****CSCI 395: 4 s.h.****Computer Networks (W)**

Introduction to computer networks. Topics include network media, architecture and topology, protocols and layering, client-server models, Ethernet media and hardware, TCP/IP and other protocols, setup and system administration, application protocols and communication, network servers and services, security, data integrity, encryption, and firewalls. Offered periodically. Prereq: C- or higher in CSCI 362, ENGL 110.

CSCI 400: 3-12 s.h.**Co-Op Ed Experience in CSCI**

Co-Op Ed Experience in CSCI

CSCI 406: 1-4 s.h.**Topics in Computer Science**

This course allows students and faculty to explore various topics in computer science that are not included in other course offerings. CSCI 406 may be taken more than once for credit with departmental approval. Offered periodically. Prereq: depends on topic to be studied.

CSCI 415: 4 s.h.**Computer and Network Security**

This course is designed to introduce students to topics which include attacks, standards, data integrity, symmetric key encryption, public key encryption, authentication, electronic mail security, IP security, Web security, database security, secure electronic transactions, network management security, malicious software and firewalls. Offered periodically. Prereq: C- or higher in CSCI 362.

CSCI 419: 4 s.h.**Mobile Device App Development**

This course will provide students with the skills necessary to design, develop, and deploy mobile device applications technology. Emphasis is placed on introducing students to the development environments, software and hardware limitations, and GUI development and event handling concepts when developing code to be executed on hand held devices. This course includes a laboratory component for example using Android/Java and IOS/iPhone/iPad Apps development environments. The successful student will learn the fundamental techniques for building mobile device apps including skills to write networked mobile apps that interact with remote services such as GPS, Bluetooth services, wireless hubs and devices, and web based client/server data systems. Pre-req: C- or higher in CSCI 362

CSCI 420: 4 s.h.**Software Engineering**

Overview of software engineering concentrating on phases of the software development life cycle including agile software development processes, management, stories and features, specifications, architecture design (APIs, scalability, microservices), specification-based testing, coverage-based testing, and formal verification. Software management topics covered include source control, issue tracking, continuous integration, test automation, quality assurance, and code reviews. Pre-req: C- or higher in CSCI 330, 362 and 366

CSCI 421: 4 s.h.**Web Application Development**

Introduction to building advanced web applications using modern approaches and technologies. Course covers development of responsive web applications using current industry-leading technology stacks and cloud-based services. Topics include asynchronous programming, an overview and use of cloud services, review of full stack technology, and development of real data-driven web applications. Pre-req: C- or higher in CSCI 362 and 366

CSCI 425: 4 s.h.**Human-Computer Interaction**

Design, evaluation and implementation of interactive computing systems for human use including study of the major phenomena surrounding them. Presents a broad overview of the field with an emphasis on interface development and evaluation. Offered periodically. Prereq: C- or higher in CSCI 362 required; CSCI 380 recommended.

CSCI 435: 4 s.h.**Compiler Construction**

Students implement a compiler for a simplified modern programming language. Theory of compiler construction, including finite-state automata, LL(1) grammars and top-down parsing. Project includes lexical and syntax analysis, name storage, scope and type analysis, error recovery and code generation. Advanced topics covered as time permits, including LR(k) grammars, bottom-up parsing, compiler generators (e.g., LEX and YACC) and code optimization. Offered periodically. Prereq: C- or higher in CSCI 330, 340, 362.

CSCI 450: 4 s.h.**Artificial Intelligence (W)**

Introduction to artificial intelligence including problem solving, search, heuristic methods, machine learning, knowledge representation, natural language processing, computer vision, expert systems, theorem proving and current applications. Concepts illustrated through programs developed in LISP or Prolog. Offered periodically. Prereq: C- or higher in CSCI 362 and ENGL 110.

CSCI 452: 4 s.h.**Data Mining**

An introduction to data mining, including data cleaning, the application of statistical and machine learning techniques to discover patterns in data, and the analysis of the quality and meaning of results. Machine learning topics may include algorithms for discovering association rules, classification, prediction, and clustering. Lab assignments provide practice applying specific techniques and analyzing results. An independent project provides students with the opportunity to guide a project from data selection and cleaning through to presentation of results. Pre-req: C- or higher in CSCI 366 and MATH 235 or 333 or 335.

CSCI 452H: 4 s.h.**Hon: Data Mining****CSCI 453: 4 s.h.****Large-Scale Data Analytics and Visualization**

A practical introduction to data analytics, visualization, and blending theory. Students will learn about and apply various clustering algorithms and techniques for dealing with noisy data, use a distributed data analytics framework, complete laboratory assignments using version control, and enforce reproducibility by having all science easily sharable. Students will become familiar with modern data analytics methods and explore real-world data sets. Visualization of results will be a large component of the course through interactive and static frameworks. Pre-req: C- or higher in CSCI 366 and MATH 235 or 333 or 335.

CSCI 456: 4 s.h.**Robotics and Computer Vision**

Intelligent robotic systems that deal with the physical world through visual, acoustic or tactile sensing. Fundamentals of robot vision, including image acquisition and camera geometry, pattern recognition, representation and analysis of shape, pixel neighborhoods, connectivity, distance measures, arithmetic operations on pixels and images, computations of area, centroid, moments, axis of least inertia, correlation techniques, histogram computation, manipulation of robot end effectors, robot task coordination and simple Cartesian robot manipulation. Offered periodically. C- or higher in CSCI 362.

CSCI 467: 4 s.h.**Analysis of Algorithms**

Theory and techniques of algorithm design and analysis. For design, students will study a variety of algorithmic solutions to problems from application areas including searching, selecting, sorting, graph theory, number theory and encryption. Design paradigms, including greedy method, divide and conquer, dynamic programming, backtracking and branch-and-bound. For analysis, students will use formal techniques to classify execution time of an algorithm. Software tools are used to measure resources used by a program during execution. Offered infrequently. Pre-req: C- or higher in CSCI 340.

CSCI 475: 4 s.h.**3D Game Prgmmg/Cmptr Animation**

Provide students with skills and solid technical foundation necessary to design, develop and deploy 3D games and related entertainment technology applications. Topics include 3D game programming, 3D graphics, game design, programming video game controllers, collision detection, force and motion calculations, networking multiplayer games, manipulating sound objects, physical modeling, projectiles, particle systems, physical constraints, deformation of virtual 3D objects, surface deformation, computer animation, forward and inverse kinematics, keyframe motion capture and procedural animation, and behavior-based animation and control. Offered periodically. Pre-req: C- or higher in CSCI 362.

CSCI 476: 4 s.h.**Parallel Programming**

Overview of parallel computing through study of parallel programming. Topics include message-passing, highly parallel computations, partitioning and divide-and-conquer strategies, pipelined and synchronous computations, load balancing and termination detection, programming with shared memory systems, parallel sorting algorithms, numerical algorithms, image processing, searching and optimization, and parallel programming using current technology. Offered periodically. Pre-req: C- or higher in CSCI 362, 370.

CSCI 479: 3 s.h.**Experimental**

Experimental

CSCI 489: 1-4 s.h.**Honors Course**

Honors Course

CSCI 498: 1-4 s.h.**Independent Study**

Independent study is available for well-qualified students. Students who receive approval for independent study are expected to complete a significant study or project in some area of computer science. A written report is required. Pre-req: departmental permission.

CSCI 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

Computer Science Minor

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Computer Science

Code	Title	Hours
Introductory Computer Science Courses		4
CSCI 140	Discrete Structures	
CSCI 101 or 121 may only be used if it is the first CSCI course taken. Otherwise, CSCI 140 will be required.		
CSCI 161	Introduction to Programming 1	4
CSCI 162	Introduction to Programming 2	4
CSCI 362	Data Structures	4
Computer Science Electives - Choose 1 class for at least 4 hours from:		4
Any 3-level CSCI course(s)		

Any 4-level CSCI course(s)

Total Hours 20

Computer Science, B.S.

MU's Computer Science program consists of two components, which explore topics such as computer graphics, artificial intelligence, networks, software engineering, databases, human-computer interaction, game programming and parallel processing. All Computer Science majors start with the core component to gain skills that are considered fundamental to the study of computer science. This includes grounding in various aspects of programming, computer architecture, discrete mathematical structures, computational models and data structures. The second component is an elective section in which students select courses based on personal interest and career goals from various advanced topics in computer science. This allows students to tailor their coursework to their own needs, while ensuring that every student receives the same fundamental background in the canonical areas of computer science.

Major in Computer Science, BS

Code	Title	Hours
Credits Required for Major		
	true	
Minimum GPA 2.0 for Major		
	true	
Minimum Residency 50% of Major Courses		
	true	
CSCI 140	Discrete Structures	4
CSCI 161	Introduction to Programming 1	4
CSCI 162	Introduction to Programming 2	4
CSCI 330	Programming Languages	4
CSCI 340	Computational Models	4
CSCI 362	Data Structures	4
CSCI 366	Database Systems	4
CSCI 370	Computer Architecture	4
CSCI 380	Operating Systems	4
CSCI 420	Software Engineering	4
Electives - Choose 12 hours from:		12
CSCI 300	Co-Op Ed Experience in CSCI	
Any CSCI 375-499 course(s)		
Note: This requirement may not be satisfied with CSCI 380 or CSCI 420.		
Up to 4 credits of Co-op (CSCI 300, 400, 500) are allowed. CSCI 406 Topics courses may be selected if it is 4 credits.		
Total Hours		52

Req Related for Computer Science, BS

Code	Title	Hours
MATHEMATICS		
Calculus I or Honors Calculus - Choose 1 of the following:		4-5
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	
MATH 235	Survey of Statistics	3
MATH 304	Matrix Algebra & Applications	4
Directed Math Elective - Choose 3 hours from:		3
MATH 211	Calculus 2	
MATH 236	Elements of Statistics 2	
PHIL 312	Mathematical Logic	
NATURAL/PHYSICAL SCIENCES		
undefined - Choose 6 hours from:		6
BIOL 100	General Biology	
BIOL 211	Concepts of Zoology	
BIOL 221	Concepts of Botany	
CHEM 111	Introductory Chemistry 1	
CHEM 112	Introductory Chemistry 2	
ESCI 221	Physical Geology	
ESCI 222	Historical Geology	
ESCI 241	Meteorology	
ESCI 245	Environmental Meteorology	
ESCI 261	Introduction to Oceanography	
PHYS 131	Physics 1 with Algebra	
PHYS 231	Physics 1 with Calculus	
PHYS 132	Physics 2 with Algebra	
PHYS 232	Physics 2 with Calculus	
At least 6 credits of Natural/Physical Science courses. If selecting Physics choose 131 OR 231, 132 OR 232.		

Total Hours 20-21

Data Science Minor

The Data Science minor has an emphasis on the foundations of computational thinking, problem solving, and how to represent, store, access, and modify data. Students can take a strict subset of Computer Science major courses to fulfill the minor requirements. Completion of 20 credit-hours (all four-credit courses) is required for the minor.

Regulations Governing Minor Course Work

- There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
- Only one course which counts toward your major may be counted toward your minor.
- Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
- At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
- No course needed for the minor may be taken Pass-Fail.
- One-half or more of the work required for the minor must be completed at Millersville University.
- No student may minor in his or her major.

Minor in Data Science

Code	Title	Hours
CSCI 140	Discrete Structures	4
CSCI 161	Introduction to Programming 1	4
CSCI 162	Introduction to Programming 2	4
CSCI 366	Database Systems	4
Data Mining or Lg-Scale Data Analytics Viz - Choose 1 of the following:		4
CSCI 452	Data Mining	
CSCI 453	Large-Scale Data Analytics and Visualization	
Total Hours		20

Earth Sciences

Departmental Student Learning Outcomes

Earth Science graduates exhibit knowledge and understanding of the component of the Earth system specific to their discipline so that they are prepared to embark on their careers and work effectively to address complex issues.

Earth Science graduates can employ evidenced-based scientific reasoning to critically think about problems in the Earth sciences. Students will engage in observation, inquiry, analysis, and synthesis to expand their knowledge and understanding of the Earth system in the courses and/or in student research.

Earth Science graduates demonstrate skill in the use of tools and the application of technologies appropriate to their discipline. Students will be able to evaluate the scientific problem to determine the appropriate tool and/or technology necessary to solve the problem and then employ that tool and/or technology effectively.

Earth Science graduates can effectively communicate their knowledge and understanding in both oral and written formats to diverse audiences.

Program Overviews & Workforce Projections

The Earth Sciences span the disciplines of climate, energy, environmental hazards, mineral and water resources, tectonics, and weather. The need for energy, environmental protection, and responsible land and water resource management is projected to spur demand for geoscientists in the future (Bureau of Labor Statistics 2020). Earth Sciences courses are rigorous and comprehensive utilizing the most current technology so that students not only develop but also apply knowledge of their discipline to solve complex problems. Our students engage in research of critical importance such as identifying key processes in the forecasting of snowfall or determining how fluids flow through fractured and porous rock units. Graduates from the Earth Sciences curriculum find satisfying careers in the atmospheric sciences, emergency management, and the environmental geo- and ocean sciences.

Our bachelor's degrees are designed to prepare students for the professional workforce or graduate education with qualifications and skills that will ensure success. The meteorology curriculum conforms to the American Meteorological Society's (AMS) guidelines for a B.S. in atmospheric science/meteorology, and the GS-1340 civil service requirements for government employment (e.g., National Weather Service, NOAA). The BS EEOS environmental geology option exceeds the academic requirements for professional licensure and prepares every student for success through extensive opportunities to apply their skills in the field. The BS EEOS program has ocean/bay access

at the Chincoteague Bay Field Station (CBFS), where students have opportunities for hands-on, feet-wet experiences, on shore and onboard research vessels. Academic minors in areas where the workforce is strong or emerging, such as data science, emergency management, environmental policy, geospatial sciences, mathematics, broadcast communication, government and political affairs, and heliophysics and space weather, are encouraged but not required.

Millersville University is a senior partner of the CBFS, institutional member of the American Geophysical Union (AGU), American Geosciences Institute (AGI), American Meteorological Society (AMS), International Association of Emergency Managers (IAEM), National Weather Association (NWA), University Corporation for Atmospheric Research (UCAR), and an educational partner of the Weather Risk Management Association (WRMA). The University is a participant in the National Weather Service (NWS) StormReady® program and the Mid-Atlantic Regional Association Coastal Observing System, and the AMS Student Chapter is a member of the Weather-Ready Nation (WRN). For more information, see www.millersville.edu/esci (<https://www.millersville.edu/esci/>)

the programs

- Earth Science, B.S.E. (p. 302)
- Earth Sciences Minor (p. 303)
- Emergency Management, B.S. (p. 304)
- Environmental Earth & Ocean Science, B.S. - Environmental Earth Sciences Option (p. 304)
- Environmental Earth & Ocean Science, B.S. - Environmental Geology Option (p. 304)
- Environmental Earth & Ocean Science, B.S. - Environmental Ocean Sciences Option (p. 305)
- Environmental Hazards and Emergency Management Minor (p. 305)
- Geology Minor (p. 305)
- Heliophysics and Space Weather Minor (p. 305)
- Hydrology Minor (p. 306)
- Meteorology Minor (p. 306)
- Meteorology, B.S. (p. 307)
- Oceanography Minor (p. 307)

the faculty

Blumberg, William; Assistant Professor
College of Science and Technology
B.S., University of Oklahoma, 2011; M.S, Ibid., 2013; Ph.D., Ibid., 2018

Casas, Eleanor; Assistant Professor
College of Science and Technology
B.S., Valparaiso University, 2015; M.S., Colorado State University, 2018;
Ph.D., Ibid., 2022

Earman, Samuel; Associate Professor
College of Science and Technology
B.A., Macalester College, 1989; M.S., University of Nevada, 1996; Ph.D., New Mexico Institute of Mining and Technology, 2004

Hagelgans, Duane; Professor
College of Science and Technology
B.S., Millersville University, 1998; J.D., Widener University School of Law, 2003

Kumar, Ajoy; Professor
College of Science and Technology
B.S., University of Madras (India), 1985; M.S., Ibid., 1987; Ph.D., Old Dominion University, 1996

Marquez, L; Professor
College of Science and Technology
B.A., DePauw University, 1991; M.S., Northwestern University, 1994, Ph.D., Ibid., 1998

Sikora, Todd; Professor
College of Science and Technology
B.S., The Pennsylvania State University; M.S., Ibid., 1992; Ph.D., Ibid., 1996

Vaillancourt, Robert; Professor
College of Science and Technology
Ph.D., University of Rhode Island, 1999

Walsh, Talor; Associate Professor
College of Science and Technology
B.A., Oberlin College, 2007; M.S., University of Rochester, 2012; Ph.D., Ibid., 2015

Yalda, Sepideh; Professor
College of Science and Technology
B.S., Saint Louis University, 1991; M.S., Ibid., 1993; Ph.D., Ibid., 1997

the courses

EHEM 201: 3 s.h.

Introduction to Emergency Management (G3)

An introduction into all aspects of emergency management from the origins through the civil defense era to the present day with a look towards the future of the global aspect of emergency management. Students will learn the basics of emergency management, how to function as an effective emergency manager and how to manage an emergency management agency. Prereq: ENGL 110.

EHEM 201H: 3 s.h.

H: Intro to Emergency Mgmt (G3)

EHEM 205: 3 s.h.

Natural Hazards Risk Assessment and Mitigation

An exploration of risk assessment methodologies for natural disasters, review of natural hazard mitigation and its role in disaster management; analysis of past and current government and private sector programs; and an examination of new approaches. Natural hazard mitigation implementation approaches including those in the form of community-wide programs and to relate the hazard mitigation processes to disaster planning.

EHEM 205H: 3 s.h.

Hon: Hazards Assmt & Mitigatn

EHEM 300: 3-12 s.h.

Co-Op Ed Experience in EHEM

Co-Op Ed Experience in EHEM

EHEM 305: 3 s.h.

Disaster Management & Community Risk Reduction (G3)

Study of current trends of building disaster resilient and disaster resistant communities to prevent the size of the devastation from these disasters. An examination into prevalent legislation that controls and shapes both building construction and land use planning, technological advances for building a disaster resistant community and legal issues of community planning. Prereq: EHEM 201

EHEM 305H: 3 s.h.

Hon: Dis Mgmt & Comm Risk Redu (G3)

EHEM 309: 3 s.h.

Disaster Response & Recovery

An in-depth treatment of emergency management practices as it applies to local, state, tribal, territorial, and federal disaster response in the context of short-term and long-term community recovery. The disaster response and recovery efforts will be addressed with a foundation of statutory requirements, key concepts, core principles, roles and responsibilities of leadership ranging from the individual to the Federal government and across the public, private, and the non-profit sectors.

EHEM 309H: 3 s.h.

Hon: Disaster Resp/Recovery

EHEM 315: 3 s.h.

Business Continuity and Continuity of Operations

Critical dependence of private and public organizations on disaster vulnerable technologies and operations as a result of natural and man-made disasters. Students will have the opportunity to review the contemporary plan development strategies and methodologies and to produce working plans that provide preventive measures to minimize the impact of all disasters and provide an organized response to ensure continuity of operations. Concepts of business continuity management system consisting of risk identification and mitigation, business impact analysis, development of continuity strategies, training and awareness, plan creation, maintenance and testing will be emphasized.

EHEM 316: 3 s.h.

Intro to Terrorism, WMD and Homeland Security (G3)

An introduction into all aspects of terrorism, weapons of mass destruction and homeland security in our modern world. A study of the overall history of terrorism, legislation that oversees emergency management, and various methods for combating terrorism. How to manage an emergency management agency through modern age terrorism threats. Prereq: EHEM 201.

EHEM 319: 3 s.h.

Emergency Management Planning

Provides students with an in-depth analysis of planning methodologies and constructs as well as pitfalls and limiting factors in the development and execution of emergency management plans at the strategic, operational and tactical levels. Pre-requisite EHEM 201

EHEM 329: 3 s.h.

Special Topics in Emergency Management

In-depth investigation and development of one or more topics of current or emerging not addressed as part of the existing curriculum. Prereq: EHEM 201 or EHEM 205

EHEM 393: 3 s.h.

Field Experience Practicum

A capstone experience in which emergency-management knowledge and skills are applied and integrated within a field experience. Those already working within an emergency-management-related career can use their current position as the basis for completing a project applicable to enhancing their current skills and applying best practices. For BS Emergency Management majors and Environmental Hazards and Emergency management minors only. Senior level and 18 credits in EHEM courses required. Permission of instructor required to enroll.

EHEM 400: 3-12 s.h.

Co-Op Ed Experience in EHEM

Co-Op Ed Experience in EHEM

EHEM 489: 1-3 s.h.

Hnrs:

EHEM 498: 1-4 s.h.

Ind Stdy:

Ind Stdy:

EHEM 499: 1-3 s.h.

Hnrs Thesis:

ENVI 330: 3 s.h.

Environmental Statistics & Risk Assessment

Methods of statistical analysis and risk assessment applied to environmental science, including characteristics of environmental quality data; statistical measures and distributions; identifying system changes; hypothesis testing of environmental quality; risk, hazards and exposures; bioassays. Team-taught. Offered periodically.

ENVI 495: 3 s.h.

Environmental Clinic

A capstone course devoted to the definition and assessment of an environmental problem from watershed, airshed, biodiversity and human health perspectives. Case studies will be used as models of how environmental problems can be defined/documented and solutions can be implemented. Student teams will define a problem and implement a solution using interdisciplinary approaches while working with a faculty team. Students are encouraged to take this course at the conclusion of the minor. Offered periodically. Prereq: 12 credits of environmental science minor.

ESCI 101: 3 s.h.

Earth Systems & Natural Hazards (G2)

The scientific understanding of Earth systems as the causes of natural disasters, such as earthquakes, volcanoes, landslides, hurricanes, tornadoes, floods and tsunamis. 3 hrs. lec. Does not count toward Meteorology major.

ESCI 101H: 3 s.h.

Hon: Earth Sys/Nat Hzrds (G2)

ESCI 102: 3 s.h.

Origin and Evoltn of the Earth (G2)

The origin and evolutionary development of the universe, solar system and planet Earth. Geophysical behavior of the solid earth, including volcanism, mountain building and other manifestations of the Earth's dynamic interior. Does not count toward Meteorology major.

ESCI 104: 3 s.h.

The World Ocean (G2)

A broad overview of the biological, chemical, geological and physical characteristics of the ocean, the importance of the oceans to mankind and the environment. Does not count toward Meteorology major.

ESCI 104H: 3 s.h.

Hnrs:The World Ocean (G2)

ESCI 105: 1 s.h.

World Ocean Laboratory (G2)

Methods and techniques used in the marine sciences, including introduction to navigation, plotting and evaluation of data pertaining to salinity, temperature, dissolved oxygen, primary productivity and current velocity. 2 hrs. lab. Mandatory coreq: ESCI 104. ESCI 104/105 together constitute a single laboratory course in earth sciences for purposes of the general education curriculum. Does not count toward Meteorology major.

ESCI 107: 3 s.h.

The Atmosphere (G2)

Origin and evolution of the atmosphere; solar and terrestrial radiation; horizontal and vertical structure of the atmosphere; temperature, pressure and water in the air; vertical motion; cloud formation and cloud type; circulation systems, severe weather, climate and climate change. Does not count toward Meteorology major. Credit may not be received for ESCI 107 if ESCI 109 is taken, these are equivalent courses and will be treated as repeated course credit.

ESCI 107H: 3 s.h.

Hon: The Atmosphere (G2)

ESCI 109: 4 s.h.

Atmosphere with Lab (G2)

Origin and evolution of the atmosphere; solar and terrestrial radiation; horizontal and vertical structure of the atmosphere; temperature, pressure and water in the air; vertical motion; cloud formation and cloud type; circulation systems, severe weather, climate and climate change. Does not count toward Meteorology major. Credit may not be received for ESCI 109 if ESCI 107 is taken, these are equivalent courses and will be treated as repeated course credit.

ESCI 120: 3 s.h.

Environmental Geology (G2)

Exploration of Earth systems and their relation to society, with focus on natural hazards and natural resources. Does not count toward Meteorology major.

ESCI 121: 1 s.h.

Environmental Geology Lab (G2)

Laboratory exploration of Earth system impacts on society, human influences on Earth. Mandatory coreq. ESCI 120. ESCI 120/121 taken concurrently constitute a single laboratory course in earth science for purpose of the general education curriculum. Does not count toward Meteorology major.

ESCI 121H: 1 s.h.

Hon: Environ Geology Lab (G2)

ESCI 179: 3 s.h.

Experimental

Experimental

ESCI 202: 3 s.h.

The Earth in Space (G2)

A scientific experience directed toward an understanding of the dynamic earth, its origin and evolution and its place in the universe. Physical concepts from classical and modern physics, astronomy, cosmology, and the earth and atmospheric sciences, couched in the language of algebra and supported by observation, experiment and theory. Prereq: MATH 101 with C- or higher or MPT 151 with C- or higher, or MATH 151 or MATH 161 or MATH 163 or MATH 204 (151, 161, 163, 204, grade of C- or higher) or permission of instructor.

ESCI 221: 4 s.h.

Physical Geology (G2)

The nature and distribution of materials of the solid Earth - the dynamic processes by which they are formed and modified and the character of resulting geologic structures. 3 hrs. lec., 2 hrs. lab. Offered in fall, spring.

ESCI 221H: 4 s.h.

Hnrs:Physical Geology (G2)

ESCI 222: 4 s.h.**Historical Geology (G2, W)**

Methods of interpreting the geologic rock record, chronologic study of earth history and study of fossils as records of ancient life. Emphasis on the history of North America. 3 hrs. lec., 2 hrs. lab, field trips required. Prereq: C- or higher in ESCI 221.

ESCI 222H: 4 s.h.**H:Historical Geology (G2)****ESCI 225: 3 s.h.****Geomorphology**

Processes of landscape development in theory and in the context of the regional geomorphology of North America. 3 hrs. lec. Offered in fall of odd years. Prereq: C- or higher in ESCI 221.

ESCI 226: 3 s.h.**Geology of Earth and Energy Resources (G2)**

Investigation of the geologic origin of Earth resources important to society (including energy resources, metals, industrial materials and evaporites); methods of resource evaluation, extraction and processing; and environmental impacts of resource extraction/use. 3 hrs. lec. Offered spring of even years.

ESCI 241: 4 s.h.**Meteorology (G2)**

Atmospheric structure and motions; physics of weather processes; weather and motion systems. 3 hrs. lec., 2 hrs. lab. Coreq or Prereq: C- or higher in MATH 161 or 163H.

ESCI 245: 3 s.h.**Environmental Meteorology (G2)**

Practical meteorological problems in air pollution, atmospheric experimentation and other aspects of the human environment. Instrumentation and data analysis methods in applied meteorology. 2 hrs. lec., 2 hrs. lab. Offered in spring and online in summer. Prereq: C- or higher in MATH 110 or 160 or 161 or 163H.

ESCI 261: 4 s.h.**Introduction to Oceanography (G2)**

A survey of the field of oceanography including modern topics in the four subdisciplines of physical, geological, chemical, and biological oceanography. 3 hrs. lec., 2 hrs. lab. Overnight field trip may be required at discretion of professor. Prereq: C- or higher in MATH 101 (college algebra) or math placement into MATH 160 or higher.

ESCI 267: 3 s.h.**Field Methods in Oceanography**

Work on board small research vessels in the dynamic marine environment; use and application of standard oceanographic instruments and sampling devices; opportunities for independent research. 1 hr. lec., 4 hrs. lab. Offered only in summer at the Chincoteague Bay Field Station. Prereq: C- or higher in ESCI 261.

ESCI 279: 3 s.h.**Experimental**

Experimental

ESCI 281: 3 s.h.**GIS Applications for Earth Sci**

Introduction to the basic concepts of geospatial information systems applications for earth sciences students. Emphasis is on the use of GIS applications for solving problems in the earth sciences. Limited to earth sciences majors or minors who have completed one of the introductory earth sciences courses for majors. ESCI 281 and GEOG 295 may not both be taken for credit. 3 hrs. lec. Prereq: ESCI 221, 241 or 261.

ESCI 282: 3 s.h.**FORTRAN Programming for Earth Sciences Applications**

Programming in computational methods emphasizing FORTRAN applied to the earth sciences; numerical solution of equations of motion; statistical properties of digital images; analysis of periodical phenomena; use of National Center for Atmospheric Research graphics library. 2 hrs. lec., 2 hrs. lab. Offered in fall. Prereq: MATH 211 and PHYS 231.

ESCI 300: 3-12 s.h.**Co-Op Ed Experience in ESCI**

Co-Op Ed Experience in ESCI

ESCI 321: 4 s.h.**Structural Geology**

Recognition, interpretation and illustration of geological structures; kinematic and dynamic analysis of rock deformation; stress, strain and deformation mechanisms. 3 hrs. lec., 3 hrs. lab., field trips required. Prereq: C- or higher in ESCI 221 and completion of MATH 160.

ESCI 322: 3 s.h.**Environmental Hydrology**

Theory and practice of quantifying hydrologic phenomena; field methods, data manipulation and environmental applications. 2 hrs. lec., 2 hrs. lab. Offered spring. Prereq: minimum of 45 credits, C- or higher in MATH 101 and any 200-level science course that counts towards a science degree, or permission of instructor.

ESCI 326: 4 s.h.**Sedimentation and Stratigraphy (W)**

The origin and composition of sediments and sedimentary rocks, study of the processes involved in the sedimentary cycle, environments of deposition, and the interpretation of ancient environments from sedimentary rocks. 3 hrs. lec., 3 hrs. lab, field trips required. Prereq: ESCI 221 and ENGL 110

ESCI 327: 4 s.h.**Earth Materials**

Identification, crystal chemistry, crystallography and occurrence of common minerals; optical theory and interaction of light with crystals; mineral and rock identification through use of transmitted polarized light; identification, formation, and occurrence of common rocks. 3 hrs. lec., 3 hrs. lab. Offered fall of odd years. Prereq: C- or higher in 221.

ESCI 329: 3 s.h.**Aqueous Geochemistry (W)**

Inorganic chemistry of surface waters; equilibrium thermodynamics, solubility and stability relationships of silicates and calcium carbonates; kinetics, acid-base reactions, redox equilibria; contaminants transport in natural waters; surficial materials weathering. 3 hrs. lec. Offered spring of odd years. Prereq: ESCI 221, CHEM 112; ENGL 110.

ESCI 340: 3 s.h.**Cloud Physics & Precip Process**

Cloud types and physical characteristics; cloud formation processes; precipitation types and formation processes; vertical stability and its relation to types of cloud and precipitation formation; lightning and other forms of atmospheric electricity; atmospheric optical phenomena such as rainbows, halos, mirages, etc. 3 hrs. lec. Prereq: C- or higher in ESCI 241, or PHYS 231. Coreq or Prereq: MATH 211.

ESCI 340H: 3 s.h.**H:Physical Meteorology**

ESCI 341: 3 s.h.**Atmospheric Thermodynamics**

First and second principles of thermodynamics, water-air systems, equilibrium of small droplets and crystals, thermodynamic processes in the atmosphere, atmospheric statics, vertical stability and aerological diagrams. 3 hrs. lec. Prereq: C- or higher in ESCI 241. Coreq or Prereq: MATH 311.

ESCI 342: 3 s.h.**Atmospheric Dynamics 1**

Centered difference approximations, total derivative, and basic kinematics; fundamental and apparent forces; mass and momentum conservation; equations of motion and their applications; circulation, vorticity, and divergence. Prereq: C- or higher in ESCI 241 and PHYS 231. Coreq or Prereq: MATH 311.

ESCI 343: 3 s.h.**Atmospheric Dynamics 2**

Ageostrophic wind; quasi-geostrophic theory; theory and properties of atmospheric waves, including gravity waves, sound waves, internal waves, inertial-gravity waves; geostrophic adjustment; atmospheric instabilities, including inertial/slantwise instability, barotropic and baroclinic instability. 3 hrs. lec. Offered in spring. Prereq: ESCI 342.

ESCI 344: 3 s.h.**Tropical Meteorology**

General circulation of the tropics; energy balance; boundary layer; cumulus convection; survey of tropical disturbances including tropical cyclones. 3 hrs. lec. Prereq: C- or higher in ESCI 341, 342.

ESCI 344H: 3 s.h.**H:Tropical Meteorology**

H:Tropical Meteorology

ESCI 345: 3 s.h.**Atmospheric Radiative Transfer**

Quantitative description and analysis of atmospheric radiation and its interaction with atmospheric constituents (gases, aerosol, and clouds) and the land and ocean surfaces. Topics include properties of radiation, the electromagnetic spectrum, reflection and refraction, radiative properties of natural surfaces, thermal emission, atmospheric transmission, atmospheric emission (the Schwarzschild Equation) and absorption, scattering and absorption by molecules and particles, radiative transfer with multiple scattering, numerical modeling of atmospheric radiation, relevance for climate and weather. Prereq: C- or higher in ESCI 241, or PHYS 231. Coreq or Prereq: MATH 311.

ESCI 347: 3 s.h.**Satellite Meteorology**

Orbital and radiative transfer physics applied to satellite meteorology systems. Contemporary applications of satellite remote sensing of the atmosphere, including the retrieval of cloud microphysics and precipitation, the generation of atmospheric vertical profiles of temperature and moisture, the retrieval of wind, and image interpretation in the context of weather forecasting. 3 hrs. lec. Offered in fall of even years. Prereq: ESCI 241; MATH 161 or MATH 163.

ESCI 347H: 3 s.h.**H:Satellite Meteorology****ESCI 348: 2 s.h.****Broadcast Meteorology**

Preparation and presentation of weather information to the public; graphics preparation, television and radio weathercasting; video production. 1 hr. lec. 2 hrs. studio. Offered in spring. Prereq: C- or higher in ESCI 241 or COMM 320.

ESCI 349: 3 s.h.**Chemistry of the Atmosphere (P)**

Theory, application, methods of analysis and instrumentation relevant to a study of the chemistry of the atmosphere. 3 hrs. of integrated lecture/lab/ working group activities. May be used as an elective in meteorology and environmental chemistry if not counted as "P" course. Prereq: Minimum of 36 credit hours, COMM 100, ENGL 110; junior status; CHEM 104 or CHEM 111; and PHYS 132 or PHYS 232.

ESCI 349H: 3 s.h.**Hon: Chem of the Atmosphere (P)****ESCI 350: 3 s.h.****History of Meteorology (D, P)**

Overall intellectual and institutional development of meteorology from Aristotle to present, with emphasis on the 20th century. Historical overviews of dynamic meteorology and numerical weather prediction, observational tools (the history of radar and satellites) and computational devices, cloud microphysics and dynamics, hurricanes, convective storms and climatology. Spotlights key scientists and their role in the advancement of atmospheric sciences. 3 hrs. lec. Prereq: ESCI 107, 109, or ESCI 241; and HIST 101 or 102 or 106, or 340; COMM 100, ENGL 110 and junior status.

ESCI 350H: 3 s.h.**H:History of Meteorology (P)**

H:History of Meteorology

ESCI 362: 3 s.h.**Marine Geology**

Sedimentary and tectonic characteristics of the continental margins and deep ocean basins; principles and processes of sediment transport and deposition in the marine environment; applications of geophysical methods at sea; marine mineral resources. 3 hrs. lec. Offered only in summers of even years at the Chincoteague Bay Field Station. Prereq: C- or higher in ESCI 261 or 221.

ESCI 363: 3 s.h.**Chemical Oceanography**

Oceanic chemical phenomena, including structure of water, salinity, sources and sinks of chemical constituents; chemical interactions at interfaces between hydrosphere and atmosphere, lithosphere and biosphere; biogeochemical cycles of nutrients; the carbon-dioxide-carbonate system; origin and history of seawater; anthropogenic effects. Prereq: C- or higher in ESCI 261 and CHEM 111.

ESCI 366: 3 s.h.**Marine Resources and Policy (D, P)**

This course will give the student a broad background in Marine Resources including biological, transportation, oil and gas, methane hydrates, minerals and freshwater, recreation, endangered species, energy and waste disposal. The course will also give an overview on National and International Law Applied to the marine environment. Topics on Marine policies including marine environmental policy, International fisheries policy, Marine transportation and safety policy, etc. will be discussed and related to geographical, socio-economic and political issues affecting Marine Resources, Sustainability and Marine Conservation. News clips, articles in journals, case studies of issues relevant to the topics above will be discussed in an open, free and debate like atmosphere that is designed to develop student's critical thinking skills in a deliberate and structured way. Prereq: COMM 100 or 100H, ENGL 110 or 110H, junior standing and any 200-level course in ESCI, BIOL or GEOG.

ESCI 366H: 3 s.h.**Hon: Marine Resources/Policy (D, P)**

ESCI 369: 3 s.h.**Physical Oceanography and Climate**

Physical properties of seawater; mass and energy budgets of the ocean; typical distribution of water characteristics, global balances; the conservation equations; equations of motion; fluid motion in rotating systems. Conservation of vorticity; wind and thermohaline circulation; currents and eddies; wind-generated waves; tides and other waves; Exchange of buoyancy and heat fluxes in the atmosphere-ocean boundary layer; Climate Change and the Ocean. A required course for Ocean Sciences and Coastal Studies majors and elective for other earth sciences programs. Combination of lecture and laboratory exercises. 2 hrs. lec., 2 hrs. lab. Offered in fall of odd years. Prereq: ESCI 261 or ESCI 241; MATH 161, PHYS 131 or PHYS 231, or permission of Instructor. 3.000 Credit hours 2.000 Lecture hours 2.000 Lab hours.

ESCI 379: 1-4 s.h.**Experimental**

Experimental

ESCI 380: 3 s.h.**Remote Sensing & Image Interpretation**

Principles of remote sensing; fundamentals of image visualization; radiative transfer equation; use of environmental, meteorological and oceanographic satellites; satellite algorithm and parameter estimation; use of Environment for Visualizing Images (ENVI) software for image analysis and interpretation. Basic computer literacy is assumed. 2 hrs. lec., 2 hrs. lab. Research project is required. Prereq: ESCI 221 or 241 or 261.

ESCI 382: 3 s.h.**Water Wars: Science and Policy (D, P)**

Interdisciplinary investigation of the causes and solutions of water crises. Topics such as the sources of fresh water, the use and consumption of water, and regional and international conflict over water rights will be discussed. Current water crises from across the globe will be used to highlight societal differences in water use and preservation. Prereq: Minimum of 60 credits, ENGL 110 and any ESCI course or permission of instructor.

ESCI 382H: 3 s.h.**H: Water Wars: Science & Policy (D, P)****ESCI 385: 3 s.h.****Global Climate Change: Sci & Policy (P)**

Evolution of the Earth's habitable atmosphere and oceans; mechanisms that control climate processes and change; past global climate change as deciphered through paleoclimatic and paleoceanographic methods; recent rapid climate fluctuations and possible future changes. 3 hrs. lec. Prereq: ENGL 110; ESCI 241 or 261 or GEOG 230.

ESCI 385H: 3 s.h.**H: Climate Chng: Sci & Policy (P)****ESCI 386: 3 s.h.****Sci Prg Lang:**

Use of scientific programming languages for analysis and display of data. Topics include: data types; syntax and control statement; use of plotting and graphics libraries; reading and writing data sets in ASCII, binary, NetCDF, and other formats; spectral analysis; statistical operations; matrix operations. 2 hrs. lec., 2 hrs. lab. Offered in spring. Prereq: ESCI 282 or CSCI 161; MATH 211 and PHYS 231.

ESCI 390: 1-4 s.h.**Topics in the Earth Sciences**

Detailed investigation of a topic of current research interest. Topic to be announced each time course is offered. Credit and meeting hours variable, depending on topic offered. Offered infrequently. Prereq: completion of 60 credits.

ESCI 390H: 1-4 s.h.**Hon: Topics in Earth Science****ESCI 400: 3-12 s.h.****Co-Op Ed Experience in ESCI**

Co-Op Ed Experience in ESCI

ESCI 422: 3-6 s.h.**Geological Field Mapping**

Examination and interpretation of geologic materials and structures in the field. Students prepare a geologic map, stratigraphic column and structural cross-sections of an assigned field area. Prereq: C- or higher in ESCI 321.

ESCI 423: 3 s.h.**Applied Geophysics**

Geophysical methods applied to environmental assessment, resource exploration and civil engineering issues. Topics covered include seismic refraction and reflection, ground-penetrating radar, electrical resistivity, gravity, and geomagnetism. 2 hrs. lec., 2 hrs. lab. Offered fall of even years. Prereq: minimum of 60 credits, C- or higher in MATH 101 and any 200-level science course that counts towards a science degree, or permission of instructor.

ESCI 426: 3 s.h.**Groundwater Resources and Contamination**

Occurrence and behavior of groundwater; groundwater contamination and remediation; groundwater resource assessment, including aquifer test design and analysis; introduction to groundwater modeling. 2 hrs. lec., 2 hrs. lab. Prereq: minimum of 60 credits, C- or higher in MATH 101 and any 200-level science course that counts towards a science degree, or permission of instructor.

ESCI 428: 3 s.h.**Planetary Geology (W)**

Terrestrial geology in the context of the solar system; geochemical evolution of the solar nebula; planetary formation and evolution; comparative planetology, meteoritics; asteroid/cometary impact phenomena. 3 hrs. lec. Offered infrequently. Prereq: ENGL 110, ESCI 222 and CHEM 111.

ESCI 440: 3 s.h.**Space Weather and Environment**

In-depth study of the space environment between the earth and sun; solar-terrestrial interactions; physics of the sun and space weather; observations, modeling and prediction of space weather events; effects on life, property and infrastructure. 3 hrs. lec. Offered in spring of even years. Coreq: MATH 365; Prereq: ESCI 342 and either ESCI 340 or PHYS 233 or permission of instructor.

ESCI 440H: 3 s.h.**Hon: Space Weather/Environment**

ESCI 441: 3 s.h.**Synoptic Meteorology Lecture-Laboratory**

Application of atmospheric dynamics and atmospheric physics to the theoretical and empirical investigation of mid-latitude synoptic-scale meteorological processes. Topics include the diagnosis of synoptic-scale vertical motions, the circulation at fronts and the life cycle of the extratropical cyclone. 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: ESCI 340, 341, 343.

ESCI 442: 2 s.h.**Adv Wthr Anlys/Forecstng Pract**

Advanced synoptic and mesoscale weather analysis and forecasting skills. Students perform weather analysis exercises designed to complement the forecast process. Students prepare probabilistic meteorological forecasts and lead post-forecast discussions focused on lessons learned. 1 hr. lec., 2 hrs. lab. Offered in spring. Prereq: C- or higher in ESCI 441 and one semester of Campus Weather Service or by permission of instructor. Coreq: ESCI 444.

ESCI 443: 3 s.h.**Climate Dynamics (W)**

A comprehensive treatment of the components of the climate system, feedback mechanisms and interactions; mean state of the climate system; a detailed and in-depth treatment of the earth-atmosphere radiation balance and general circulation; natural and anthropogenic forcings and their effect on the climate system; climate models; and the current state of climate-observing networks and model validation. 2 hrs. lec., 2 hrs. applications and analysis. Offered in spring. Prereq: ESCI 343 or 369, ENGL 110.

ESCI 444: 4 s.h.**Mesoscale Meteorology**

Application of atmospheric dynamics and atmospheric physics to the theoretical and empirical investigation of mid-latitude mesoscale meteorological processes. Topics include atmospheric sounding analysis, pressure perturbations, mesoscale instabilities, the atmospheric boundary layer, air mass boundaries, convection initiation, organization of convection and tornadoes. 4 hrs. lec. Prereq: ESCI 441.

ESCI 445: 3 s.h.**Num Modeling of Atmos and Ocn**

Methods and mathematical concepts of numerical weather and ocean prediction models. Students must be able to program in one of the following languages: Fortran, C++, or IDL. 3 hrs. lec. Offered in spring of odd-numbered years. Prereq: ESCI 282 or CSCI 161. Coreq or Prereq: ESCI 343 or 365.

ESCI 446: 3 s.h.**Stats & Decision Making in Earth Science**

Descriptive and inference statistics, uncertainty, review of probability, empirical distributions, exploratory data analysis, parametric probability distributions, frequency and Bayesian inference, statistical forecasting and forecast verification, statistics in decision making, time series, multivariate statistics and normal distribution (MVN), principal component analysis (EOF), canonical correlation analysis (CCA), discriminant analysis, cluster analysis, thriving on the edge of chaos, effective complexity. Pre-req: C- or higher in MATH 211

ESCI 447: 3 s.h.**Meteorological Instrumentation (W)**

Devices and platforms used to gather meteorological data; methods of data acquisition, reduction, error analysis and quality assurance; description of instrumentation, measurement techniques, observing systems and their deployment. 2 hrs. lec., 2 hrs. lab. Offered in fall of odd years. Prereq: ENGL 110, PHYS 232 and MATH 235.

ESCI 447H: 3 s.h.**H:Meteorological Instrumentati (W)****ESCI 448: 3 s.h.****Boundary Layers and Turbulence**

Mean boundary layer characteristics; turbulence and its spectrum; governing equations to turbulent flow; prognostic equations for turbulent fluxes and variances; TKE; turbulence closure schemes; similarity theory; simulation techniques; convective and stable boundary layers; boundary layer clouds. 3 hrs. lec. Offered in spring of even years. Prereq: C- or higher in ESCI 342 and MATH 211.

ESCI 449: 3 s.h.**Radar Meteorology**

Algorithms used in the display and interpretation of weather radar data; theory of electromagnetic radiation, principles of radar operation, Doppler radar and interpretation techniques; wind velocity, rainfall rates and detection of individual cells, multiple cells and turbulence. 3 hrs. lec. Offered in spring of even years. Prereq: C- or higher in ESCI 241, MATH 311. Coreq or Prereq: ESCI 342.

ESCI 449H: 3 s.h.**Hon: Radar Meterology****ESCI 464: 3 s.h.****Ocean Ecosystems (W)**

Advanced ocean sciences course investigating the physical, chemical and biological characteristics of the major pelagic ocean biomes from the polar through equatorial regions of the world ocean. Emphasis will be on the important marine plankton functional groups and how their abundances and rates of production are controlled by the circulation patterns of the ocean, ocean turbulence, food web structure, density stratification, the supply of nutrients and the availability of sunlight, and water transparency. 3 hrs. lec. Prereq: ESCI 363 and ESCI 369 or permission of instructor.

ESCI 465: 3 s.h.**Biological Oceanography**

Intensive summer lecture and field course teaching the physical, chemical and biological factors controlling the structure and dynamics of marine ecosystems. Classroom instruction focuses on theoretical principles concerning the environmental control of phytoplankton communities by sunlight, nutrients and grazing. The dynamics and complexity of marine food webs including the phytoplankton, zooplankton and upper trophic levels. Laboratory and field instruction focuses on ocean monitoring and sampling from research vessels, biomass determination and identification of key plankton species, measurement of the rates of net and gross primary production using oxygen light-dark bottle experiments, and optical and chemical techniques of determining phytoplankton biomass and species composition. Approximately 40-50% of course time is spent in field. Prerequisites: C- or higher in ESCI 261 and completion of BIOL (211 or 221), or permission of instructor.

ESCI 466: 3 s.h.**Environmental Oceanography**

A comprehensive examination of some of the pressing ocean-related environmental issues of the 21st century using critical thinking and quantitative approaches. Emphasis on how human activities are changing ocean ecosystems and environments, and how sound scientific reasoning can reveal true cause-and-effect relationships that then may lead to viable solutions. Includes field and laboratory projects teaching modern techniques of water quality analysis, and case studies of provocative real-world marine environmental problems. 2 hrs. lec., 2 hrs lab. Prereq: ESCI 261 or permission of the instructor.

ESCI 468: 3 s.h.

Ocean Data Analysis and Presentation

Advanced ocean sciences course covering the theory behind the most commonly used techniques of ocean sampling and the analysis and presentation of oceanographic data. In this course we will cover the meaning of data and the common types of oceanographic data, methods of ocean data collection, the meaning and importance of metadata, databases in ocean science community, the idea of geospatial data and the importance of frame of reference and time and space scales of interest, the variety of ways to analyze and present oceanographic data, and how to present data to maximize its informational content. 2 hrs. lec., 2 hrs. lab. Prereq: ESCI 261 or permission of instructor.

ESCI 479: 4 s.h.

Experimental

Experimental

ESCI 489: 1-4 s.h.

Honors Course

Honors Course

ESCI 498: 1-4 s.h.

Independent Study

Supervised independent research in the earth sciences. Subject determined jointly by student and the problem supervisor. Permission of department chair and school dean required.

ESCI 499: 1-4 s.h.

Departmental Honors

Departmental Honors

ESCI 500: 3-12 s.h.

Co-Op Ed Experience in ESCI

Co-Op Ed Experience in ESCI

Earth Science, B.S.E.

Interested in pursuing a career as a high school teacher? The Department of Earth Sciences offers a 126-credit program leading to the Bachelor of Science in Secondary Education in the Earth Sciences.

This program is for students interested in pursuing careers as a high school educator in the field of earth sciences including environmental earth science, geology, meteorology, and oceanography. Students obtain certification in earth science upon completion of the program and successful completion of state examinations. Education courses and student teaching experiences are offered in conjunction with the department of Educational Foundations in the College of Education and Human Services (Educational Foundations | Millersville University (<https://www.millersville.edu/edfoundations/>)).

Major in Earth Science, BSE

Code	Title	Hours
Credits Required for Major		
	true	
Minimum GPA 2.0 for Major		
	true	
Minimum Residency 50% of Major Courses		

	true	
ESCI 221	Physical Geology (C- minimum)	4
ESCI 222	Historical Geology	4
ESCI 241	Meteorology (C- minimum)	4
ESCI 245	Environmental Meteorology	3
ESCI 261	Introduction to Oceanography (C- minimum)	4
Ocean Resources		3
ESCI 366	Marine Resources and Policy	
Planetary Geology or The Earth in Space - Choose 1 of the following:		3
ESCI 428	Planetary Geology	
ESCI 202	The Earth in Space	
Advisor approved ESCI course		
Choose one ESCI course		
Total Hours		25

Professional Education

Code	Title	Hours
EDUCATIONAL FOUNDATIONS		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
REQUIRED EDUCATION COURSES		
EDSE 321	Issues in Secondary Education	3
EDFN 330	Instructional Technology, Design & Assessment	3
EDSE 435	Teaching of Science in Secondary Schools	3
ACCOMMODATIONS AND ADAPTATIONS		
EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3
STUDENT TEACHING		
EDSE 471	Student Teaching Seminar	3
EDSC 461	Student Teaching in Science	9
Total Hours		33

Req Related for Earth Science, BSE

Code	Title	Hours
MATHEMATICS		
MATH 160	Precalculus	4
MATH 161	Calculus 1 (C- minimum)	4
PHYSICS		
PHYS 131	Physics 1 with Algebra (C- minimum)	4
PHYS 132	Physics 2 with Algebra	4
General Astronomy or Intro to Astronomy Astrophysics - Choose 1 of the following:		3
PHYS 117	General Astronomy	
PHYS 317	Introduction to Astronomy	
CHEMISTRY		
CHEM 111	Introductory Chemistry 1 (C- minimum)	4
CHEM 112	Introductory Chemistry 2	4
BIOLOGY		
Demonstrated Competency in Biology		

Competency may be demonstrated by: 1) a course grade of 'A' or 'B' in AP Bioogy; 2) a score of 3 or better in the national AP exam; 3) a successful score on the CLEP exam; 4) a successful score on a General Biology challenge or placement examination; 5) a passing grade for General Biology (BIOL 100)

BIOL 241	Principles of Ecology	3
Total Hours		30

Advanced Professional Studies, BSE

Code	Title	Hours
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*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.

APS REQUIREMENTS

English Composition - Choose 1 of the following: 3

ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	

English Literature - Choose 1 of the following: 3

ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211	Foundations Modern Education	6
& EDFN 241	and Psychological Foundations of Teaching	
48 earned (transcript) credit hours are required		

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours	12
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Earth Sciences Minor

The Earth Sciences minor provides foundational knowledge in geology, meteorology, and ocean sciences. Students interested in environmental or energy policy, sustainability studies, or geographic information systems may want to consider a minor in Earth Sciences.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.

6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Earth Sciences

Code	Title	Hours
ESCI 221	Physical Geology	4
ESCI 241	Meteorology	4
ESCI 261	Introduction to Oceanography	4
Geology Course - Choose 1 class from:		
Any 32-level ESCI course(s)		
Any 42-level ESCI course(s)		
Meteorology Course - Choose 1 class from:		
Any 34-level ESCI course(s)		
Any 44-level ESCI course(s)		
Ocean Sciences and Coastal Studies Course - Choose 1 class from:		
Any 36-level ESCI course(s)		
Any 46-level ESCI course(s)		
Total Hours		12

Emergency Management, B.S.

A degree in Emergency Management prepares you for a broad range of career fields in both the public and private sectors ranging from, but not limited to, jobs in areas of local, state and federal emergency management, public health, transportation, public works, non-profit disaster relief organizations, domestic and international non-governmental organizations, energy sector, private sector emergency management consulting and Information technology among others. This program also includes an internship or applied experience that focuses on the application of the theoretical information covered in courses and other training and hands-on elements of the curriculum.

Major in Emergency Management, BS

Code	Title	Hours
EARTH SCIENCE MAJOR CORE		
The Atmosphere - Choose 1 of the following:		3-4
ESCI 107	The Atmosphere	
ESCI 109	Atmosphere with Lab	
ESCI 120	Environmental Geology	3
EMERGENCY MANAGEMENT CORE		
EHEM 201	Introduction to Emergency Management	3
EHEM 205	Natural Hazards Risk Assessment and Mitigation	3
EHEM 305	Disaster Management & Community Risk Reduction	3
EHEM 309	Disaster Response & Recovery	3
EHEM 315	Business Continuity and Continuity of Operations	3
EHEM 316	Intro to Terrorism, WMD and Homeland Security	3
EHEM 319	Emergency Management Planning	3
REQUIRED CAPSTONE		
Thesis or Capstone Experience - Choose 3 hours from:		3
EHEM 393	Field Experience Practicum	
EHEM 300	Co-Op Ed Experience in EHEM	

Code	Title	Hours
EHEM 499	Hrs Thesis:	
Total Hours		30-31
Req Related for Emergency Management, BS		
ESCI 101	Earth Systems & Natural Hazards	3
ESCI 104	The World Ocean	3
ESCI 245	Environmental Meteorology	3
GIS Applications for Earth Sciences - Choose 1 of the following:		3
ESCI 281	GIS Applications for Earth Sci	
GEOG 295	GIS I: Vector Data Analysis	
MATH 160	Precalculus	4
OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
Required Related Electives - Choose 2 of the following:		6
COMM 371	Crisis Emergency & Risk Comm	
ESCI 385	Global Climate Change: Sci & Policy	
OSEH 221	Industrial Fire Prevention, Protection and Control	
GEOG 372	Urban and Regional Planning	
GOVT 356	Disasters and Our World	
EHEM 329	Special Topics in Emergency Management	
Total Hours		25

Environmental Earth & Ocean Science, B.S. - Environmental Earth Sciences Option

The EEOS curriculum is based on the broad recognition that interdisciplinary competency is critical to educate the next generation of Earth and Environmental scientists. Through our environmental sciences core, students will study the foundational role of the Earth sciences as it relates to emerging environmental issues such as water resources and climate variability. Courses within the three tracks such as Earth Materials, Groundwater Resource and Contamination, Structural Geology and Environmental Oceanography emphasize application of geoscience techniques to environmental problems and develop skills that are broadly applicable to a variety of environmental careers. In addition, in this degree students develop necessary technical expertise through required courses in investigative methods and field techniques. The BS EEOS degree provides the fundamental coursework in the geo- and ocean sciences and emphasizes the context of emerging climate and environmental issues.

Environmental Earth & Ocean Science, B.S. - Environmental Geology Option

The EEOS curriculum is based on the broad recognition that interdisciplinary competency is critical to educate the next generation of Earth and Environmental scientists. Through our environmental sciences core, students will study the foundational role of the Earth sciences as it relates to emerging environmental issues such as water resources and climate variability. Courses within the three tracks such as Earth Materials, Groundwater Resource and Contamination, Structural Geology and Environmental Oceanography emphasize application of

geoscience techniques to environmental problems and develop skills that are broadly applicable to a variety of environmental careers. In addition, in this degree students develop necessary technical expertise through required courses in investigative methods and field techniques. The BS EEOS degree provides the fundamental coursework in the geo- and ocean sciences and emphasizes the context of emerging climate and environmental issues.

Environmental Earth & Ocean Science, B.S. - Environmental Ocean Sciences Option

The EEOS curriculum is based on the broad recognition that interdisciplinary competency is critical to educate the next generation of Earth and Environmental scientists. Through our environmental sciences core, students will study the foundational role of the Earth sciences as it relates to emerging environmental issues such as water resources and climate variability. Courses within the three tracks such as Earth Materials, Groundwater Resource and Contamination, Structural Geology and Environmental Oceanography emphasize application of geoscience techniques to environmental problems and develop skills that are broadly applicable to a variety of environmental careers. In addition, in this degree students develop necessary technical expertise through required courses in investigative methods and field techniques. The BS EEOS degree provides the fundamental coursework in the geo- and ocean sciences and emphasizes the context of emerging climate and environmental issues.

Environmental Hazards and Emergency Management Minor

This minor educates those interested in protecting and building disaster-resilient communities. Emergency-management professionals are employed at each level of government, at nonprofit disaster-relief organizations, in domestic and international nongovernmental organizations, in private-sector emergency-management consulting, and in information technology, among others.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Envir Hazards & Emergency Mgmt

Code	Title	Hours
ESCI 101	Earth Systems & Natural Hazards	3
EHEM 201	Introduction to Emergency Management	3

EHEM 305	Disaster Management & Community Risk Reduction	3
OSEH 120	Fundamentals of Safety, Health, Environmental Issues	3
Electives - Choose 6 hours from:		6
CHEM 101	Chem!Better Things/Better Lvng	
CHEM 103	Gen Organic and Biochemistry 1	
CHEM 111	Introductory Chemistry 1	
EHEM 205	Natural Hazards Risk Assessment and Mitigation	
EHEM 300	Co-Op Ed Experience in EHEM	
EHEM 309	Disaster Response & Recovery	
EHEM 316	Intro to Terrorism, WMD and Homeland Security	
EHEM 319	Emergency Management Planning	
EHEM 400	Co-Op Ed Experience in EHEM	
EHEM 498	Ind Study.	
ESCI 281	GIS Applications for Earth Sci	
GEOG 295	GIS I: Vector Data Analysis	
GEOG 372	Urban and Regional Planning	
OSEH 221	Industrial Fire Prevention, Protection and Control	
SOCY 313	Sociology of Disaster	
SOCY 329	Topics in Sociology (Topics:Bio-Terrorism)	
SOCY 329	Topics in Sociology (Topics:Sociology of Terrorism)	
SOCY 329	Topics in Sociology (Topics:Terrorism)	
Note that under electives GEOG 295 and ESCI 281 are equivalent and only one may be taken for credit.		

Total Hours 18

Geology Minor

The geology minor provides foundational knowledge in geology appropriate for students interested in agriculture/biology, archeology or emergency management. This minor is perfect for those students passionate about how the Earth transforms over time through tectonic processes, how landforms develop, or how Earth resources are formed.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Heliophysics and Space Weather Minor

Heliophysics and Space Weather challenges students to consider the principles and problems associated with the solar system through the

lenses of multiple disciplines. As the study of the sun and its effects on the Earth requires a broad understanding of physics and meteorology, the minor program at Millersville University explores this interdisciplinary field through both physics and earth science.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Heliophysics and Space Weather

Code	Title	Hours
A C or better in PHYS 231 and PHYS 232 is required to be admitted to this minor. MATH 161, 211, 311 and 365 are prerequisite courses to the PHYS courses in this minor, please be sure you are completing these MATH courses prior to the respective PHYS requirements in the minor.		
PHYS 233	Wave-Particle Theory	3
Atmospheric Thermodynamics or Macroscopic Physics - Choose 1 of the following:		
ESCI 341	Atmospheric Thermodynamics	3
PHYS 334	Macroscopic Physics	3
PHYS 321	Electromagnetic Fields 1	3
PHYS 322	Electromagnetic Fields 2	3
PHYS 335	Quantum Systems	3
ESCI 440	Space Weather and Environment	3
Statistical Mechanics		0
PHYS 435 is a recommended course, but is not required for completion of the minor.		
Total Hours		18

Hydrology Minor

The hydrology minor provides foundational knowledge in water resources including courses in both surface water and groundwater. Water resources are a critical issue of the 21st century. Climate change is changing the frequency of high impact storms and the flooding associated with them. As droughts become more problematic the access to clean fresh water becomes even more critical. The minor is appropriate for meteorology majors, climate scientists, and anyone interested in environmental policy.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.

3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Hydrology

Code	Title	Hours
ESCI 221	Physical Geology	4
ESCI 322	Environmental Hydrology	3
ESCI 426	Groundwater Resources and Contamination	3
Elective Courses - Choose 8 hours from:		8
ESCI 222	Historical Geology	
ESCI 326	Sedimentation and Stratigraphy	
ESCI 329	Aqueous Geochemistry	
ESCI 382	Water Wars: Science and Policy	
ESCI 385	Global Climate Change: Sci & Policy	
ESCI 281	GIS Applications for Earth Sci	
GEOG 295	GIS I: Vector Data Analysis	
BIOL 445	Aquatic Biology	
CHEM 265	Quantitative Analysis	
CHEM 375	Environmental Chemistry	
Only ONE of the following courses may be counted toward to 8 elective credits: BIOL 445, CHEM 265 or CHEM 375. Only ONE of the following courses may be taken for credit: ESCI 281 or GEOG 295		
Total Hours		18

Meteorology Minor

Millersville University's meteorology program offers a contemporary, comprehensive curriculum, infused with technology and taught by inspiring and passionate faculty. This program prepares students for a broad range of career opportunities through our ongoing commitment to their growth as scientists and citizens, with knowledge and skills that are and will be in demand in the modern, evolving workplace.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Meteorology

Code	Title	Hours
ESCI 241	Meteorology	4
Cloud Physics Precipitation or Atmospheric Radiative Transfer - Choose 1 of the following:		3
ESCI 340	Cloud Physics & Precip Process	
ESCI 345	Atmospheric Radiative Transfer	
ESCI 341	Atmospheric Thermodynamics	3
ESCI 342	Atmospheric Dynamics 1	3
Earth Science Electives - Choose 2 classes from:		
Any 34-level ESCI course(s)		
Any 44-level ESCI course(s)		
ESCI 385	Global Climate Change: Sci & Policy	
Total Hours		13

Meteorology, B.S.

The BS Meteorology program conforms to the American Meteorological Society's Guidelines for a B.S. Degree in Meteorology/Atmospheric Science. It satisfies the National Weather Service GS-1340 requirements and adequately prepares a student for the pursuit of an advanced degree. Our graduates are diversely employed, some going onto careers in education, administration, and research. Many continue on to pursue advanced degrees at major research institutions, work for government agencies or begin careers in the private sector. More than half our graduates work in operational forecasting—just a few of their employers include The Weather Channel, Accu-Weather, Weather Services Corporation, and numerous branches of the National Weather Service. Several of grads work as on-air meteorologists at TV stations across the U.S. Our graduates enter the workforce as knowledgeable, skilled and competent professionals.

Oceanography Minor

A minor in Oceanography examines the physical aspects of ocean currents, tides and the intimate relationship between the ocean and atmosphere, with significant emphasis on the ocean's role in climate change. Offering a comprehensive classroom instruction and field training in the physical, chemical, geological and biological aspects of oceanography, students acquire a rigorous education in the fundamental theories, but also experience practical field and laboratory applications currently used by working oceanographers.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Oceanography

Code	Title	Hours
Credits Required for Minor		
true		
Minimum Residency 50% of minor credits		
true		
Minimum GPA 2.0 for Minor		
true		
2 Courses Must be Upper-Division		
true		
ESCI 261	Introduction to Oceanography	4
Required Core Courses - Choose 2 of the following:		6
ESCI 362	Marine Geology	
ESCI 363	Chemical Oceanography	
ESCI 369	Physical Oceanography and Climate	
ESCI 465	Biological Oceanography	
Required Methods Courses - Choose 2 of the following:		6
ESCI 267	Field Methods in Oceanography	
ESCI 282	FORTTRAN Programming for Earth Sciences Applications	
ESCI 380	Remote Sensing & Image Interpretation	
ESCI 386	Sci Prg Lang:	
Earth Science Elective - Choose 1 of the following:		3
ESCI 366	Marine Resources and Policy	
ESCI 385	Global Climate Change: Sci & Policy	
ESCI 445	Num Modeling of Atmos and Ocns	
ESCI 464	Ocean Ecosystems	
ESCI 468	Ocean Data Analysis and Presentation	
Total Hours		19

Environmental Studies

Five multidisciplinary minors are available that have been designed for students with an environmental interest. A full major in a discipline is an important foundation on which to build expertise in a specific environmental area, and the minors are designed to complement majors in the sciences, technology and social sciences. Increasingly, environmental problems are addressed by multidisciplinary teams, so the minors prepare students to operate in this multidisciplinary setting.

The environmental minors are coordinated by the Center for Environmental Science (CES), and the director of the CES is the primary contact for the minors.

For information on environmental studies and for course prerequisites, also see the Biology, Chemistry, Earth Sciences and Geography sections.

For information on environmental options within majors, also see the Biology, Chemistry, Earth Sciences and Geography sections.

the programs

- Environmental Policy and Regulation Minor (p. 308)
- Industrial and Environmental Health Minor (p. 308)
- Land-Use Minor (p. 309)
- Quantitative Methods in Environmental Science Minor (p. 309)
- Water Resources Minor (p. 309)

the faculty

Dr. John R. Wallace, Director, Center for Environmental Sciences

the courses

ENVI 330: 3 s.h.

Environmental Statistics & Risk Assessment

Methods of statistical analysis and risk assessment applied to environmental science, including characteristics of environmental quality data; statistical measures and distributions; identifying system changes; hypothesis testing of environmental quality; risk, hazards and exposures; bioassays. Team-taught. Offered periodically.

ENVI 495: 3 s.h.

Environmental Clinic

A capstone course devoted to the definition and assessment of an environmental problem from watershed, airshed, biodiversity and human health perspectives. Case studies will be used as models of how environmental problems can be defined/documented and solutions can be implemented. Student teams will define a problem and implement a solution using interdisciplinary approaches while working with a faculty team. Students are encouraged to take this course at the conclusion of the minor. Offered periodically. Prereq: 12 credits of environmental science minor.

Environmental Policy and Regulation Minor

This 18 credit minor prepares to move successfully toward graduate school in policy or as staffers in the environmental regulation/policy community. Through this minor, students engage with the legislation, economics, and stakeholders which contribute to existing environmental policy, and shape future policies.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Environmental Policy & Regs

Code	Title	Hours
ECON 307	Environmental Economics	3
ENVI 330	Environmental Statistics & Risk Assessment	3
OSEH 220	Legal Aspects Environmental Safety	3
ENVI 495	Environmental Clinic	3
Electives - Choose 2 of the following:		6
GEOG 306	Environmental Impact Assessment	
GEOG 372	Urban and Regional Planning	
OSEH 435	Environmental Health	
SOCY 313	Sociology of Disaster	
Total Hours		18

Industrial and Environmental Health Minor

This 18-21 credit minor provides the background needed to understand the impact of environmental issues on public health. Through the courses in this minor, students will gain hands-on experience at the interface of environmental science, environmental policy, and healthcare.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Industrial Environmental Health

Code	Title	Hours
Industrial Hygiene-Chem Bio Haz		4
OSEH 321	Environmental & Industrial Hygiene I - Chemical and Biological Hazards	
OSEH 435	Environmental Health	3
ENVI 330	Environmental Statistics & Risk Assessment	3
ENVI 495	Environmental Clinic	3
Electives - Choose 2 of the following:		6-8
BIOL 204	Human Biology	
BIOL 255	Human Anatomy & Physiology II	
BIOL 435	Animal Physiology	
BIOL 455	Cardiopulmonary Physiology	
CHEM 232	Organic Chemistry 2	
CHEM 235	Organic Chemistry	
CHEM 375	Environmental Chemistry	
ESCI 322	Environmental Hydrology	
ESCI 329	Aqueous Geochemistry	
ESCI 349	Chemistry of the Atmosphere	

ESCI 426 Groundwater Resources and Contamination

Total Hours 19-21

Land-Use Minor

The Land-Use Minor explores the physical and economic impact of human land-use practices and the ways in which land use can be sustainable both for human life and for the maintenance of essential biological diversity.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Quantitative Methods in Environmental Science Minor

This 18 credit minor provides the quantitative and technical skills that are valued by both employers and graduate programs in environmental science. This minor includes a number of options geared towards a wide range of fields; students are able to tailor this minor to reflect their interests and equip them to pursue their professional aspirations in diverse environmental careers.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Quantitative Methods Env Sci

Code	Title	Hours
ENVI 495	Environmental Clinic	3
Statistics Course - Choose 1 of the following:		3
BIOL 375	Biometry	
ENVI 330	Environmental Statistics & Risk Assessment	
GIS Course - Choose 1 of the following:		3
ESCI 281	GIS Applications for Earth Sci	

GEOG 295 GIS I: Vector Data Analysis

GEOG 395 GIS for Web Development

Elective Courses - Choose 3 of the following: 9-12

BIOL 241 Principles of Ecology

CHEM 265 Quantitative Analysis

CHEM 375 Environmental Chemistry

CHEM 476 Environmental Chemistry 2

ESCI 267 Field Methods in Oceanography

ESCI 322 Environmental Hydrology

ESCI 349 Chemistry of the Atmosphere

ESCI 426 Groundwater Resources and Contamination

ESCI 447 Meteorological Instrumentation

OSEH 321 Environmental & Industrial Hygiene I - Chemical and Biological Hazards

Total Hours 18-21

Water Resources Minor

Study the diverse uses of water in a modern society and the best practices for maintaining that resource through the Water Resources minor. This 18- to 21-credit course of study provides students with an environmental perspective on water resource issues including remediation techniques and solutions, chemical analysis techniques, and the use of aquatic organisms to monitor contamination and recovery.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Geography

Geography is the study of how people relate to their natural and human surroundings. Geography is a bridge discipline, an environmental science which brings together principles of physical sciences and other social sciences; a social science which examines the spatial characteristics of culture, history, politics, economics and business decisions; and a liberal arts discipline which provides background for study in art, languages, literature, music, education and many other subjects. Geographers can bring to analyses of current issues an understanding of global interrelationships and specialized geospatial technology skills. Many geographers develop professional skills in map interpretation, cartography, geographic information systems (GIS), and remote sensing. Geographic understanding and skills create the potential for employment in such diverse areas as planning and other government agencies, environmental and cartographic service companies, and the business community. Contact the department chairperson for more detailed information on career opportunities.

The Bachelor of Arts program in Geography offers major concentrations in environmental studies, geospatial applications, global studies, and sustainability studies. The major program requires 42 credit hours of study and a minor program of study outside the department.

The Bachelor of Science program in Environmental and Spatial Sciences provides advanced training in geospatial technologies, including: geographic information science (GIS), global positioning system (GPS) technology, remote sensing, data management, and cartography. Graduates of the program are well-positioned for careers in environmental analysis and mitigation of environmental problems. The program prepares students to assess environmental and human-environment systems, identify and evaluate environmental problems, and design innovative and sustainable solutions.

The Bachelor of Science in Education (B.S.Ed.) program in secondary education, providing certification for social studies teaching with a geography emphasis, serves students who are interested in a robust and well-rounded social studies preparation for their future teaching careers.

Minor programs of study in environmental geography, geospatial applications, global geography, sustainability studies, and general geography each require 18 credits and may be studied by those students in major programs other than the B.A. Geography.

the programs

- Environmental & Spatial Sciences, B.S. (p. 313)
- Environmental Geography Minor (p. 314)
- General Geography Minor (p. 314)
- Geography B.A., - Environmental Studies Option (p. 315)
- Geography, B.A. - Geospatial Applications Option (p. 315)
- Geography, B.A. - Global Studies Option (p. 316)
- Geography, B.A. - Sustainability Studies Option (p. 316)
- Geospatial Applications Minor (p. 316)
- Global Geography Minor (p. 317)
- Social Studies, B.S.Ed. - Geography Advised (p. 317)
- Sustainability Studies Minor (p. 319)

the faculty

Cuthbert, Angela; Professor
College of Science and Technology
B.E.S., University of Waterloo (Canada), 1995; M.E.S., Ibid., 1996; Ph.D., McMaster University (Canada), 2001

Frost, Ethan; Assistant Professor
College of Science and Technology
B.A., Clark University, 2002; M.S., University of Delaware, 2006; Ph.D., Ibid., 2011

Geiger, Charles; Associate Professor
College of Science and Technology
B.S., Edinboro University, 1976; M.A., Kent State University, 1978; Ph.D., University of Toronto (Ontario), 1984

Kelly, Jessica; Associate Professor
College of Science and Technology
B.A., Boston University, 2003; M.A., Ibid., 2003; Ph.D., Rutgers University, 2009

Schreiber, Kathleen; Professor
College of Science and Technology

B.A., University of Delaware, 1983; M.S., Ibid., 1990; Ph.D., Ibid., 1996

the courses

GEOG 101: 3 s.h.

The Global Environment (G3)

Global survey of human environment interactions focusing on people's use of natural resources and major related issues, including scarcity and environmental impacts. Comparisons between developing and developed countries and across cultures.

GEOG 120: 3 s.h.

Human Geography (D, G3)

Cultural geography of race, ethnicity, gender and political systems. Emphasis on processes that create and maintain cultures and the geographies that these processes produce. Offered in spring.

GEOG 123: 3 s.h.

Place and Identity (G1)

Introduction to humanistic geography through an examination of the foundational geographical concepts of place and human identity. 'Place', and its close corollary 'identity', are explored chronologically beginning with the philosopher-geographers of ancient Greece and Rome, through to modern social and political philosophies of the 19th and 20th centuries. Cross cultural examples are used to illustrate the nature of place as a fundamental element of everyday human experience of the world.

GEOG 130: 3 s.h.

Intro to Environmental Science (G2)

Introduction to the scientific concepts, principles, and methodologies that underlie environmental change and environmental sustainability. Emphasis on the spatial scale and interconnection of multiple environmental processes, the effects of human activities on environmental processes, and the technical and scientific methods for their assessment and analysis.

GEOG 130H: 3 s.h.

Hon: Intro to Environ Science (G2)

GEOG 141: 3 s.h.

World Regional Geography (G3)

Spatial patterns of environmental, cultural, social, economic and political developments in selected regions of the world. Emphasis on developed and less developed parts of the world.

GEOG 202: 3 s.h.

Environmental Sustainability (G3)

Investigation of problems that have arisen through human use of earth's resources, and the technical, economic, policy, and social options available to us. Offered in fall, spring.

GEOG 222: 3 s.h.

Economic Geography (G3)

Location of economic activities in different environmental settings. The growth of global economic interdependence. Economic growth and development strategies in a regional framework. Economic versus environmental trade-offs. Offered in summer.

GEOG 223: 3 s.h.

Health, Gender, Race & Class (G3)

Introduction to the geographical distribution of select contemporary diseases and their relationships to other health care issues. Distribution of, and access to, scarce health care resources along with impacts of gender, race, and class on human life chances at global (especially developed versus developing countries), regional and local (such as urban versus rural) scales are evaluated.

GEOG 226: 3 s.h.**Political Geography (D, G3, W)**

Political boundaries of the world map. Covers violent conflicts from which countries were formed. Colonization (1400-1900), decolonization (1800-1970) and the Cold War are discussed. Offered in fall, spring. Prereq: ENGL 110.

GEOG 226H: 3 s.h.**Hnrs:Political Geography (D, G3, W)**

Hnrs:Political Geography. Offered in fall.

GEOG 227: 3 s.h.**Cities (G3)**

City development is described and explained in a global context. The US city system is explained and compared to European, Asian and African urban systems. Contemporary city problems (gentrification, urban decline, segregation, etc.) are discussed.

GEOG 228: 3 s.h.**Geography of Sport (G3)**

Using a geographical basis, the course will examine a variety of topics, including landscapes of modern sport; place and space in sport; institutions and spatial organization of sport; and sport, politics and development. Offered periodically.

GEOG 229: 3 s.h.**Sustainable Tourism (G3)**

An investigation of the areal distribution of recreation and tourist activities and their positive and negative impacts; emphasis on environmental and economic aspects of leisure within a locational framework. Planning methodology to alleviate problems and create higher-quality recreational experiences. Offered infrequently.

GEOG 230: 3 s.h.**Physical Geography (G2)**

Study of the Earth's physical environment, including atmosphere, hydrosphere, lithosphere and biosphere. Viewing the Earth as an integrated system, global patterns and processes are analyzed. Offered annually.

GEOG 242: 3 s.h.**London (G3)**

Using London as the core of the class, students will be introduced to basic geographic concepts and methods of analysis. Despite the focus on one city, London, the course will take a thematic approach towards geographical inquiry (map interpretation, urban planning, migration, segregation, industrial development, political geography and empire building) London's twentieth century industrial decline will be used to illustrate broader themes of global economic competition.

GEOG 245: 3 s.h.**Geography of Pennsylvania (G3)**

Introduction to the geography of Pennsylvania, using the tools and concepts of regional geography. Physical, cultural and economic landscapes and resulting social and environmental issues are examined.

GEOG 245H: 3 s.h.**Hon: Geog of Pennsylvania (G3)****GEOG 248: 3 s.h.****Geography of Africa (D, G3)**

The course uses a thematic approach to examine many of the subfields of geography as they pertain to Africa. Topics include the physical landscape, climate, vegetation, environmental issues, precolonial and colonial history, politics, culture, population, urbanization, agricultural and economic development, and medical gender issues. Offered periodically.

GEOG 248H: 3 s.h.**Hon: Geography of Africa (D, G3)****GEOG 278: 3 s.h.****Transportation Geography (G3)**

Transportation is defined as the movement of goods and people from place to place. This course introduces the principles underlying these movements, with discussion of the economic, social and environmental impacts. Offered periodically.

GEOG 279: 3 s.h.**Experimental**

Experimental Course in Geography

GEOG 281: 3 s.h.**Maps and GIS (G3)**

Thorough examination of maps as tools for representing Earth dimensions, depicting landscapes and displaying data. Use Geographic Information Systems (GIS) mapping software to make a variety of effective maps.

GEOG 289: 3 s.h.**Field and Research Methods in Geography (W)**

Introduction to the theory, process, and methodology used to collect and analyze data, and conduct and communicate research within the multidisciplinary context of geographic inquiry.

GEOG 292: 3 s.h.**Quantitative and Spatial Analysis (G2)**

Analysis of spatial and other geographical data using descriptive statistical measures, probability and sampling, and inferential statistical methods. Emphasis on geographical problem solving. Prereq: GEOG 281, and MATH 130 or higher, or MPT 151 or higher, or MATH 101.

GEOG 295: 3 s.h.**GIS I: Vector Data Analysis (G2)**

Introduction to Geographic Information Systems (GIS) computer technology, theory, and methodology focusing on vector data models. Combines understanding of geographic data and research with experience in digital mapping, geographic databases, and spatial analysis. Offered in fall, spring. Prereq: GEOG 281.

GEOG 296: 3 s.h.**GIS II: Raster Data Analysis**

Introduce students to the fundamental concepts of Raster GIS. Topics will include: the physical basis for remote sensing, the extraction of information contained within energy, remote sensing instrumentation, aerial photography, photogrammetry, digital image processing, data structure, database design, and spatial data analysis. Land-based environmental resources and sustainability applications.

GEOG 296H: 3 s.h.**H: GIS II: Raster Data Analysis****GEOG 300: 3-12 s.h.****Co-Op Ed Experience in Geog**

Assignment with a public agency or private organization. Requirements include design of an approved job description relevant to employer's functions and student's program, and a planned program of contact with the faculty supervisor. Performance evaluation by sponsor used in assigning satisfactory/unsatisfactory grade.

GEOG 302: 3 s.h.**Food System Sustainability (G3, W)**

Examines the attendant economic, social and environmental impacts of our food system. Key areas of policy influence on our food system and sustainable interventions for transforming our food system will also be addressed. Offered periodically. Prereq: ENGL 110; GEOG 101 or GEOG 130 or GEOG 202 or permission of instructor.

GEOG 304: 3 s.h.**Water Resources Management (G3)**

An interdisciplinary study of how we plan, manage and use water. Topics range from water law to hydrology. Offered periodically. Prereq: GEOG 101 or 202.

GEOG 305: 3 s.h.**Energy Sustainability (G3, W)**

Explores energy production and consumption from geographic and sustainability perspectives. The social, economic and environmental impacts of traditional and alternative energy resources will be examined. Options for a sustainable energy future in different geographic locations will be addressed. Offered periodically. Prereq: ENGL 110; GEOG 101 or GEOG 202 or permission of instructor.

GEOG 305H: 3 s.h.**Hon: Energy Sustainability (G3, W)****GEOG 306: 3 s.h.****Environmental Impact Assessment**

The various regulatory requirements and technical methods for developing federal environmental-impact statements for air, water, biological and socioeconomic environments. Offered periodically. Prereq: GEOG 202 and 230 or permission of instructor.

GEOG 307: 3 s.h.**US Environmental Policy (G3)**

Federal environmental legislation; the relationship between local, state and federal agencies in policy formation and implementation; industry responsibilities and options under existing law; the role of interest groups and the public in environmental decision making and U.S. engagement in emerging international environmental policy debates. Offered in fall of odd years. Prereq: junior or senior status; GEOG 101 or 202 or GOVT 205 or ECON 102 or permission of instructor.

GEOG 333: 3 s.h.**Biogeography (G3)**

Interactions between environmental, biological and human factors which have led to current geographical distributions of flora and fauna. Field trip required. Offered periodically. Prereq: GEOG 230 or BIOL 100 or permission of instructor.

GEOG 336: 3 s.h.**Climate And Society (G3)**

Human interrelationships with the atmospheric environment. Includes microclimatological applications in agriculture, water resources, human health and architecture to analysis of global climate-change issues. Offered periodically. Prereq: GEOG 230 or ESCI 107 or permission of instructor.

GEOG 342: 3 s.h.**Europe (G3, W)**

Introduction to Western Europe as a region. Emphasis on its delimitation and cultural, economic and political spatial patterns relating to the desire to form a European community. Europe within a global framework also considered. Offered in winter, spring, summer. Prereq: ENGL 110.

GEOG 343: 3 s.h.**Latin America & the Caribbean (P)**

A thematic study of the physiographic and cultural regions of Latin America and the Caribbean. Historical, economic, political, social, and environmental geography approaches to studying regional characteristics. Select topics include population change, land use change, urban development, economic development, environmental sustainability, and human rights. Offered periodically. Prereq: COMM100; ENGL110; and junior or senior status.

GEOG 344: 3 s.h.**North America (G3)**

Geography of the U.S. and Canada using the tools and concepts of regional geography. Physical, population and economic patterns are merged in developing an understanding of regional characteristics and issues.

GEOG 350: 3 s.h.**Global Issues (G3)**

Issues related to urban, cultural and resource problems are analyzed globally. Emphasis on spatial nature of these problems and emerging global interdependence. Focus on a single current issue, which will be identified in advertised course title. Offered periodically.

GEOG 372: 3 s.h.**Urban and Regional Planning (G3)**

Introduction to land use and other types of planning in urban and rural areas. Assessment of development suitability and environmental impact. Techniques for implementing different types of plans. Offered annually.

GEOG 379: 3 s.h.**Experimental**

Experimental

GEOG 384: 3 s.h.**Cartography**

Introduction to concepts and techniques of mapmaking. Skill developed in computer-based compilation, layout and lettering of maps. Offered periodically. Prereq: GEOG 281, 295.

GEOG 395: 3 s.h.**GIS for Web Development**

Integrate GIS and Web development technologies. Implement data compilation and map design decisions to support an organization's internal and public information flows. Incorporate interactive maps and information retrieval to enhance Web content. Prerequisites: GEOG 295 or ESCI 281, and DESN 247 or CSCI 121.

GEOG 396: 3 s.h.**GIS Modeling**

Analyze and construct GIS-based models of various geographical scenarios. Strategize spatial and temporal problem solving in environmental, transportation, emergency management and other contexts. Adapt some models to computer algorithms used within GIS software. Prerequisites: GEOG 295 or ESCI 281, and GEOG 296, and CSCI 161 or ESCI 282, or permission. Offered fall of even-numbered years.

GEOG 397: 3 s.h.**GIS Data Management**

Fully explore the GIS geodatabase model and related data structures, and how they encapsulate all data types, characteristics and capabilities. Assess data quality and long-term data management issues.

GEOG 400: 3-12 s.h.**Co-Op Ed Experience in Geog**

Assignment with a public agency or private organization. Requirements include design of an approved job description relevant to employer's functions and student's program, and a planned program of contact with the faculty supervisor. Performance evaluation by sponsor used in assigning satisfactory/unsatisfactory grade.

GEOG 407: 3 s.h.**Glbl Envrnmtl Policy/Negotiatn (G3, W)**

Global political and economic forces and environmental change. Emphasis on spatial patterns and processes of transboundary environmental problems, the major pieces of international environmental policy, the negotiations process between states and nonstate actors in policy formation and implementation, and the dynamics of North-South relations on the changing physical landscape. Offered in spring of even years. Prereq: junior or senior status; ENGL 110, GEOG 307 or permission of instructor.

GEOG 408: 3 s.h.**Sustainable Development (D, P)**

Social, economic, and environmental aspects of global sustainable development. Class discussion integrated with research and service learning projects. Prereq: COMM 100, ENGL 110, and junior or senior standing.

GEOG 479: 3 s.h.**Experimental**

Experimental

GEOG 488: 1-3 s.h.**Senior Thesis**

Investigation of selected topic with individual research assignment; focus varies but related to geographical analysis. For senior Geography majors only. Prereq: senior standing and completion of basic courses. Offered as needed.

GEOG 489: 1-4 s.h.**Honors Thesis**

Investigation of selected topic with individual research assignment; focus varies but related to geographical analysis. Prereq: senior standing and completion of basic courses and eligibility for departmental honors. See Special Academic Opportunities, Departmental Honors section of this catalog.

GEOG 498: 1-3 s.h.**Independent Study**

Investigation of selected topic with individual research assignment; focus varies.

GEOG 499: 1-4 s.h.**Departmental Honors**

Investigation of selected topic with individual research assignment; focus varies but related to geographical analysis. Prereq: senior standing and completion of basic courses and eligibility for departmental honors. See Special Academic Opportunities, Departmental Honors section of this catalog.

GEOG 500: 3-12 s.h.**Co-Op Ed Experience in Geog**

Co-Op Ed Experience in Geog

Environmental & Spatial Sciences, B.S.

Millersville University's Bachelor of Science program in Environmental and Spatial Sciences prepares students as environmental scientists with advanced training in geospatial technologies, including: geographic information science (GIS), global positioning system (GPS) technology, remote sensing, data management, and cartography. Graduates of the program are well-positioned for careers in environmental analysis and mitigation of environmental problems. Through coursework in the program, students assess environmental and human-environment systems, identify and evaluate environmental problems, and design innovative and sustainable solutions.

The program is housed in the Department of Geography. 60 credits required in addition to required related courses applied to the general education program.

Major in Environmental & Spatial Sciences

Code	Title	Hours
REQUIRED CORE GEOGRAPHY		
GEOG 130	Intro to Environmental Science	3
GEOG 120	Human Geography	3
Physical Geography or Geomorphology - Choose 1 of the following:		3
GEOG 230	Physical Geography	
ESCI 225	Geomorphology	
GEOG 289	Field and Research Methods in Geography	3
GEOG 408	Sustainable Development	3
REQUIRED SPATIAL SCIENCE		
GEOG 281	Maps and GIS	3
GEOG 292	Quantitative and Spatial Analysis	3
GEOG 295	GIS I: Vector Data Analysis	3
GEOG 296	GIS II: Raster Data Analysis	3
SPATIAL SCIENCE ELECTIVES		
undefined - Choose 2 of the following:		6
GEOG 395	GIS for Web Development	
GEOG 384	Cartography	
GEOG 396	GIS Modeling	
GEOG 397	GIS Data Management	
ENVIRONMENTAL STUDIES ELECTIVES		
undefined - Choose 3 of the following:		9
GEOG 304	Water Resources Management	
GEOG 305	Energy Sustainability	
GEOG 306	Environmental Impact Assessmnt	
GEOG 307	US Environmental Policy	
GEOG 333	Biogeography	
GEOG 336	Climate And Society	
GEOG 407	Glbl Envrnmtl Policy/Negotiatn	
REQUIRED CAPSTONE		
undefined - Choose 1 of the following:		3-12
GEOG 300	Co-Op Ed Experience in Geog	
GEOG 488	Senior Thesis	
GEOG 489	Honors Thesis	
Total Hours		45-54

Req Related for Environmental & Spatial Sciences

Code	Title	Hours
REQUIRED RELATED ENVIRONMENTAL SCIENCE		
BIOL 100	General Biology	3
CHEM 111	Introductory Chemistry 1	4
CHEM 112	Introductory Chemistry 2	4
Physical Geology or Intro to Oceanography - Choose 1 of the following:		4
ESCI 221	Physical Geology	
ESCI 261	Introduction to Oceanography	
MATH 161	Calculus 1	4
Physics I with Algebra or with Calculus - Choose 1 of the following:		4-5
PHYS 131	Physics 1 with Algebra	
PHYS 231	Physics 1 with Calculus	
ENVIRONMENTAL SCIENCE REQ RELATED ELECTIVES		
undefined - Choose 6 hours from:		6
BIOL 211	Concepts of Zoology	
BIOL 221	Concepts of Botany	
BIOL 340	Prspctv in Environm Awareness	
BIOL 343	Principles of Ecology & Evolution	
CHEM 235	Organic Chemistry	
CHEM 265	Quantitative Analysis	
CHEM 375	Environmental Chemistry	
CHEM 476	Environmental Chemistry 2	
ESCI 226	Geology of Earth and Energy Resources	
ESCI 241	Meteorology	
ESCI 245	Environmental Meteorology	
ESCI 322	Environmental Hydrology	
ESCI 326	Sedimentation and Stratigraphy	
ESCI 329	Aqueous Geochemistry	
ESCI 366	Marine Resources and Policy	
ESCI 385	Global Climate Change: Sci & Policy	
ESCI 422	Geological Field Mapping	
ESCI 426	Groundwater Resources and Contamination	
ESCI 466	Environmental Oceanography	
OSEH 435	Environmental Health	
PHYS 132	Physics 2 with Algebra	
PHYS 232	Physics 2 with Calculus	
A minor program of study is highly recommended. Examples include Biology, Chemistry, Computer Science, Earth Sciences, Environmental Chemistry, Environmental Hazards and Emergency Management, Environmental Policy Regulation, General Economics, Geology, Government and Political Affairs, Hydrology, Industrial and Environmental Health, Land Use, Mathematics, Meteorology, Occupational Safety Environmental Health, Oceanography, Physics, Quantitative Methods in Environmental Science, Science Writing, Social Justice, Sustainability Studies, Water Resources.		
Total Hours		29-30

Graduates of the B.S. Environmental and Spatial Sciences program will:

1. Describe and analyze concepts and theories of the history, structure, function, interactions, and changes in environmental and human-environment systems.

2. Describe and analyze concepts and theories of the historical, political, and social context of environmental issues, policies, and institutions.
3. Apply appropriate concepts and methodologies to organize, assess, visualize, evaluate, and analyze complex social and environmental processes and problems, interpret relationships and trends, and make predictions about future change.
4. Design independent and team-based scientific inquiries to identify, collect, organize, analyze, integrate, and synthesize complex environmental and spatial data and information from multiple sources.
5. Design integrative and equitable scientific, technological, and policy solutions to environmental issues with a focus on sustainability.
6. Demonstrate proficiency in environmental and geospatial technology and data management.
7. Demonstrate proficiency in critical thinking and written and oral communication skills through a range of media and to diverse scientific, policy decision-makers, and general public audiences.

Environmental Geography Minor

A minor in environmental geography emphasizes a study of physical and human geography and traditional resource-based issues of air, water, energy and land resources. The minor complements most majors in the social and natural sciences. 18 credits required.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Environmental Geography

Code	Title	Hours
GEOG 101	The Global Environment	3
GEOG 202	Environmental Sustainability	3
Physical Geography or Geomorphology - Choose 1 of the following:		3
GEOG 230	Physical Geography	
ESCI 225	Geomorphology	
GEOG 281	Maps and GIS	3
Geography Electives at the 300-400 Level - Choose 2 classes from:		
Any 3-level GEOG course(s)		
Any 4-level GEOG course(s)		
Total Hours		12

General Geography Minor

A minor in general geography complements most majors in the social and physical sciences. The general geography minor is customizable to

student interests and career goals. The minor complements most majors offered by Millersville University. 18 credits required.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Geography

Code	Title	Hours
Credits Required for Minor		
	true	
Minimum Residency 50% of minor credits		
	true	
Minimum GPA 2.0 for Minor		
	true	
2 Courses Must be Upper-Division		
	true	
GEOG 101	The Global Environment	3
GEOG 281	Maps and GIS	3
Geography Electives at the 300-400 level - Choose 2 classes from:		
Any 3-level GEOG course(s)		
Any 4-level GEOG course(s)		
Geography Electives - Choose 2 classes from:		
Any 1-level GEOG course(s)		
Any 2-level GEOG course(s)		
Any 3-level GEOG course(s)		
Any 4-level GEOG course(s)		
Electives must be determined with approval of the Chairperson of the Geography Department.		
Total Hours		6

Geography B.A., - Environmental Studies Option

Millersville University's Environmental Studies concentration offers a comprehensive program of study that encourages students to pursue study in traditional resource-based issues of air, water, energy and land resources. Emphasizing physical geography and environmental topics, this concentration bridges the social and natural sciences in order to study complex environmental problems. Graduates of this program have the foundation for further academic study in disciplines addressing geographic and environmental areas of study, or for immediate employment in the public and private sector, including areas of environmental planning, public policy, and natural resource management.

Environmental Studies is a concentration within the Geography major. 42 credits and a minor program of study required.

Geography, B.A. - Geospatial Applications Option

Millersville University's Geospatial Applications concentration offers a comprehensive program of study that emphasizes the acquisition of skills in geographic information systems (GIS), remotes sensing, map use and interpretation, cartography, spatial analytical skills, and advanced geospatial applications. Graduates of this program have the foundation for further academic study in disciplines addressing geographic and environmental issues in the social and natural sciences, or for immediate employment in public and private sectors in environmental and urban planning and management where GIS and geospatial analysis skills are highly desirable.

Geospatial Applications is available as concentration within the Geography major. 42 credits and a minor program of study required.

Major in Geography

Code	Title	Hours
HUMAN DIMENSIONS OF SUSTAINABILITY		3
GEOG 120	Human Geography	
ENVIRONMENTAL FOUNDATIONS		3
GEOG 230	Physical Geography	
ENVIRONMENTAL TECHNIQUES		12
GEOG 281	Maps and GIS	
GEOG 292	Quantitative and Spatial Analysis	
GEOG 295	GIS I: Vector Data Analysis	
GEOG 296	GIS II: Raster Data Analysis	
POLICY AND LEADERSHIP		3
GEOG 372	Urban and Regional Planning	
CONCENTRATION IN GEOSPATIAL APPLICATIONS - See separate block		
Total Hours		21

Concentration in Geospatial Applications

Code	Title	Hours
GEOGRAPHY TECHNIQUES COURSES - Choose 6 hours from:		6
Any 28-level GEOG course(s)		
Any 29-level GEOG course(s)		
Any 38-level GEOG course(s)		

Any 39-level GEOG course(s)

Note: This requirement may not be satisfied with GEOG 281.

APPLIED GEOGRAPHY COURSES - Choose 6 hours from: 6

GEOG 278 Transportation Geography

GEOG 304 Water Resources Management

GEOG 305 Energy Sustainability

GEOG 306 Environmental Impact Assessment

GEOG 307 US Environmental Policy

GEOG 336 Climate And Society

GEOG 407 Gbl Envrnmtl Policy/Negotiatn

REGIONAL DIMENSIONS - Choose 1 class from:

Any 14-level GEOG course(s)

Any 24-level GEOG course(s)

Any 34-level GEOG course(s)

Any 44-level GEOG course(s)

GEOSPATIAL APPLICATIONS RESEARCH/PRACTICUM

Co-Op in Geography or Senior Thesis - Choose 3 hours from: 3

GEOG 300 Co-Op Ed Experience in Geog

GEOG 400 Co-Op Ed Experience in Geog

GEOG 500 Co-Op Ed Experience in Geog

GEOG 488 Senior Thesis

GEOG 499 Departmental Honors

ADDITIONAL REQUIRED GEOGRAPHY ELECTIVE

undefined - Choose 1 class from:

Any GEOG course(s)

Note: This requirement may not be satisfied with GEOG 120, GEOG 230, GEOG 281, GEOG 292, GEOG 295, or GEOG 372.

Any GEOG courses taken in excess of requirements will be listed here and count toward major GPA.

Total Hours 15

Req Related for Geography, BA

Code Title Hours

A MINOR IS REQUIRED

Select a minor OTHER THAN Geography. Recommended minors with an environmental emphasis: Biology, Geology, Meteorology, Oceanography, Earth Science, Env Hazards Emergency Mgmt, Env Policy Regulation, Land Use, Water Resources Industrial and Environmental Health, Quantitative Methods in Env Science, Occupational Safety, Other relevant minors: Criminology, Government, International Studies, and Print Media Studies.

REQUIRED RELATED COURSES

Elements of Stat I or Survey of Statistics - Choose 1 of the following: 3

MATH 130 Elements of Statistics 1

MATH 235 Survey of Statistics

Calculus for Management or Precalculus - Choose 1 of the following: 4

MATH 151 Calculus for Management

MATH 160 Precalculus

Total Hours 7

Geography, B.A. - Global Studies Option

Millersville University's Global Studies concentration offers a comprehensive program of study in international and regional geographic issues, including people, communities and culture. Graduates of this program have the foundation for further academic study in disciplines addressing geographic, regional, and international issues, or for immediate employment in the public or private sectors where critical thinking, geographical and cross-cultural understanding, writing, and public speaking are desired.

Global Studies is available as concentration within the Geography major. 42 credits and a minor program of study required.

Geography, B.A. - Sustainability Studies Option

Millersville University's Sustainability Studies provides students with knowledge, skills, and ways of thinking needed to promote economic and social well-being while protecting the integrity of earth's living systems. Sustainability Studies is an interdisciplinary field, engaging sustainable development, environmental studies, public and environmental policy, city and regional planning, economics, social well-being, and global and local understanding. Spatial tools and skills enhance advanced issue analysis. The program is well-balanced between the integral social, policy, environmental, global, economic, and communication components of sustainability. Graduates of this program have the foundation for further academic study in disciplines addressing geographic and sustainability issues, or for immediate employment in the public or private sectors in sustainability and environmental management.

Sustainability Studies is a concentration in the B.A. program in Geography. 42 credits and a minor program of study required.

Geospatial Applications Minor

A minor in geospatial applications emphasizes methods in geographic information systems (GIS), map use and interpretation, and cartography. The minor complements most business, social sciences, and natural sciences majors. 18 credits required.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Geospatial Applications

Code	Title	Hours
Intro Level GEOG Course - Choose 1 of the following:		3
GEOG 101	The Global Environment	
GEOG 120	Human Geography	
GEOG 130	Intro to Environmental Science	
GEOG 230	Physical Geography	
GEOG 281	Maps and GIS	3
GIS:Vector Data Analysis		3
GEOG 295	GIS I: Vector Data Analysis	
GIS:Raster Data Analysis or Field and Research Methods - Choose 1 of the following:		3
GEOG 296	GIS II: Raster Data Analysis	
GEOG 289	Field and Research Methods in Geography	
GEOG 38@ or 39@ Elective - Choose 1 class from:		
Any 38-level GEOG course(s)		
Any 39-level GEOG course(s)		
Upper Level Geography Elective - Choose 1 class from:		
Any 3-level GEOG course(s)		
Any 4-level GEOG course(s)		
Total Hours		12

Global Geography Minor

A minor in global geography emphasizes international and regional geographic issues, including people, communities and culture. The minor complements most humanities and social sciences majors. 18 credits required.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Social Studies, B.S.Ed. - Geography Advised

The Social Studies Secondary Education program at Millersville University incorporates core social studies courses with diverse education requirements. Core social studies courses explore the global environment, economics, government, history and more. In consultation with an academic adviser, you can concentrate in geography. #All MU education programs include a Foundations Block which explores modern teaching and the psychology of teaching, Professional Blocks which focus on instructional technology and positive learning environments, and a semester of student teaching.

Major in Social Studies Geography, BSE

Code	Title	Hours
MAJOR REQUIRED CORE FOUNDATION		
ECON 100	Introductory Economics	3
ECON 203	Introduction to World Economy	3
GEOG 120	Human Geography	3
Geography Course - Choose 1 of the following:		3
GEOG 141	World Regional Geography	
GEOG 226	Political Geography	
GEOG 248	Geography of Africa	
GEOG 342	Europe	
GEOG 343	Latin America & the Caribbean	
GEOG 344	North America	
GEOG 281	Maps and GIS	3
GOVT 111	Introduction to American Government	3
GOVT 221	Introduction to Comparative Political Systems	3
GOVT 251	Introduction to Global Politics	3
History Electives - Choose 2 of the following:		6
HIST 101	Europe and the World 1350-1789	
HIST 102	Europe and World 1789-Present	
HIST 206	World Culture & Religion to 1500	
HIST 280	Pre-Colonial Africa	
HIST 105	History Matters	3
HIST 106	Contours of US History	3
HIST 205	The Art & Craft of History	3
PSYC 100	General Psychology	3
SOCY 210	Sociology of the Family	3
Total Hours		45

BSE SST Concentration Courses

Code	Title	Hours
Due to the interdisciplinary nature of the social studies major, please work closely with your advisor to select courses appropriate to your plan. You must take 15 total credits to complete the concentration.		
Geography		0
You may take up to 9 credits of Geography (GEOG) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Government		0
You may take up to 9 credits of Government (GOVT) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
History		0
You may take up to 9 credits of History (HIST) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		
Anthropology		0
You may take up to 6 credits of Anthropology (ANTH) courses toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.		

Psychology 0
You may take up to 6 credits of Psychology (PSYC) at the 200-level or higher toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Sociology 0
You may take up to 6 credits of Sociology (SOCY) courses toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Total Hours 0

Professional Education

Code	Title	Hours
EDUCATIONAL FOUNDATIONS		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
REQUIRED EDUCATION COURSES		
EDSE 321	Issues in Secondary Education	3
EDFN 330	Instructional Technology, Design & Assessment	3
EDSE 433	Teaching of Secondary Social Studies	3
ACCOMMODATIONS AND ADAPTATIONS		
EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3
STUDENT TEACHING		
EDSE 471	Student Teaching Seminar	3
EDSS 461	Student Teaching in Soc Sci	9
Total Hours		33

Advanced Professional Studies, BSE

Code	Title	Hours
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*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.

APS REQUIREMENTS

English Composition - Choose 1 of the following:		3
ENGL 110	English Composition	
ENGL 110H	Hrs:English Composition	
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hrs:African American Lit 2	

ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211	Foundations Modern Education	6
& EDFN 241	and Psychological Foundations of Teaching	

48 earned (transcript) credit hours are required

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours 12

Sustainability Studies Minor

A minor in sustainability studies is an interdisciplinary examination of themes in sustainable development, environmental studies, public policy, city and regional planning, economics, and social well-being. A sustainability minor complements most major programs of study in business, social sciences, natural sciences, and human services. 18 credits required.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Mathematics

The Department of Mathematics offers three baccalaureate-degree programs with a major in mathematics. It also offers minors in mathematics and statistics.

The recommended course sequences in the three mathematics programs are virtually identical through the first two years. The Bachelor of Arts (B.A.) degree program in mathematics is a flexible curriculum designed to accommodate the widest possible range of career objectives. It is structured according to the traditional liberal arts approach to college education. The second semester of a foreign language is required in the B.A. program. The Bachelor of Science (B.S.) degree program is more specifically applications oriented. With more required courses in mathematical analysis and science, it is somewhat less flexible than the B.A. program. The Bachelor of Science in Education (B.S.Ed.) degree program is the degree and certification degree program for prospective secondary teachers of mathematics. In addition to having mathematics course requirements comparable to those of the two other programs, the B.S.Ed. requires appropriate educational methods courses.

Mathematics majors may elect an option in actuarial science, applied mathematics or statistics designed to prepare students for careers in these applied fields.

For admission as a major in mathematics, a student is expected to have a sound preparation in high school academic mathematics: algebra I and II, plane geometry and precalculus (trigonometry and analytic geometry). Such students normally begin their mathematics sequence with Calculus I. Students who have completed a calculus course in high school are encouraged to take the College Board Advanced Placement Exam and have their score sent to Millersville University for evaluation. University credit for first year-level mathematics courses may be offered to students with scores of 3 or higher. For further information, see Advanced Placement Examinations in the Admissions (p. 18) section.

In an effort to ensure that each student is properly placed, the department administers mathematics placement assessments. For more

information, see the Academic Requirements (p. 36): Proficiency Requirements section.

The cooperative education program allows students valuable experience in a full-time or part-time professional position related to their career goals, adding practical relevance to their program of study as well as significant financial remuneration. This often leads to full-time employment after graduation. Students may elect one or more cooperative education experiences.

the programs

- Mathematics Minor (p. 325)
- Mathematics, B.A. (p. 325)
- Mathematics, B.A. – Actuarial Sciences Option (p. 325)
- Mathematics, B.A. – Statistics Option (p. 325)
- Mathematics, B.S. (p. 326)
- Mathematics, B.S. - Actuarial Sciences Option (p. 327)
- Mathematics, B.S. - Applied Mathematics Option (p. 327)
- Mathematics, B.S. - Statistics Option (p. 327)
- Mathematics, B.S.Ed. (p. 327)
- Mathematics, B.S.Ed. - Actuarial Science Option (p. 329)
- Mathematics, B.S.Ed. - Statistics Option (p. 329)
- Statistics Minor (p. 329)

the faculty

Buchanan, J; Professor

College of Science and Technology

B.S., Davidson College, 1983; M.S., North Carolina State University, 1985; Ph.D., Ibid., 1993

Cardwell, Antonia; Associate Professor

College of Science and Technology

B.S., University of the Witwatersrand (Johannesburg), 1998; M.A., Kent State University, 2001; Ph.D., Ibid., 2005

Dever, Lindsay; Assistant Professor

College of Science and Technology

B.S., The College of New Jersey, 2015; M.A., Bryn Mawr College, 2019; Ph.D., Bryn Mawr College, 2022

Fenwick, James; Professor

College of Science and Technology

B.S., Clarion State College, 1980; M.S., University of Vermont, 1983; Ph.D., University of Wyoming, 1985

Garber, Diana; Instructor

College of Science and Technology

B.A., Millersville University, 1991; M.Ed., Ibid., 1997

Han, Zhigang; Associate Professor

College of Science and Technology

B.A., Fudan University (China), 1997; Ph.D., Stony Brook University, 2006

Heitmann, Noel; Associate Professor

College of Science and Technology

B.S., The Pennsylvania State University, 1989; B.S., University of Pittsburgh, 1996; M.A., Ibid., 1998; Ph.D., Ibid., 2003

Ma, Baoling; Associate Professor

College of Science and Technology

B.S., Ocean University of China, 2007; Ph.D., University of Louisiana-Lafayette, 2012

Mikula, Richard; Professor
College of Science and Technology
B.S., Temple University, 1998; Ph.D., Rutgers, The State University of New Jersey, 2006

Moss, Erin; Professor
College of Science and Technology
B.A., University of North Carolina at Asheville, 2001; M.S., University of Connecticut, 2003; Ph.D., Purdue University, 2009

Robinson, Kevin; Associate Professor
College of Science and Technology
B.A., Messiah College, 1993; M.S., University of Florida, 1995; Ph.D., Ibid., 2000

Stewart, Patrick; Assistant Professor
College of Science and Technology
B.S., Marshall University, 2011; M.A., Ibid., 2014; M.S., Virginia Polytechnic Institute and State University, 2015; Ph.D., Bowling Green State University, 2020

Taylor, Cynthia; Professor
College of Science and Technology
B.S., Indiana University of Pennsylvania, 1988; M.S., Rensselaer Polytechnic Institute, 2002; Ph.D., University of Missouri, 2011

Washington, H; Associate Professor
College of Science and Technology
B.S., Fayetteville State University, 1998; M.S., North Carolina State University, 2001; Ph.D., Ibid., 2012

White, Janet; Professor
College of Science and Technology
B.A., Grove City College, 1988; M.Ed., Millersville University, 1994; Ph.D., American University, 2002

Wismer, Michael; Assistant Professor
College of Science and Technology
B.A., Messiah College, 1987; M.A., West Chester University, 1991; Ph.D., University of Delaware, 1997

Zhan, Mingquan; Professor
College of Science and Technology
B.S., Nanjing Normal University, 1990; M.S., Ibid., 1997; Ph.D., West Virginia University, 2003

the courses

MATH 100: 3 s.h.

Survey of Mathematical Ideas (G2)

A liberal arts course for students who will not be scheduling a technical/professional math course. A survey of mathematics important to the history of Western civilization and to the modern world. Introductory modules covered usually include number theory, geometry, topology, probability, statistics, graph theory, consumer mathematics and set theory. No credit in math/science block for math and science majors. Prereq: MATH 090 with a grade of C- or higher or math placement testing/evaluation before registration. Only one of MATH 100, 102, 107, and 108 may be taken for general education credit.

MATH 101: 3-5 s.h.

College Algebra

For students who need to improve their algebraic skills before taking a higher-level course such as MATH 151, 160 or 161; focuses on algebraic topics needed for success in college mathematics and its applications. Includes the real number system, linear equations and inequalities, word problems, polynomials and factoring, rational algebraic expressions, exponents and radicals, quadratic equations, irrational equations, graphs of equations, systems of equations and logarithmic and exponential functions. Prereq: high school algebra I, II and geometry; math placement testing/ evaluation before registration.

MATH 102: 3 s.h.

Math in Non-European Cultures (D, G2)

A survey of mathematical ideas developed by non-European cultures, including, but not limited to, those of Africans, Asians and native North, Central and South Americans. Includes culture and specific examples from the following areas of mathematics: number theory, topology, probability, group theory and logic. No credit under block G2 for math or science majors. Prereq: MATH 090 with a grade of C- or higher, math placement testing/ evaluation before registration. Only one of MATH 100, 102, 107, and 108 may be taken for general education credit.

MATH 104: 3 s.h.

Fundamentals of Math 1 (G2)

Mathematics content that elementary and special education teachers of mathematics at any level need to know and understand before beginning to teach. Designed to equip all such majors with sufficient knowledge and facility in mathematics for teaching it effectively. Includes sets and logic, number systems, structure of algorithms, number theory, properties of integers, rational numbers and real numbers, and beginning geometry and measurement. Emphasis on problem solving and reasoning within each topic. Required of all early childhood education and middle level majors. Prereq: math placement testing/evaluation before registration.

MATH 105: 3 s.h.

Fundamentals of Math 2 (G2)

An extension of MATH 104; covers additional mathematics topics relevant to teaching elementary mathematics. Includes algebra, additional study in geometry and measurement, probability and statistics, graphing and further emphasis on problem solving and reasoning. Required of all early childhood education majors. Prereq: C or higher in MATH 104 and passing score on the basic skills test.

MATH 107: 3 s.h.

Math Survey: Sports & Games (G2)

A liberal arts course for students who will not be scheduling a technical/professional mathematics course. Explores topics in mathematics through the lens of sports, athletic competitions, and games. Introductory modules may include (but not be limited to): number theory, geometry/measurement, algebra, probability, statistics, voting methods, and graph theory. No credit under G2 block for math or science majors. Only one of MATH 100, 102, 107, and 108 may be taken for general education credit. Prereq: MATH 090 with a grade of C-minus or higher or MPT 100.

MATH 108: 3 s.h.**Math Survey: Art & Music (G2)**

A liberal arts course for students who will not be scheduling a technical/professional mathematics course. Explores topics in mathematics through the lens of the fine arts, which may include (but is not limited to) architecture, visual arts, music, and dance. Mathematical content covered may include geometry, transformations, patterns, algebra, sequences and series, permutations, number theory, and fractals. No credit under G2 block for math or science majors. Only one of MATH 100, 102, 107, and 108 may be taken for general education credit. Prereq: MATH 090 with a grade of C-minus or higher or MPT 100.

MATH 110: 2 s.h.**Trigonometry**

For students preparing to take calculus who need additional background in trigonometry. Beginning with angles, numerical trigonometry and triangle solving, it develops the concepts and analytical skills required in calculus: identities, inverse functions, trigonometric equations, graphs and applications. Prereq: MATH 101 or math placement testing/evaluation before registration and high school algebra I, II and geometry.

MATH 120: 2 s.h.**Logic for Information Technology (G2)**

Discrete mathematics and its applications to technology including formal mathematical notation, propositional logic, predicate logic, set theory, relations, functions, and matrices. No credit toward a math or four-year computer science major. Prereq: MPT 120 or C- or higher in MATH 101.

MATH 130: 3 s.h.**Elements of Statistics 1 (G2)**

Derivation of basic formulas; measures of central tendency and variability; probability and normal curve; sampling and hypothesis testing; confidence intervals. No credit toward a math or four-year computer science major, or under block G2 for majors in the School of Science and Mathematics except for nursing majors and allied health technology majors. Prereq: any 100-level MATH course or math placement testing/evaluation before registration. MATH 234 and MATH 235 are equivalent courses, credit will not be given for MATH 130, 234 and/or 235.

MATH 151: 4 s.h.**Calculus for Management (G2)**

Elementary calculus and its applications in business, economics, life and social sciences. Functions, limits and continuity. The derivative, applications in marginal analysis, optimization, differentials and error estimation. Antiderivatives, area under a curve and definite integrals; integration by parts. Exponential and logarithm functions; applications to growth and decay problems. Improper integrals. No credit toward a major or minor in mathematics. Prereq: MATH 101 or equivalent with a grade of C- or higher, or math placement testing/evaluation before registration. Credit will not be granted for more than one course from MATH 151, 161 or 163H. These courses are considered equivalent and will be processed as repeat credit.

MATH 160: 4 s.h.**Precalculus (G2)**

For students preparing to take Calculus I (MATH 161) who need additional background. Covers topics in which beginning calculus students are often deficient: elementary functions, curve sketching, theory of equations, inequalities, trigonometry and analytic geometry. No credit toward a math major. Prereq: two years of high school algebra, one year of high school geometry and trigonometry, and math placement testing/evaluation before registration; or MATH 101.

MATH 161: 4 s.h.**Calculus 1 (G2)**

Introduces concepts and techniques of calculus, beginning with limits. Major emphasis is on the theory and applications of limits, continuity, derivatives, antiderivatives and the definite integral. Includes introductory calculus of trigonometric, inverse trigonometric, exponential and logarithmic functions. Prereq: C- or higher in MATH 160 or math placement testing/evaluation before registration. Credit will not be granted for more than one course from MATH 151, 161 or 163H. These courses are considered equivalent and will be processed as repeat credit.

MATH 161H: 4 s.h.**Hon: Calculus 1 (G2)****MATH 163H: 5 s.h.****Honors Calculus 1 (G2)**

The progression of mathematical concepts, in the context of the thought and civilization of the time, from the Babylonians to the 20th century. Focus on the contributions of the Hellenic and Alexandrian Greeks as a point of departure for the evolution of geometry, number theory, analysis and logic. Proofs of some of the great theorems. Offered in fall, spring and periodically in summer. Credit will not be granted for more than one course from MATH 151, 161 or 163H. These courses are considered equivalent and will be processed as repeat credit.

MATH 179: 4 s.h.**Experimental**

Experimental

MATH 204: 3 s.h.**Algebraic Foundations for Mid-Level Teacher (G2)**

Designed for middle-level (4-8) teacher candidates. It contains a concrete study of algebraic structures encountered in the middle-level school mathematics curriculum. Content includes sequential patterns and examples and properties of rings and integral domains such as the integers, integers mod n , polynomials and matrices. Prereq: passing score on BST, and grade of C or better in MATH 104 or department permission. For middle level education majors only.

MATH 205: 3 s.h.**Geometry for the Middle-Level Teacher (G2)**

Designed to equip middle-level (4-8) teacher candidates with sufficient knowledge and mathematical experiences for teaching geometry and measurement effectively. Includes the study of two-dimensional and three-dimensional figures, geometric constructions, congruence, similarity, angle measure, distance, area and volume. Connections between geometry and other mathematics topics; nature and art are addressed. Prereq: passing score on BST, and C or better in MATH 104 or department permission. For middle-level education majors only.

MATH 211: 4 s.h.**Calculus 2 (G2)**

Continuation of MATH 161. Techniques of integration, applications of the definite integral, improper integrals, parametric equations, polar coordinates, sequences and infinite series. Prereq: C- or higher in MATH 161 or 163.

MATH 230: 3 s.h.**Probability and Stats for Mid-Level Teacher (G2)**

Designed for middle-level (4-8) teaching candidates as an introduction to probability and statistics. Course will cover the following topics at an appropriate level: descriptive statistics, counting and basic probability, concept of random sampling, random variables and probability distributions, and statistical inference involving confidence intervals and hypothesis testing. Prereq: passing score on BST and C or better in MATH 104 or department permission. For middle-level education majors only.

MATH 234: 4 s.h.**Statistics for Health Sciences (G2)**

For nursing program and other health science students. Descriptive statistics, odds ratios, counting, basic probability, concept of random sampling, random variables, probability distributions, and statistical inference including confidence interval estimation and hypothesis testing for one and two sample problems involving means and proportions, chi-squared tests, one way ANOVA, simple linear regression, and correlation will be covered at an appropriate level. Prereq: Math Placement or a 100 level MATH course. MATH 130 and MATH 235 are equivalent courses, credit will not be given for MATH 130, 234 and/or 235.

MATH 235: 3 s.h.**Survey of Statistics (G2)**

A survey of elementary probability theory, estimation, hypothesis testing and simple regression and correlation. Interpretation of statistical inference in the analysis of data. Emphasis on applications in both behavioral and physical sciences. Prereq: MATH 101 or MATH 151 or higher, or math placement of MATH 151 or higher. MATH 130 and MATH 234 are equivalent courses, credit will not be given for MATH 130, 234 and/or 235.

MATH 236: 3 s.h.**Elements of Statistics 2 (G2)**

An extension of MATH 130 or MATH 235. Includes estimation, hypothesis testing, design of experiments with analysis of variance, regression analysis, covariance analysis and nonparametric approaches. Includes experiences using a variety of computing devices. A substantial methods course for any major who needs to use statistical techniques. No credit toward math major. Offered in spring. Prereq: MATH 130 or MATH 235.

MATH 255: 3 s.h.**Intro to Data Analytics**

Introduction to data analysis techniques and programming that enables real-time decision making in IT organizations. Includes skills and applications in pre-processing, preparing, and reporting data for further analysis. (Cross-listed with INTE 255, credit may not be received for both courses.)

MATH 256: 4 s.h.**Data Visualization and Communication (G2)**

This course is the continued exploration and application of data analysis techniques and programming that allows for the cleanup, analysis, interpretation, and presentation of business-related data. Includes skills and applications in pre-processing, preparing, reporting, and presenting data for further analysis. Students will be exposed to datasets created and managed by business organizations, and learn to ask salient strategic and operational questions based on the information contained within the datasets. Students will analyze statistical relations between variables, create visual depictions of the relations inherent in the data, and communicate their findings to broad audiences in oral and written formats.

MATH 279: 1-4 s.h.**Experimental**

Experimental

MATH 300: 3-12 s.h.**Co-Op Ed Experience in Math**

Co-Op Ed Experience in Math

MATH 301: 3 s.h.**History of Mathematics (P)**

The progression of mathematical concepts in the context of the thought and civilization of the time, from the Babylonians to the 20th century. Focus on the contributions of the Hellenic and Alexandrian Greeks as a point of departure for the evolution of geometry, number theory, analysis and logic. Proofs of some of the great theorems. Prereq: COMM 100, ENGL 110, MATH 151 or 156 or 161 or 163, and junior status.

MATH 301H: 3 s.h.**Hnrs:History of Mathematics (P)**

The progression of mathematical concepts in the context of the thought and civilization of the time, from the Babylonians to the 20th century. Focus on the contributions of the Hellenic and Alexandrian Greeks as a point of departure for the evolution of geometry, number theory, analysis and logic. Proofs of some of the great theorems. Prereq: COMM 100, ENGL 110, MATH 151 or 156 or 161 or 163, and junior status.

MATH 304: 4 s.h.**Matrix Algebra & Applications**

An introduction to matrix algebra with emphasis on applications: systems of linear equations, matrix algebra, determinants, Euclidean and general vector spaces, inner product spaces, eigenvalues and eigenvectors, matrix transformations, numerical methods for matrices, selected applications such as Markov chains, strategy games, cryptography, bar codes, Hadamard matrices, error-correcting codes, graph theory, computer graphics and internet search engines. Credit will not be granted for both MATH 304 and 322. Prereq: C- or better in MATH 161/163H.

MATH 305: 2 s.h.**Teaching Math in Secondary Schools 1**

The first of two secondary mathematics methods courses, participants will investigate mathematics teaching and learning from both teacher and student perspectives. Course participants will engage in mathematical problem solving and in the study of mathematics as the foundation for understanding current curriculum and standards. Lesson planning follows from the consideration of different types of mathematical content, including skills and concepts. Looking specifically at the learning of mathematics and questioning to promote higher-level thinking, this course prepares students for field experiences in subsequent semesters. Recommended: take concurrently with EDFN 211 and EDFN 241. Pre/Coreq: C- or higher in MATH 211.

MATH 310: 3 s.h.**Intro to Mathematical Proof (W)**

Emphasizes mathematical reasoning and communication of mathematical ideas both orally and in writing. Symbolic logic. Techniques of mathematical proof. Algebra of sets, binary relations and functions. Infinite sets, both countable and uncountable. Prereq: ENGL 110 and C- or higher in MATH 211.

MATH 310H: 3 s.h.**Hon: Intro to Mathematic Proof (W)**

MATH 311: 4 s.h.**Calculus 3 (G2)**

Continuation of MATH 211. Vector calculus, functions of several real variables, partial differentiation, implicit functions, multiple integrals, line and surface integrals and applications. Prereq: C- or higher in MATH 211.

MATH 312: 1 s.h.**Software for Multivariable Calc**

This course will introduce students to a computer algebra system and programming language of use in understanding multivariable calculus. Assuming no prior experience with this software, the students will learn how to evaluate algebraic expressions, plot functions and perform many operations common in calculus, such as integration and differentiation. Students will develop skills with this software that are useful for the visualization and manipulation of multivariable and vector-valued functions. Offered infrequently. Coreq: C- or higher in MATH 311.

MATH 319: 1 s.h.**Calculus and Actuarial Prbl Slvg**

An extension and synthesis of the calculus sequence that provides students with the problem-solving skills emphasized in such examinations as the Society of Actuaries Exam 1. Does not count as an upper-division elective for the mathematics major or minor. Offered in spring. Prereq: C- or higher in MATH 311.

MATH 322: 4 s.h.**Linear Algebra 1 (G2)**

A rigorous introduction to linear algebra. Includes systems of linear equations, matrix algebra, determinants, vector spaces, inner product spaces geometry in R^n , linear transformations, orthogonal transformations, eigentheory and diagonalization. Prereq or coreq: C- or higher in MATH 311; MATH 310 recommended. Credit will not be given for this course and MATH 304. MATH 322 is intended for mathematics majors and is more theory and proof-based. MATH 304 is more application oriented and intended for computer science or data science majors

MATH 325: 3 s.h.**Mathematical Connections**

Mathematical Connections is a 3-credit required course for BSE mathematics majors. Pre-service secondary mathematics teachers (middle and high school) will explore the nature of the mathematics that they will teach through the lens of the undergraduate mathematics courses that they have taken as part of their required program. Mathematical topics will include number systems, functions, number theory, trigonometry, geometry (Euclidean and non-Euclidean), calculus, and statistics. The course will include an examination of concept analysis, problem analysis and mathematical connections between standard secondary mathematics content and post-secondary mathematics coursework. The course will actively involve pre-service teachers in a productive dialogue about and rigorous investigation into the mathematics that they will teach. Restricted to BSE majors. Pre/ Coreq: C- or higher in MATH 333, and MATH 345, and MATH 354 or permission of instructor.

MATH 333: 4 s.h.**Probability and Statistics**

Designed for mathematics education majors. A rigorous study of probability, distribution theory and the basics of statistical inference. Includes probability, expectation, discrete and continuous distributions, descriptive statistics and both estimation and hypothesis testing for one- and two-sample problems. Credit will not be granted for both MATH 333 and MATH 335. Prereq: C- or higher in MATH 311.

MATH 335: 3 s.h.**Mathematical Statistics 1**

Probability, random variables and probability distributions, mathematical expectation, special probability distributions and probability densities. MATH 335 may be considered as an introductory course in probability theory. Offered in fall. Credit will not be granted for both MATH 333 and MATH 335. Prereq: C- or higher in MATH 311.

MATH 345: 3 s.h.**Abstract Algebra 1**

Groups, rings, fields, integral domains. Emphasis on structure of algebra. Prereq: C- or higher in MATH 310 and 322.

MATH 353: 3 s.h.**Survey of Geometry**

Various examples of axiom systems, axiomatic development of Neutral Geometry followed by Euclidean and Hyperbolic Geometry. Models for Euclidean and Hyperbolic Geometry. Emphasis on proving geometric theorems, both orally and in writing. Offered in fall. Prereq: C- or higher in MATH 310 and 322 or permission of instructor.

MATH 354: 4 s.h.**Classical and Transformational Geometry**

Geometry from both classical and transformational points of view. The classical part of the course will focus on the axiomatic development of neutral geometry followed by Euclidean and hyperbolic geometry. The transformational part of the course will begin with the study of two families of transformations: isometries and similarities, followed by the investigation of various geometric theorems in terms of these two families of transformations. Emphasis on proving geometric theorems using both classical and transformational approaches. Prereq: C- or better: MATH 310 and MATH 322.

MATH 355: 3 s.h.**Transformational Geometry**

The study of geometry from a transformational point of view. The group of affine transformations, with the subgroups of similarities and motions, is studied with investigation of invariant properties. Some exposure to transformations in the complex plane. Offered in spring and periodically in summer. Prereq: C- or higher in MATH 310 and 322 or permission of instructor.

MATH 355H: 3 s.h.**H: Transformational Geometry****MATH 365: 3 s.h.****Ordinary Differential Equation**

First-order differential equations; linear first- and second-order initial-value problems; power series solutions; applications. Also includes at least one of the following topics: special functions of mathematical physics, Laplace transforms, systems of first-order equations. Offered in fall, spring. Prereq: C- or higher in MATH 311.

MATH 370: 3 s.h.**Operations Research**

Principles of model building; examples from linear optimization, network analysis, dynamic programming, probabilistic decision theory, Markov chains, queuing theory, simulation and inventory models. Applications and theory will be examined. Offered periodically. Prereq: C- or higher in MATH 322 and one of MATH 235, 333 or 335 or permission of instructor.

MATH 372: 3 s.h.**Financial Mathematics I**

Provides an understanding of the fundamental concepts of financial mathematics, and how those concepts are applied in calculating present and accumulated values for various streams of cash flows as a basis for future use in: reserving, valuation, pricing, asset/liability management, investment income, capital budgeting, and valuing contingent cash flows. Prereq: C- or better in MATH 211

MATH 375: 3 s.h.**Numerical Analysis**

Numerical methods for solving systems of linear equations, solving nonlinear equations, integration, interpolation, approximation and least squares curve fitting. Error theory. Offered in spring. Prereq: C- or higher in CSCI 161, MATH 311 and 322.

MATH 379: 3 s.h.**Experimental**

Experimental

MATH 393: 3 s.h.**Number Theory**

The study of the properties of integers with respect to the fundamental operations. Primary emphasis on the logical derivations of these properties. Includes induction, divisibility, congruences, theorems of Fermat and Euler, continued fractions and quadratic reciprocity. Offered periodically. Prereq: C- or higher in MATH 310.

MATH 393H: 3 s.h.**H: Number Theory**

H: Number Theory

MATH 395: 3 s.h.**Introduction Combinatorics**

Mathematical foundation for the concepts and techniques used in combinatorics. Topics include recurrence relations, finite differences, generating functions, pigeonhole principle, special sequences of integers (such as Fibonacci, Sterling and Bell sequences), principle of inclusion and exclusion, and an introduction to the theory of graphs. Applications will be indicated. Offered periodically. Prereq: C- or higher in MATH 322.

MATH 400: 3-12 s.h.**Co-Op Ed Experience in Math**

Co-Op Ed Experience in Math

MATH 405: 3 s.h.**Teaching Math in Secondary Schools 2**

The second of two secondary mathematics methods courses, participants will focus on: lesson planning, unit development, and implementation; assessment and evaluation; classroom management and organization within school communities; and continued professional growth as reflective practitioners. A considerable portion of class time will be devoted to teaching mathematics to secondary school students. Must be taken simultaneously with EDSE 321, EDSE 340, SPED 346. Offered fall. Prereq/Co-requisite: C- or higher in MATH 305. Prereq: C- or higher in MATH 325, MATH 333 (or 335/435), MATH 345, and MATH 354.

MATH 408: 1-3 s.h.**Topics in Mathematics**

Topics in Mathematics. Topics courses are scheduled by arrangement with the instructor; semester hours of credit and meeting times for those courses are set by agreement.

MATH 418: 1-3 s.h.**Topics in Math Education**

Topics in Mathematics Education. Topics courses are scheduled by arrangement with the instructor; semester hours of credit and meeting times for those courses are set by agreement.

MATH 419: 1 s.h.**Actuarial Science Seminar**

A synthesis of calculus and probability that will develop the knowledge of the fundamental probability tools for quantitatively assessing risk. Students will be provided with the skills required in such examinations as the SOA Exam P and CAS Exam 1. Does not count as an upper-division elective for the mathematics major or minor. Offered in spring.

MATH 422: 3 s.h.**Linear Algebra 2**

A continuation of MATH 322. Topics include further theory of linear transformations and their matrix representations: invariant subspaces, equivalent and similar matrices, canonical forms. The vector space $L(V, W)$. Orthogonal transformations and isometries; analysis of Euclidean motions in R^3 . Least squares approximation and theory of generalized inverses. Bilinear and quadratic forms and their matrix representations; applications to conic sections in R^2 and quadric surfaces in R^3 . Complex vector spaces. Offered periodically. Prereq: MATH 310 and C- or higher in MATH 322.

MATH 435: 3 s.h.**Mathematical Statistics 2**

A continuation of MATH 335. Functions of random variables, sampling distributions, point estimation, interval estimation, hypotheses-testing theory and applications. Offered in spring. Prereq: C- or higher in MATH 335.

MATH 435H: 3 s.h.**HNRS: Mathematical Stats 2****MATH 438: 1-3 s.h.****Topics in Statistics**

Topics in Statistics. Topics courses are scheduled by arrangement with the instructor; semester hours of credit and meeting times for those courses are set by agreement.

MATH 445: 3 s.h.**Abstract Algebra 2**

Continuation of MATH 345. Introduction to field theory, rings of polynomials, introduction to Galois theory. Offered periodically. Prereq: C- or higher in MATH 345.

MATH 457: 3 s.h.**Elementary Differential Geometry**

Frenet frames; curvature and torsion of curves in 3-space. Calculus of vector fields; geodesics and curvature of surfaces in 3-space. Surface area and volume. The Euler characteristic of a surface and the Gauss-Bonnet theorem. Rigid motions and isometries. Riemannian metrics, parallelism, non-Euclidean geometries and applications. Offered periodically. Prereq: C- or higher in MATH 310, 311, 322.

MATH 464: 3 s.h.**Real Analysis 1**

Rigorous development of the concepts and methods of calculus. The real number system and its topology; theory of limits and continuity; differentiable functions and their properties, the Riemann integral. Prereq: C- or higher in MATH 311 and MATH 345 or department permission.

MATH 464H: 3 s.h.**Hnrs: Real Analysis 1**

MATH 465: 3 s.h.**Real Analysis 2**

Continuation of MATH 464. Topics chosen from the following: convergence and uniform convergence of infinite sequences and series of functions; topology of Euclidean n -space \mathbb{R}^n ; differential calculus of functions $\mathbb{R} \rightarrow \mathbb{R}$ and $\mathbb{R}^n \rightarrow \mathbb{R}^m$; extreme values; implicit and inverse function theorems; Riemann integration in \mathbb{R}^n ; metric spaces; function spaces; Riemann-Stieltjes integration. Offered infrequently. Prereq: C- or higher in MATH 464.

MATH 467: 3 s.h.**Partial Differential Equations**

Fourier series and the method of separation of variables; the wave equation, heat equation and Laplace's equation; d'Alembert's formula. Maximum principles, energy integrals and uniqueness. Sturm-Liouville problems and eigenfunction expansions. Offered in fall. Prereq: C- or higher in MATH 365.

MATH 471: 3 s.h.**Mathematical Modeling**

Applications of mathematics to real-world problems drawn from industry, research laboratories, the physical sciences, and engineering and the scientific literature. May include parameter estimation, curve fitting, elementary probability, optimization, computer programming, and ordinary and partial differential equations. Offered periodically. Prereq: C- or higher in MATH 365.

MATH 472: 3 s.h.**Financial Mathematics II**

Develops knowledge of the theoretical basis of actuarial models and the application of those models to insurance and other financial risks. Pricing formulas for forwards, futures, and options are developed and used in financial strategies designed to reduce risk. Prereq: C- or better in MATH 335 or MATH 333 and C- or better in MATH 372.

MATH 478: 1-3 s.h.**Topics in Applied Mathematics**

Topics in Applied Mathematics. Topics courses are scheduled by arrangement with the instructor; semester hours of credit and meeting times for those courses are set by agreement.

MATH 479: 3 s.h.**Experimental**

Experimental

MATH 483: 3 s.h.**Point-Set Topology**

Foundation course for extensive study in modern higher analysis, topology and related areas. Infinite set theory, metric spaces, topological spaces, separation properties, continuous mappings, homeomorphisms, convergence theory, product spaces, quotient spaces, connectedness, compactness, function spaces, applications. Offered infrequently. Prereq: C- or higher in MATH 464 or permission of instructor.

MATH 489: 1-4 s.h.**Honors Course**

For the definition of honors course/thesis and eligibility, refer to the Special Academic Opportunities section of this catalog.

MATH 498: 1-3 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

MATH 499: 1-4 s.h.**Departmental Honors (AW)**

For the definition of honors course/thesis and eligibility, refer to the Special Academic Opportunities section of this catalog.

MATH 500: 3-12 s.h.**Co-Op Ed Experience in Math**

Co-Op Ed Experience in Math

RETENTION IN THE MAJOR POLICY

University requirements for retention must be met. A mathematics major taking any course required as a prerequisite for a later mathematics course must earn a grade of C- or higher in that course before taking the later course for which it is a prerequisite.

Mathematics Minor

A minor in Mathematics will be beneficial for developing strong critical thinking skills and understanding abstract concepts. Study in Mathematics supports careers in business, science, agriculture, and engineering. The mathematics minor may be a complement one's primary major.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Mathematics, B.A.

The B.A. degree program in mathematics is a flexible curriculum designed to accommodate the widest possible range of career objectives. It is structured according to the traditional liberal arts approach to college education. The second semester of a foreign language is required.

Mathematics, B.A. – Actuarial Sciences Option

The Actuarial Science option will prepare you to combine mathematics and statistics to assess risk in insurance, finance, and other industries. Students successfully completing the option will be prepared to take the first two examinations administered by the Society of Actuaries.

Mathematics, B.A. – Statistics Option

Studying Statistics at Millersville University will prepare students to develop and apply mathematical and statistical theory and methods to collect, organize, interpret, and summarize numerical data. Students who complete the Statistics Option find that it prepares them well for graduate

school or careers in agriculture, business, education, government, industry, social or applied sciences.

Mathematics, B.S.

The B.S. degree program in mathematics is more specifically application-oriented than the B.A. degree program in mathematics, requiring a greater concentration in mathematical analysis and science. The program is designed to position its graduates for a career in business, industry, or research in mathematics.

Major in Mathematics, BS

Code	Title	Hours
Credits Required for Major		

true	Minimum Residency 50% of Major Courses	
true	Minimum GPA 2.0 for Major	

REQUIRED MATHEMATICS COURSES

Calculus I (C- or better required) - Choose 1 of the following:			4-5
MATH 161	Calculus 1		
MATH 163H	Honors Calculus 1		
MATH 211	Calculus 2 (C- or better required)		4
MATH 310	Intro to Mathematical Proof (C- or better required)		3
MATH 311	Calculus 3 (C- or better required)		4
MATH 322	Linear Algebra 1 (C- or better required)		4
MATH 335	Mathematical Statistics 1		3
MATH 345	Abstract Algebra 1 (C- or better required)		3
MATH 365	Ordinary Differential Equation		3
MATH 375	Numerical Analysis		3
MATH 464	Real Analysis 1		3

REQUIREMENTS FOR NO DECLARED OPTION

Additional Mathematics Course - Choose 1 of the following:			3
MATH 422	Linear Algebra 2		
MATH 435	Mathematical Statistics 2		
MATH 467	Partial Differential Equations		
MATH 472	Financial Mathematics II		
Elective Mathematics Courses - Choose 6 hours from:			6
MATH 354	Classical and Transformational Geometry		
MATH 370	Operations Research		
MATH 372	Financial Mathematics I		
MATH 393	Number Theory		
MATH 395	Introduction Combinatorics		
MATH 422	Linear Algebra 2		
MATH 435	Mathematical Statistics 2		
MATH 445	Abstract Algebra 2		

MATH 457	Elementary Differential Geometry		
MATH 465	Real Analysis 2		
MATH 467	Partial Differential Equations		
MATH 471	Mathematical Modeling		
MATH 472	Financial Mathematics II		
MATH 483	Point-Set Topology		
Any 4@8 MATH course(s)			
MATH 535	Statistical Methods 1		
MATH 536	Statistical Methods 2		
MATH 566	Complex Variables		
MATH 592	Graph Theory		
Total Hours			43-44

Req Related for Mathematics, BS

Code	Title	Hours
REQUIRED RELATED - STATISTICS OR NO OPTION		
Intro. to Computing I		4
CSCI 161	Introduction to Programming 1	
General Physics I		5
PHYS 231	Physics 1 with Calculus	
ADDITIONAL REQUIRED RELATED (A OR B) - Choose 1 of the following:		
A.) SCHOOL OF SCIENCE AND MATHEMATICS COURSES - See Appendix 1		
B.) COURSES FROM A SINGLE DEPARTMENT - See Appendix 2		
Total Hours		9

Appendix 1. A.) SCHOOL OF SCIENCE AND MATHEMATICS COURSES

Code	Title	Hours
Elective Required Related Science - Choose 2 classes totaling at least 5 hours from:		
Any BIOL course(s)		
Any CHEM course(s)		
Any CSCI course(s)		
Any ESCI course(s)		
PHIL 312	Mathematical Logic	
Any PHYS course(s)		
Note: This requirement may not be satisfied with BIOL 100, BIOL 108H, BIOL 204, BIOL 205, BIOL 207, BIOL 208, BIOL 247, BIOL 257, any CHEM 101-104 course(s), CHEM 110, CHEM 188, CHEM 235, CSCI 101, CSCI 111, CSCI 121, ESCI 101, ESCI 102, ESCI 104, ESCI 105, ESCI 107, ESCI 110, PHYS 103, PHYS 117, PHYS 131, PHYS 132, PHYS 198, or PHYS 205.		
Directed Required Related Science - Choose 1 of the following:		3-5
BIOL 375	Biometry	
CSCI 162	Introduction to Programming 2	
ESCI 340	Cloud Physics & Precip Process	
ESCI 341	Atmospheric Thermodynamics	
ESCI 342	Atmospheric Dynamics 1	
PHYS 232	Physics 2 with Calculus	

Appendix 2. B.) COURSES FROM A SINGLE DEPARTMENT

Code	Title	Hours
Four courses from a SINGLE department		
If you select Option B. Four courses from a SINGLE department, your advisor must email a list of courses to degreeaudit@millersville.edu for them to fulfill this requirement.		

Mathematics, B.S. - Actuarial Sciences Option

The Actuarial Science option will prepare you to combine mathematics and statistics to assess risk in insurance, finance, and other industries. Students successfully completing the option will be prepared to take the first two examinations administered by the Society of Actuaries.

Mathematics, B.S. - Applied Mathematics Option

The Applied Mathematics option is specifically intended to focus on applying mathematical knowledge in fields including (but not limited to): fluid and solid mechanics, physics, chemistry, engineering, biological sciences, economics, finance, and medical science. The program is designed to prepare students for careers or graduate school. Students enrolled in the B.S. program may complete the Applied Mathematics option.

Mathematics, B.S. - Statistics Option

The Applied Mathematics option is specifically intended to focus on applying mathematical knowledge in fields including (but not limited to): fluid and solid mechanics, physics, chemistry, engineering, biological sciences, economics, finance, and medical science. The program is designed to prepare students for careers or graduate school. Students enrolled in the B.S. program may complete the Applied Mathematics option.

Mathematics, B.S.Ed.

The Bachelor of Science in Education for Mathematics Majors provides training in Secondary Mathematics Education and is the degree program for prospective teachers of mathematics in secondary schools. Students receive thorough mathematical content knowledge and pedagogical training to prepare them to teach. In order to graduate in 4 years, students in the B.S.E. program must complete all their academic coursework in 7 semesters, as their final semester is spent in a full-time student teaching field placement. Successful graduates will be certified to teach mathematics in grades 7 through 12 in Pennsylvania and can easily transfer this certification to any state.

Major in Mathematics, BSE

Code	Title	Hours
Credits Required for Major		
true		
Minimum Residency 50% of Major Courses		

REQUIRED MATHEMATICS COURSES

A grade of C- or higher is required in all required math courses, except MATH 464.

Calculus I - Choose 1 of the following: 4-5

MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	
MATH 211	Calculus 2	4
MATH 301	History of Mathematics	3
MATH 305	Teaching Math in Secondary Schools 1	2
MATH 310	Intro to Mathematical Proof	3
MATH 311	Calculus 3	4
MATH 322	Linear Algebra 1	4
MATH 325	Mathematical Connections	3
MATH 345	Abstract Algebra 1	3
MATH 354	Classical and Transformational Geometry	4
MATH 405	Teaching Math in Secondary Schools 2	3
MATH 464	Real Analysis 1	3

REQUIREMENTS FOR NO OPTION DECLARED

STATISTICS REQUIREMENT - Choose 1 of the following options 1-2: 4-6

Option 1. Intro to Probability and Statistics (C- or Better)

MATH 333	Probability and Statistics	
Option 2. Math Statistics I (C- or Better) and Statistics II (C- or Better)		
MATH 335	Mathematical Statistics 1	
MATH 435	Mathematical Statistics 2	

MATHEMATICS ELECTIVES - Choose 3 hours from: 3

MATH 365	Ordinary Differential Equation	
MATH 370	Operations Research	
MATH 372	Financial Mathematics I	
MATH 375	Numerical Analysis	
MATH 393	Number Theory	
MATH 395	Introduction Combinatorics	
MATH 422	Linear Algebra 2	
MATH 445	Abstract Algebra 2	
MATH 457	Elementary Differential Geometry	
MATH 465	Real Analysis 2	
MATH 467	Partial Differential Equations	
MATH 471	Mathematical Modeling	
MATH 472	Financial Mathematics II	
MATH 483	Point-Set Topology	
Any 4@8 MATH course(s)		
MATH 498	Independent Study	
MATH 535	Statistical Methods 1	
MATH 536	Statistical Methods 2	
MATH 566	Complex Variables	
MATH 577	Problems in Applied Math	

MATH 592	Graph Theory	
Total Hours		47-50

Professional Education

Code	Title	Hours
EDUCATIONAL FOUNDATIONS		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
REQUIRED EDUCATION COURSES		
EDSE 321	Issues in Secondary Education	3
ACCOMMODATIONS AND ADAPTATIONS		
EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3
STUDENT TEACHING		
EDSE 471	Student Teaching Seminar	3
EDMA 461	Student Teaching in Math	9
Total Hours		27

Req Related for Mathematics, BSE

Code	Title	Hours
REQUIRED RELATED COURSES		
CSCI 161	Introduction to Programming 1	4
CSCI 140	Discrete Structures	4
Total Hours		8

Advanced Professional Studies, BSE

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		
APS REQUIREMENTS		
English Composition - Choose 1 of the following:		3
ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	

ENGL 402	Middle Eng Lang and Literature	
Mathematics		

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211	Foundations Modern Education	6
& EDFN 241	and Psychological Foundations of Teaching	

48 earned (transcript) credit hours are required

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training.

Pre-Service Testing Required

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours	12
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Mathematics, B.S.Ed. - Actuarial Science Option

The Actuarial Science option will prepare you to combine mathematics and statistics to assess risk in insurance, finance, and other industries. Students successfully completing the option will be prepared to take the first two examinations administered by the Society of Actuaries.

Mathematics, B.S.Ed. - Statistics Option

Studying Statistics at Millersville University will prepare students to develop and apply mathematical and statistical theory and methods to collect, organize, interpret, and summarize numerical data. Students who complete the Statistics Option find that it prepares them well for graduate school or careers in agriculture, business, education, government, industry, social or applied sciences.

Statistics Minor

A minor in Statistics focuses on the quantitative aspects of research and includes Calculus and Statistics courses. This minor can be beneficial for agriculture, business, education, sciences, and sports management. Students may apply this knowledge in industry and government. The Statistics minor may complement one's primary major.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.
2. Only one course which counts toward your major may be counted toward your minor.
3. Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
4. At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
5. No course needed for the minor may be taken Pass-Fail.
6. One-half or more of the work required for the minor must be completed at Millersville University.
7. No student may minor in his or her major.

Minor in Statistics

Code	Title	Hours
Calculus I or Honors Calculus I - Choose 1 of the following:		4-5
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	
MATH 211	Calculus 2	4
MATH 311	Calculus 3	4
STATISTICS CHOICE - Choose 1 of the following options 1-2:		4-6
Option 1. Probability and Statistics		
MATH 333	Probability and Statistics	
Option 2. Mathematical Statistics I and II		
MATH 335	Mathematical Statistics 1	
MATH 435	Mathematical Statistics 2	
MATH 535	Statistical Methods 1	3
Topics in Statistics or Statistical Methods II - Choose 1 of the following:		3

MATH 438	Topics in Statistics	
MATH 536	Statistical Methods 2	
MATH 537	Statistical Problem Solving Seminar	1
Total Hours		23-26

Physics

The Department of Physics offers several programs leading to the baccalaureate degree with a major in physics. The course structure recommended by the department is essentially identical during the first two years of all programs so that a revision in a student's plan need not involve any loss of time.

The Bachelor of Science degree in physics involves the greatest depth in physics and mathematics. This program prepares the student for employment in a technical position upon graduation and also provides a solid foundation for entrance into a graduate program in physics or other technical field.

In addition to the 3/2 arrangement with Penn State, Millersville has three other cooperative programs. One of these is a 4/2 program with Penn State. A student studies for four years at Millersville and earns a B.S. degree in physics. After transferring to Penn State, in two years the student earns a master's degree from the Department of Engineering Science and Mechanics. In practice, it is possible to complete this program in less than two years. Up to six undergraduate credits at the 400 level in physics or mathematics may be transferred as graduate credit towards the master's degree at Penn State. Summer research programs at Penn State are also available and can generate graduate credit in this program. Consequently a student can finish the graduate portion of this program in a year and a half.

The B.S. Ed. program in secondary education prepares students for careers in precollege teaching, providing certification in physics.

The cooperative education program in physics is an optional arrangement whereby students combine practical on-the-job experience with their formal classroom instruction. After the first year, the co-op program is available to all physics majors who satisfy the departmental admission requirements. For more information, see Cooperative Education in the Special Academic Opportunities (p. 338) section.

Outstanding students majoring in physics may pursue departmental honors during their senior year. Participation in the departmental honors program is highly selective and offers students in each of our major programs an opportunity to strengthen their background in physics and to work closely with a faculty mentor on an extended research project. General information on departmental honors is found in the Special Academic Opportunities (p. 338) section of this catalog. Specific requirements for honors in each of our major programs are available from the department chairperson.

Two minor programs are also available for students who do not elect to major in physics. The physics minor offers students an exposure to physics through the intermediate level of our major program. In addition, there is also available an interdisciplinary minor in physics and earth sciences.

The department has prepared a student handbook which provides more detailed information on our programs, faculty and resources. This handbook, as well as additional information on any of the above programs, is available from the physics department

the programs

- Physics Minor (p. 332)
- Physics, B.S. (p. 333)
- Physics, B.S.Ed. (p. 333)

the faculty

Dushkina, Natalia; Professor
College of Science and Technology
B.S., University of Sofia (Bulgaria), 1984; M.S., Ibid., 1984; Ph.D., Bulgarian Academy of Sciences, 1993

Gilani, Tariq; Professor
College of Science and Technology
B.Sc., University of the Punjab (Pakistan), 1986; M.Sc., Ibid., 1989; M.S., Quaid-i-Azam University (Pakistan), 1991; Ph.D., Kyoto University (Japan), 1997

Goksu, Mehmet; Professor
College of Science and Technology
B.S., Istanbul Technical University (Turkey), 1991; Ph.D., Case Western Reserve University, 2002

Hendrick, Sean; Associate Professor
College of Science and Technology
B.A., University of Virginia, 1994; Ph.D., North Carolina State University, 2003

Li, Xin; Associate Professor
College of Science and Technology
B.Sc., Beijing Institute of Tech., 2006; M.S., Ibid., 2008, M.S., Mississippi State University, 2008; M.S., Ibid., 2011; Ph.D., Ibid., 2010

Uy, Zenaida; Professor
College of Science and Technology
B.S., University of the Philippines, 1964; M.A., State University of New York at Stony Brook, 1969; Ph.D., Ibid., 1972

the courses

PHYS 101: 3 s.h.

Survey of Physics (G2)

An elementary treatment of fundamental concepts of classical and modern physics. Selected examples from classical mechanics, electromagnetism, thermodynamics, relativity and quantum mechanics. The solving of numerical problems is de-emphasized. 3 hr. lec. and discussion. No credit in block G2 for majors in the School of Science and Mathematics. Credit will be granted for only one of the courses: PHYS 101, 103 or 104. Offered in spring. Prereq: MATH placement at the 100 level or above.

PHYS 103: 4 s.h.

Elements of Physics (G2)

An elementary treatment of fundamental concepts of classical and modern physics. Selected examples from classical mechanics, electromagnetism, thermodynamics, relativity and quantum mechanics. The solving of numerical problems is de-emphasized. 3 hrs. lec., 2 hrs. lab. No credit in block G2 for majors in the following departments: Biology, Chemistry, Computer Science, Earth Science, Math or Physics. Credit will be granted for only one of the courses: PHYS 101, 103 or 104. Offered in fall, periodically in spring.

PHYS 103H: 4 s.h.

Hrs:Introduction to Physics (G2)

PHYS 104: 4 s.h.

Applied Physics (G2)

A study of the application of mathematics to practical problems in physics, using Newtonian ideas, and emphasizing applications to devices such as machines and engines, and systems such as electrical circuits. 3 hrs. lec., 2 hrs. lab. No credit in block G2 for majors in the School of Science and Mathematics. Credit will be granted for only one of the courses: PHYS 101, 103 or 104. Offered in spring. Prereq: math placement at the 100 level or above.

PHYS 117: 3 s.h.

General Astronomy (G2)

Astronomy for a general audience; emphasis on the physical nature of the universe. Terrestrial astronomy, light, telescopes, spectra, stars, stellar evolution, galaxies, cosmology, the solar system. 3 hrs. lec. and discussion. No credit in block G2 for majors in the School of Science and Mathematics. Offered in fall, spring.

PHYS 131: 4 s.h.

Physics 1 with Algebra (G2)

An introductory algebra-based course. Fundamental laws and properties of matter, mechanics and heat. Problems dealing with these laws. 3 hrs. lec., 1 hr. recitation and 2 hrs. lab. Prereq: MATH 101 or MPT score sufficient for the student to enroll in MATH courses above MATH 110. Offered fall, summer.

PHYS 132: 4 s.h.

Physics 2 with Algebra (G2)

Continuation of Physics 131. Fundamental laws and properties of electricity, magnetism, waves, sound, light and radiation. 3 hrs. lec., 1 hr. recitation and 2 hrs. lab. Offered spring, summer. Prereq: PHYS 131 or 231.

PHYS 179: 3,4 s.h.

Experimental

Experimental

PHYS 198: 1 s.h.

Seminar In Physics

An overview of the history, practice, philosophy and unity of physics and its application to other disciplines, orienting beginning physics majors to the study of physics. Mandatory for, and only open to, physics majors in their freshman year. 1 hr. discussion. Offered in fall.

PHYS 205: 3 s.h.

Musical Acoustics (G2)

Intended for musicians dealing with the physical nature of sound and sound sources, and the relation of these to music and musical instruments. The use of mathematics is kept to a minimum. 2 hrs. lec., recitation, 2 hrs. lab. Offered in spring. Prereq: MUSI 112.

PHYS 230H: 1 s.h.

Hrs:General Physics Seminar (G2)

The ideas of introductory physics in extended depth, in the language of calculus, using problems, laboratory exercises, readings and discussion. Grades of B- or higher in both PHYS 231 and PHYS 230H will result in honors designation for the pair. The pair of courses counts as one entry in the science component of the curriculum record form and results in six hours of general education credit. Coreq: Concurrent registration in PHYS 231 required and either good standing in the Honors College or a 3.35 GPA or permission of instructor.

PHYS 231: 5 s.h.**Physics 1 with Calculus (G2)**

An introductory course in classical physics dealing with mechanics, fluids, waves and thermodynamics. 3 hrs. lec., 1 hr. recitation, one 3-hr. lab. Offered in fall, spring, summer. Prereq: C- or higher in MATH 161.

PHYS 232: 5 s.h.**Physics 2 with Calculus (G2)**

Continuation of PHYS 231. An introductory course in classical physics dealing with electricity, magnetism and optics. 3 hrs. lec., 1 hr. recitation, one 3-hr. lab. Offered in fall, spring, summer. Prereq: C- or higher in PHYS 231. Coreq: MATH 211.

PHYS 233: 3 s.h.**Wave-Particle Theory**

Selected topics from the areas of waves and optics, special relativity, an introduction to the concepts and development of modern physics and single-particle quantum mechanics. 3 hrs. lec. Offered in spring. Prereq: C- or higher in PHYS 232. Coreq: MATH 311.

PHYS 266: 3 s.h.**Electronics**

The fundamentals of analog devices and their application to electronic circuits. Operational amplifiers, power supplies, semi-conductor devices, oscillators, and an introduction to integrated circuits. One 4-hour Lecture and Lab per week. Prereq: PHYS 132 or 232. Coreq: MATH 161. Offered in spring.

PHYS 279: 1-3 s.h.**Experimental**

Experimental

PHYS 279H: 1-3 s.h.**Experimental Honors**

Experimental Course for Honors Credit

PHYS 300: 3-12 s.h.**Co-Op Ed Experience in Physics**

Co-Op Ed Experience in Physics

PHYS 302: 3 s.h.**Physics and Evolution of Western Civilization (P)**

The history of the mechanization of the world picture. A study of physics in the evolution of Western civilization and thought relating the impact of the Newtonian revolution on technology, society and thought. 3 hrs. lec. and discussion. Offered periodically. Prereq: a physical science course, COMM 100, ENGL 110 and junior status.

PHYS 302H: 3 s.h.**H:Phys and Evol of West Civ (P)**

H:Phys and Evol of West Civ

PHYS 311: 3 s.h.**Mechanics 1**

Lectures, problems and demonstrations developing the fundamental principles and concepts of classical mechanics, including Newton's laws of motion in three dimensions, conservation laws, linear and nonlinear oscillating systems, gravitation and central force problems. 3 hrs. lec. Offered in fall. Prereq: C- or higher in PHYS 232. Coreq: MATH 365.

PHYS 312: 3 s.h.**Mechanics 2**

A continuation of PHYS 311. Includes classical analysis of rigid body motion, noninertial frames of reference, Lagrangian and Hamiltonian dynamics, systems of coupled oscillators, plus special topics. 3 hrs. lec. Offered in spring. Prereq: PHYS 311.

PHYS 317: 3 s.h.**Introduction to Astronomy**

An overview of astronomy and astrophysics for students majoring in the sciences or mathematics, emphasizing selected areas such as terrestrial astronomy, celestial mechanics, stellar evolution, cosmology and the solar system. 3 hrs. lec. Offered in fall of odd years. Prereq: a year of collegelevel physics and calculus.

PHYS 321: 3 s.h.**Electromagnetic Fields 1**

Electrostatic and magnetic fields in vacuum and in dielectric and magnetic materials. Maxwell's equations are developed. 3 hrs. lec. Prereq: PHYS 232. Coreq: MATH 365.

PHYS 322: 3 s.h.**Electromagnetic Fields 2**

Consequences of Maxwell's equations. Solutions to Laplace's equation, electromagnetic radiation and relativistic electrodynamics are discussed. 3 hrs. lec. Offered in fall. Prereq: PHYS 321. Coreq: PHYS 335.

PHYS 331: 2 s.h.**Fundamentals of Optics**

Lab-based course in physical optics, including applications of geometrical optics such as image formation by mirrors and lenses, microscopy, reflection, refraction, and basic phenomena in wave and quantum optics such as interference, diffraction, color mixing and filtration, polarization, birefringence, absorption, dispersion, scattering, laser properties and laser application. 1 hr. lec., 3 hrs. lab. Offered in fall. Prereq: PHYS 232 or PHYS 132 and MATH 211.

PHYS 334: 3 s.h.**Macroscopic Physics**

Lectures, problems and demonstrations which develop the basic ideas of classical continuum physics and the macroscopic behavior of solids, liquids and gases, including an introduction to fluid dynamics, stress-strain relationships in solids, electric and magnetic properties of materials, phase transitions, superconductivity and the classical laws of thermodynamics. 3 hrs. lec. and discussion. Offered in spring. Prereq: C- or higher in PHYS 232. Coreq: MATH 311.

PHYS 335: 3 s.h.**Quantum Systems**

Multi-electron atoms, statistical mechanics of classical and quantum systems and introduction to nuclear physics. Principles are applied to selected examples. 3 hrs. lec. Offered in fall. Prereq: PHYS 233, 334.

PHYS 345: 3 s.h.**Symbolic Computational Methods**

Symbolic computational methods involving procedural, functional, rule-based programming and pattern matching using the graphical and numerical capabilities of Mathematica or other integrated mathematical software systems, with applications to a broad range of computationally challenging problems in physics. Offered in fall of odd years. Prereq: PHYS 233. Coreq: PHYS 311 and MATH 365.

PHYS 351: 1 s.h.**Intermediate Physics Lab 1**

Selected Experiments in classical and modern physics introducing a variety of experimental techniques. 3 hours lab. Prereq: PHYS 232 and either PHYS 266 or CSCI 370. Offered in fall.

PHYS 351H: 1 s.h.**H:Intermediate Physics Lab 1****PHYS 352: 1 s.h.****Intermediate Physics Lab 2**

Continuation of PHYS 351. 3 hrs. lab. Offered in spring. Prereq: PHYS 351.

PHYS 360: 4 s.h.**Circuit Analysis**

Mathematical analysis of linear circuits in the complex domain. Differential equations, operators, transfer functions, Laplace transforms and computer simulation with SPICE. 4 hrs. lec. Offered infrequently. Prereq: PHYS 266 and MATH 365.

PHYS 365: 3 s.h.**Digital Electronics**

Introduction to digital electronics and microprocessors. Design and analysis of combinatorial and sequential digital circuits, microcomputer interfacing and assembly programming. Two 3-hr. labs. Offered infrequently. Prereq: CSCI 140 or permission of instructor.

PHYS 366: 3 s.h.**Analog Electronic Circuits**

Continuation of PHYS 266. Analysis and design of microelectronic circuits. Analytical treatment of discrete and integrated analog and digital circuits. 3 hrs. lec. Offered infrequently. Prereq: PHYS 266, 360 or permission of instructor.

PHYS 379: 3 s.h.**Experimental**

Experimental

PHYS 395: 3 s.h.**Techniques of Mathematical Physics**

Treatment of advanced mathematical techniques such as complex analysis, matrices, Fourier series, calculus of variations, special functions and integral transforms applied to selected areas of physics. Offered in spring. Prereq: PHYS 233, MATH 365.

PHYS 395H: 3 s.h.**Hon: Techniques/Mathm Physics****PHYS 400: 3-12 s.h.****Co-Op Ed Experience in Physics**

Co-Op Ed Experience in Physics

PHYS 431: 3 s.h.**Solid State Physics**

Classical and quantum analyses of solid matter. Topics include crystal structure, the reciprocal lattice and X-ray diffraction; mechanical properties phonons; semiclassical analysis of electrical and magnetic properties of insulators and metals; electron band theory of metals, insulators and semiconductors. 3 hrs. lec. Offered in spring of odd years. Prereq: PHYS 335.

PHYS 435: 3 s.h.**Statistical Mechanics**

Lectures, problems, and computer simulations developing the fundamental principles of classical and quantum statistical mechanics. Subjects include probability theory, the foundations of ensemble development, and their application to classical, Fermi, and Bose systems. Of special interest is the phenomenology of phase transitions and the modern development of the renormalization group. Prereq: PHYS 334.

PHYS 451: 1 s.h.**Advanced Physics Lab 1**

Selected experiments in classical and modern physics, with opportunities to apply sophisticated techniques to extended experimental problems. Prereq: PHYS 352.

PHYS 452: 1 s.h.**Advanced Physics Lab 2**

Continuation of PHYS 451. 3 hrs. lab. Offered in spring. Prereq: PHYS 451.

PHYS 462: 3 s.h.**Advanced Electronics**

Microprocessor applications and interfacing, real-time programming. Topics are selected from computer design, control loops, phase-locked loops and communications. Two 3-hr. labs. Offered infrequently. Prereq: PHYS 266, 365 or permission of instructor.

PHYS 471: 3 s.h.**Quantum Mechanics**

An introduction to formal quantum theory in terms of operators in Hilbert space and Dirac notations which will be used in finding the solutions of eigenvalue problems of several potentials, addition of angular momenta, dynamics of spin 1/2 particle, and introduction to perturbation theory. Prereq: PHYS 233, MATH 322, and MATH 365 or permission of instructor. Offered fall of even year.

PHYS 479: 3 s.h.**Experimental**

Experimental

PHYS 489: 1-4 s.h.**Honors Course**

Honors Course

PHYS 492: 1,2 s.h.**Physics Research and Seminar**

The first semester of an independent research experience supervised by a faculty mentor. Attendance at weekly seminars is also required. Offered in fall. Prereq: PHYS 335 and 351.

PHYS 495: 1-3 s.h.**Topics in PHYS**

Selected topics chosen from the areas across physics including astronomy and astrophysics, classical physics, theoretical physics, applied physics, and modern physics. Permission of instructor. Offered infrequently.

PHYS 495H: 1-3 s.h.**H: Quantum Mechanics 2****PHYS 498: 1-4 s.h.****Independent Study/Research**

An independent research experience supervised by a faculty mentor. Attendance at the weekly seminars associated with PHYS 492 is also required. Prereq: PHYS 492 or permission of instructor. Offered in fall, spring.

PHYS 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

PHYS 500: 3-12 s.h.**Co-Op Ed Experience in Physics**

Co-Op Ed Experience in Physics

Physics Minor

A minor in physics is a great option for students in any STEM field that is interested a deeper understanding of the physical principles that form the basis of chemistry, biology, astronomy, and earth sciences. It is also a good choice for students interested in pursuing advanced degrees in any of those fields.

Regulations Governing Minor Course Work

1. There shall be a minimum of 18.0 credit hours with a minimum Millersville QPA of 2.0.

- Only one course which counts toward your major may be counted toward your minor.
- Courses that count toward a minor are also eligible to be used to satisfy the current University-wide General Education requirements subject to normal distribution requirements.
- At least two courses should be at the upper-division level (300-400). Exceptions may be requested upon evidence of program depth.
- No course needed for the minor may be taken Pass-Fail.
- One-half or more of the work required for the minor must be completed at Millersville University.
- No student may minor in his or her major.

Minor in Physics

Code	Title	Hours
Completion of the Calculus sequence (MATH 161, 211, 311) is a prerequisite for the minor in Physics.		
PHYS 231	Physics 1 with Calculus	5
PHYS 232	Physics 2 with Calculus	5
PHYS 233	Wave-Particle Theory	3
PHYS 334	Macroscopic Physics	3
Physics Elective Course - Choose 1 of the following:		2-3
PHYS 311	Mechanics 1	
PHYS 317	Introduction to Astronomy	
PHYS 321	Electromagnetic Fields 1	
PHYS 331	Fundamentals of Optics	
PHYS 395	Techniques of Mathematical Physics	
PHYS 431	Solid State Physics	
PHYS 435	Statistical Mechanics	
PHYS 471	Quantum Mechanics	
Total Hours		18-19

Physics, B.S.

The B.S. (Bachelor of Science) degree in physics demands the most intense concentration of physics and mathematics. Most Physics majors also complete a Minor in Mathematics. Upper-level Physics courses include Electromagnetic Fields, Mechanics, Thermodynamics, Electronics, and Quantum Physics. Students balance lecture courses with extensive laboratory courses that lead to our capstone experience of a two-semester Senior Research project which often results in presentations of their work at local, regional, and national conferences.

Students graduating with the B.S. in Physics go on to graduate school in physics, engineering, and other related fields, while many go directly into the technical workplace."

Physics, B.S.Ed.

This program is for students who wish to become certified public-school teachers for grades 7-12. The course requirements in Physics and Education are designed to meet the standards set by the Pennsylvania Department of Education for teachers.

Major in Physics, BSE

Code	Title	Hours
Credits Required for Major		

true
Minimum Residency 50% of Major Courses
true
Minimum GPA 2.0 for Major
true

REQUIRED PHYSICS COURSES

PHYS 231	Physics 1 with Calculus (C- or better)	5
PHYS 232	Physics 2 with Calculus (C- or better)	5
PHYS 233	Wave-Particle Theory	3
PHYS 266	Electronics	3
PHYS 311	Mechanics 1	3
PHYS 321	Electromagnetic Fields 1	3
PHYS 334	Macroscopic Physics	3
PHYS 351	Intermediate Physics Lab 1	1
PHYS 352	Intermediate Physics Lab 2	1
PHYS 492	Physics Research and Seminar	2
PHYS 498	Independent Study/Research	4

PHYSICS REQUIRED ELECTIVE

Meteorology or Intro to Astronomy - Choose 1 of the following:		3-4
ESCI 241	Meteorology	
PHYS 317	Introduction to Astronomy	

Total Hours 36-37

Professional Education

Code	Title	Hours
EDUCATIONAL FOUNDATIONS		
EDFN 211	Foundations Modern Education	3
EDFN 241	Psychological Foundations of Teaching	3
REQUIRED EDUCATION COURSES		
EDSE 321	Issues in Secondary Education	3
EDFN 330	Instructional Technology, Design & Assessment	3
EDSE 435	Teaching of Science in Secondary Schools	3
ACCOMMODATIONS AND ADAPTATIONS		
EDSE 340	Content Area Literacy for Diverse Classrooms	3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	3
STUDENT TEACHING		
EDSE 471	Student Teaching Seminar	3
EDSC 461	Student Teaching in Science	9
Total Hours		33

Req Related for Physics, BSE

Code	Title	Hours
CHEMISTRY AND COMPUTER SCIENCE		
CHEM 111	Introductory Chemistry 1	4
Introductory Chemistry II or Intro to Prog Data Science - Choose 1 of the following:		4
CHEM 112	Introductory Chemistry 2	

CSCI 151	Intro to Programming for Data Science I	
MATHEMATICS		
Calculus I(C- minimum) or Calculus Honors - Choose 1 of the following:		4-5
MATH 161	Calculus 1	
MATH 163H	Honors Calculus 1	
MATH 211	Calculus 2 (C- minimum)	4
MATH 311	Calculus 3	4
MATH 365	Ordinary Differential Equation	3
Total Hours		23-24

Advanced Professional Studies, BSE

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		
APS REQUIREMENTS		
English Composition - Choose 1 of the following:		3
ENGL 110	English Composition	
ENGL 110H	Hnrs:English Composition	
English Literature - Choose 1 of the following:		3
ENGL 230	Introduction to Literature	
ENGL 231	World Literature 1	
ENGL 232	World Literature 2	
ENGL 233	Early British Literature	
ENGL 234	Later British Literature	
ENGL 235	American Literary Tradition I	
ENGL 236	American Literary Tradition II	
ENGL 241H	H:Explorations in World Lit	
ENGL 242	Reading Our World:	
ENGL 292	Science Fiction	
ENGL 333	African-American Literature 1	
ENGL 333H	Hnrs:African American Lit 1	
ENGL 334	African American Literature 2	
ENGL 334H	Hnrs:African American Lit 2	
ENGL 336	New Dimensions to World Lit	
ENGL 338	Folklore and Literature	
ENGL 401	Old Eng Lang and Literature	
ENGL 402	Middle Eng Lang and Literature	

Mathematics

Two Mathematics courses are required for BSE students. You have taken 0 course(s). It is preferable to take two courses designated as G2. Click here to search for MATH courses on the current web schedule. BIOL 375 will fulfill one Mathematics course for BSE BIOL students.

EDFN 211 & EDFN 241	Foundations Modern Education and Psychological Foundations of Teaching	6
48 earned (transcript) credit hours are required		
APS registration status		
You ARE NOT eligible to register for courses requiring APS status.		
ACT 126 - Educator Ethics Training		
You must submit your Educator Ethics Training.		
Pre-Service Testing Required		

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Pre-Service Testing Status is indicated by one of the following: 1.) PSTA - Pre-Service Testing Accomplished: Verified passing pre-service test scores meet the requirement. 2.) PSTI - Pre-Service Testing Incomplete: Non-passing pre-service test scores were submitted prior to the August 1, 2015 policy change. Passing scores must still be achieved in order to meet the PA certification requirements. 3.) PSTU - Pre-Service Testing Unverified: Unofficial copies of pre-service test scores were submitted. Official scores must be sent from the testing company in order to meet PA certification requirements. 4.) PSTX - Pre-Service Testing Waived: Per PDE - ACT 136, the Pre-Service Testing Requirement has been waived.

Your GPA is below 3.0 - please see an advisor

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

Full Admission to APS

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours	12
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Wehrheim School of Nursing

The Wehrheim School of Nursing offers an accredited upper-division program in nursing leading to a Bachelor of Science in Nursing (B.S.N.) degree. This program is designed for registered nurses who are graduates of accredited diploma or associate-degree nursing programs with a GPA of 2.0.

The goals of the nursing program are to provide an atmosphere and opportunities that develop intellectual curiosity, critical thinking, and sound reasoning and judgment; provide knowledge from the humanities and the physical, biological, psychological and social sciences to complement nursing theory and practice; provide a theoretical and clinical foundation in nursing to prepare a professional nurse who provides rational evidence-based and humanistic healthcare within institutional and community settings; and provide a basis for graduate education in nursing.

Online courses are offered on a rotating basis to accommodate student scheduling.

The Millersville University RN-BSN, MSN, post-MSN FNP certificate, and DNP programs are accredited by the National League for Nursing Commission for Nursing Education Accreditation (NLN CNEA) located at 2600 Virginia Avenue, NW, Washington, DC 20037. 202-909-2487.

the programs

- Certificate in Population Health (p. 337)
- Certificate in Telehealth (p. 337)
- Nursing, B.S.N. (p. 337)

the faculty

Chronister, Michele; Assistant Professor

College of Science and Technology

B.S., University of Pittsburgh, 1993; M.N., Millersville University, 2014

Hartmann, Teresa; Assistant Professor

College of Science and Technology

B.S.N., Millersville University, 1987; M.S.N., Widener University, 1992; Ph.D., Ibid., 2016

Kuhns, Kelly; Professor

College of Science and Technology

B.S.N., Lycoming College, 1994; M.S.N., Villanova University, 2000; Ph.D., Ibid., 2011

Lambert, Dawn; Associate Professor

College of Science and Technology

B.S.N., Millersville University, 1994; M.S.N., West Chester University, 2008; Ph.D., Capella University, 2015

Lee, Linda; Assistant Professor

College of Science and Technology

B.S., East Stroudsburg University, 1982; M.S., University of Delaware, 1989

Matincheck, Tracee; Instructor

College of Science and Technology

A.A., Harrisburg Area Community College, 2002; B.S.N., Pennsylvania State University, 2007; M.S.N., Millersville University, 2016

Minter, Cayleigh; Assistant Professor

College of Science and Technology

B.S.N., York College of Pennsylvania, 2008; M.S.N., Millersville University, 2014

Monn, Jenny; Associate Professor

College of Science and Technology

B.S., The Pennsylvania State University, 1987; R.N., St. Joseph Hospital School of Nursing, 1995; B.S.N., Millersville University, 2003; M.S.N., Ibid., 2007; D.N.P., York College of Pennsylvania, 2015

Moyer, Susan; Assistant Professor

College of Science and Technology

B.S.N., Bloomsburg University, 2001; M.S.N. Villanova University, 2007; Ph.D., Ibid., 2019

Rotondo, Kelly; Assistant Professor

College of Science and Technology

B.S.N., LaRoche College, 2002; M.S.N., Waynesburg College, 2004; D.N.P., Waynesburg University, 2009

the courses

NURS 179: 3 s.h.

Experimental

Experimental

NURS 279: 3 s.h.

Experimental

Experimental

NURS 300: 3-12 s.h.

Co-Op Ed Experience in Nursing

Co-op Experience in Nursing

NURS 310: 3 s.h.

Health Issues from a Population Health Perspective

The essentials of population health practices will be discussed along with how they are used by different groups to assess health outcomes and make recommendations to improve access to care and quality of care while reducing the cost of care.

NURS 312: 3 s.h.

Value-Based Care

The healthcare industry is shifting to value-based and risk-based reimbursement and it is a monumental change that is impacting every component of healthcare. Healthcare is focused on high-value, cost-effective, and evidence-based measures that incorporate innovation, resource stewardship, and systems thinking. Under new payment models, reimbursement is tied directly to clinical, organizational, and consumer outcomes. It is, therefore, critical that all involved in healthcare are aware and can apply the principles associated with value-based care to their respective roles.

NURS 315: 3 s.h.

Scientific Advances in Healthcare (P)

Major contemporary health trends and issues will be presented. Discussion will identify the integration of certain biological, psychosocial, educational and healthcare components as they impact on the individual/family unit. Open to all majors. Prereq: ENGL 110, COMM 100 and junior status. Does not satisfy nursing electives for B.S.N. majors.

NURS 315H: 3 s.h.

Hon: Scientific Adv Health Car (P)

NURS 316: 3 s.h.

Women, Health, and Health Care (P)

Examines the physical, psychosocial, economic, cultural, ethnic, racial and political factors that impact women's health. Case studies of current health dilemmas that affect women in today's society will be analyzed. Prereq: ENGL 110, COMM 100 and junior status. Does not satisfy nursing electives for B.S.N. majors.

NURS 316H: 3 s.h.

H: Women, Health, and Health C (P)

NURS 320: 3 s.h.

Basis of Professional Practice

Historical and theoretical aspects of nursing are discussed in addition to concepts and issues related to professional nursing practice. Emphasis on communication, standards, collaboration, and advocacy. 3 hrs. lec. Nursing majors only. Offered annually.

NURS 322: 4 s.h.**Health Assessment of Adult**

The holistic assessment process of the adult client utilizing physical assessment skills such as the techniques of inspection, palpation, percussion and auscultation are presented and practiced. Each system includes the normal finding and the pathophysiological mechanisms that alter hemodynamics. 3 hrs. lec., 2 hrs. lab. Nursing majors only.

NURS 330: 3 s.h.**Ethics and Person-Centered Care (D)**

Focuses on the interplay of ethical practice and diverse populations in healthcare. Emphasis on the use of ethical theories, principles, and frameworks to strengthen moral reasoning and improve the provision of socially responsible, person-centered healthcare to diverse populations. Models of ethical decision-making are explored and applied. Role of the ANA Code of Ethics within the profession is examined. Encourages a greater awareness of cultural differences and health disparities and the importance of social justice and mutual respect in care delivery.

NURS 340: 3 s.h.**Environmental Factors Affecting Health**

Discussion of environmental health and factors that influence the holistic person's health. Emphasis on the importance of environmental health assessment and the health effects of air, water and soil pollution; environmental safety hazards and nursing responsibilities for intervention in a personal, community and political realm. Effects of pollution and safety hazards discussed from a nursing perspective.

NURS 360: 4 s.h.**Assessment and Diversity in Nursing Practice (D)**

Integration of physical assessment has a positive effect on patient care delivery. An important component of health assessment of the diverse client is a contextual (cultural) review. Cultural assessment is crucial to providing cultural care, which enables providers to deliver services that are respectful of and responsive to the health beliefs, practices and cultural and linguistic needs of diverse patients. Cultural competency is critical to reducing health disparities and is responsive to the needs of diverse patients resulting in improved patient outcomes.

NURS 370: 3 s.h.**Telehealth Foundations**

An introduction to telehealth theory, clinical usage, historical perspectives, and future strategies that provide clinicians, healthcare team members, administrators, and community members a broad-based overview of the use of technology in healthcare.

NURS 379: 3 s.h.**Experimental**

Experimental

NURS 421: 5 s.h.**Population-based Nursing (W)**

The nurse's role in promotion of health of aggregates in the community is explored, with an emphasis on vulnerable populations. Public health concepts, using a population-based focus are directed toward health promotion and levels of prevention with evidence-based care to create healthier communities and populations.

NURS 428: 3 s.h.**Nursing Research & Evidence-Based Practice (W)**

Explores the research process used to generate evidence and the process of evidenced-based practice (EBP), which incorporates the available evidence to implement strategies that improve nursing practice. Students will follow the steps of the EBP process to synthesize the best available evidence related to a nursing problem within an area of professional practice. Prerequisite: MATH 130 or MATH 234, ENGL 110, and Senior Level.

NURS 435: 1-3 s.h.**Topics in Nursing**

In-depth investigation of topics of current interest in the nursing field. Topics to be announced when course is offered. Offered periodically.

NURS 438: 3 s.h.**Health Policy and Nursing Issues**

Discussion of the political, economic, legal, ethical and related societal issues which influence nursing practice and education. Professional nursing roles and responsibilities are emphasized. 3 hrs. lec. Nursing majors only.

NURS 460: 3 s.h.**Telehealth Policy, Advocacy, and Clinical Application**

This course will review the roles of policy, advocacy, and clinical application of telehealth. Using spirit of inquiry principles, the impact of virtual care, artificial intelligence, and remote patient monitoring on patient care, quality and safety and process improvement will be investigated. Prereq: NURS 370

NURS 461: 4 s.h.**Advanced Telehealth**

This advanced telehealth course will develop telehealth project management skills and clinical presence using technology as a methodology of providing healthcare in a variety of settings across the continuum. Prereq: NURS 370 and 460.

NURS 478: 4 s.h.**Transforming Health Care (W)**

This senior-level capstone course builds and expands upon work completed to date in the B.S.N. program and is designed to prepare students for leadership roles. Concepts of leadership and management will be described and ultimately applied to seminar topics and clinical experiences. Emphasis is also placed on the interdependence between the nursing profession and various levels of issues as they pertain to real-life world events. Seminar topics include fiscal management, case management and public-policy issues, among others. Clinical experiences will allow the student to practice with a nurse leader in the community. Prereq: ENGL 110, NURS 320, 428. 28 clinical hours total.

NURS 479: 3 s.h.**Experimental**

Experimental

NURS 489: 1-4 s.h.**Honors Course**

Honors Course

NURS 498: 1-3 s.h.**Independent Study**

An individualized experience based on the student's particular interests. Provides an opportunity to demonstrate creativity and initiative to further investigate an area of interest in practice, research or education in nursing. Offered periodically. Prereq: NURS 428.

NURS 499: 1-4 s.h.
Departmental Honors
 Departmental Honors

Certificate in Population Health

The certificate in population health is for anyone working in or with an interest in working the healthcare system. This certificate includes two required courses (NURS 310 Health Issues from a Population Health Perspective and NURS 312 Value-Based Care) and another 12 credits of multidisciplinary courses individually designed to meet the student's unique learning needs.

Major in Population Health

Code	Title	Hours
REQUIRED NURSING COURSES		
NURS 310	Health Issues from a Population Health Perspective	3
NURS 312	Value-Based Care	3
POPULATION HEALTH ELECTIVES		
Elective Courses - Choose 12 hours from:		12
NURS 315	Scientific Advances in Healthcare	
NURS 330	Ethics and Person-Centered Care	
NURS 340	Environmental Factors Affecting Health	
NURS 428	Nursing Research & Evidence-Based Practice	
SOCY 317	Medical Sociology	
SOCY 329	Topics in Sociology (Topics: Mental Health)	
SOWK 102	Modern Social Welfare Dilemmas	
SOWK 307	Social Work and Health Care	
MATH 234	Statistics for Health Sciences	
INTE 255	Intro to Data Analytics	
Total Hours		18

Certificate in Telehealth

Wehrheim School of Nursing Telehealth certificate is 100% online and open to all majors and guest students!

There is a growing demand for telehealth as a modality to improve patient outcomes in professions such as social work, nursing, counseling, providers, pharmacy, physical therapy, occupational therapy, and respiratory therapy, and more!

Remote healthcare has exploded since the start of the pandemic in 2020. The expansion of telehealth and other remote healthcare options is only expected to increase in the future years and become a "normal" part of healthcare delivery, enabling specialists and providers to reach patients in remote areas and eliminating barriers to receive safe, efficient healthcare.

Major in Telehealth

Code	Title	Hours
NURS 370	Telehealth Foundations	3
NURS 460	Telehealth Policy, Advocacy, and Clinical Application	3
NURS 461	Advanced Telehealth	4
Total Hours		10

- 100% Online
- 3 Courses (10 credits)
- Learn to facilitate healthcare via telehealth/telephonic/telemedicine/ virtual and remote care

The online telehealth certificate allows students to:

- Identify the history of telehealth and the impact it has on future strategies
- Understand how to use telehealth effectively to engage in quality interactions
- Learn the principles of telehealth and the project management skills necessary to implement virtual programs in a variety of settings

Some organizations have seen a 3,000% increase in the use of telehealth –expand your employment opportunities now!

Nursing, B.S.N.

The RN to BSN program at Millersville University is designed for those who have obtained their associate degree in nursing or diploma and RN license. This program is offered in a completely online format. The online program allows registered nurses to work toward a Bachelor of Science in Nursing degree at their own pace and while continuing to work as an RN. Faculty advisers provide individualized analysis of your previous credits to ensure the most efficient path to your degree.

The RN to BSN program at Millersville University is accredited by the Accreditation Commission for Education in Nursing (ACEN). Graduates receive a Bachelor of Science in Nursing (BSN) degree.

Designed for the busy, working RN, the RN to BSN program is a fully asynchronous online program. There are 31 credits of required nursing courses focused on the core program outcomes of exploration, professionalism, advocacy and action, embracing diversity, and leadership.

Major in Nursing (BSN)

Code	Title	Hours
If you are interested in pursuing school nurse certification click here to view required undergraduate courses for preparation.		
LOWER DIVISION NURSING CREDITS		30
Upon confirmation of your Associates Degree, 30.0 credits will be awarded.		
Students must earn a minimum grade of C in all nursing courses.		
REQUIRED NURSING COURSES		
Students in the Accelerated BSN to MSN program may elect the 300/400 or 500 level equivalent course. Only the 500-level course will be applicable to the MSN program.		
NURS 320	Basis of Professional Practice	3
NURS 330	Ethics and Person-Centered Care	3
NURS 340	Environmental Factors Affecting Health	3
NURS 360	Assessment and Diversity in Nursing Practice	4
NURS 421	Population-based Nursing	5
NURS 428	Nursing Research & Evidence-Based Practice	3
NURS 438	Health Policy and Nursing Issues	3
NURS 478	Transforming Health Care	4

NURS 504	Technology, Informatics & Professional Nursing Practice	3
Total Hours		61

Req Related for Nursing

Code	Title	Hours
Required Related Credits		
	true	

MATHEMATICS

Elements of Statistics I - Choose 1 of the following:		3-4
MATH 234	Statistics for Health Sciences	
MATH 130	Elements of Statistics 1	

BIOLOGY

BIOL 254	Human Anatomy & Physiology I	4
BIOL 255	Human Anatomy & Physiology II	4
BIOL 361	Microbiology	4

OTHER REQUIRED RELATED

Chemistry, Psychology or Sociology - Choose 1 of the following:		3
CHEM 103	Gen Organic and Biochemistry 1	
CHEM 104	Gen Organic and Biochemistry 2	
PSYC 100	General Psychology	
PSYC 228	Life Span Human Development	
SOCY 101	Introduction to Sociology	

Total Hours		18-19
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Special Academic Opportunities

Honors College And Departmental Honors

Millersville University offers a number of programs to help exceptionally talented students develop their potential. Students who complete the program earn special recognition.

University Honors College

The University Honors College challenges talented students while encouraging them to develop their intellectual potential. The program introduces students to the main currents of world thought and culture, and develops writing, research and analytical skills. Enrollments in honors classes are limited to facilitate student-faculty interaction. Students who successfully complete the program are awarded the University Honors baccalaureate at graduation.

Invitations to the program are extended to entering first year students who have combined SAT scores of 1200 or above and are in the top 10 percent of their high school class. Other interested first year students and currently enrolled students with cumulative grade point averages (CGPAs) of at least 3.35 are encouraged to apply for admission to the director of the University Honors College.

To remain in good standing in the Honors College, students must maintain a GPA of at least 3.20. University Honors College students who achieve a final overall GPA of 3.8 or higher will graduate from the University Honors College "With Distinction."

To receive the University Honors baccalaureate, students must:

1. Earn a cumulative GPA of at least 3.20 and 3.35 in honors coursework.
2. Earn a minimum of 25 honors credits and fulfill the Honors College curricular requirements. Honors credit is awarded only for those honors courses in which a B- or higher is earned.
3. Students must complete and successfully defend an honors thesis.
4. With proper approval, an Honors College student may enroll in up to two courses (maximum of six or eight credits, depending on the major) in their department major and earn honors credit. Only courses at the 200 level or above will be considered appropriate. Students must have already earned a minimum of 12 credit hours with honors designation.

For more information, contact the director of the Honors College, and see the Undergraduate Programs of Study (<https://catalog.millersville.edu/undergraduate/programs-of-study/>) section.

Departmental Honors

This program provides an opportunity for superior and highly motivated students to pursue a specialized area of interest intensively and independently. Upon successful completion of the program, students are recognized for their achievements at graduation with the designation of Departmental Honors on their University record.

To be eligible for the program, students must have a cumulative GPA of at least 3.0 and the endorsement of the department.

The program generally consists of two to four semesters of supervised tutorial work, reading, self-instruction, creative inquiry and research, which culminates in the production of a thesis or project. One to four credits may be earned for each of the departmental honors courses (see specific departments' requirements). Grades in these courses are determined by the faculty supervisor and departmental committee.

Final theses or projects are examined by and orally defended before the departmental committee. Grades of B- or higher must be earned on them. They are then presented to the Honors and Awards Committee for review. Titles of completed works are published in the commencement program. Contact the department office for an application and more information.

Honors Courses

Honors courses offer special academic challenges and opportunities for intellectual inquiry. These courses require a measure of independent reading, thinking and questioning. Students are expected to assume a greater portion of the responsibility for learning. Course requirements include activities to develop writing, research and analytical skills.

Honors courses are open to students in the University Honors College, students with a cumulative GPA of at least 3.35 and other students with permission from the instructor. A grade of B- or higher must be earned to qualify for the honors designation on the student's record.

On-Campus Academic Opportunities

Winter Session

Winter session allows students to complete additional courses between the fall and spring semesters. Courses are open to students from other institutions of higher education as well as Millersville students. Residence halls and dining facilities are closed during winter session. For more information about winter session, call the registrar's office at (717) 871-5005, the CGSAL office at (717) 872-3099, or check the University website.

Independent Study

Independent study allows students to pursue, with faculty supervision and guidance, an academic area of interest not available through an established course. To apply, students must complete a special studies assignment form, available in department offices and in the online Student Forms Center, and obtain approval for the proposed topic and faculty supervisor from the department chairperson and school dean before the start of the term.

Individualized Instruction

Individualized instruction allows students to complete an established course during a semester in which it is not offered. Approval to pursue a course through individualized instruction is granted only under special circumstances. To apply, students must complete a special studies assignment form, available in department offices and in the online Student Forms Center, and obtain approval for the proposed topic and faculty supervisor from the department chairperson and school dean before the start of the term.

Course Scheduling Preference for Veteran Students

Act 46 of 2014 requires public institutions of higher education in Pennsylvania to provide veteran students, as defined in the Act, with preference in course scheduling. Noncompliance may be reported to the Pennsylvania Department of Education by submitting the Higher Education Student Complaint form found at www.education.state.pa.us (<http://www.education.state.pa.us>). In accordance with Act 46 of 2014, Millersville University provides early registration priority for enrolled students identified as veterans who meet the following criteria:

1. Has served in the United States Armed Forces, including a reserve component and National Guard, and was discharged or released from service under conditions other than dishonorable;
2. admitted to Millersville University for the current academic year;
3. reside in Pennsylvania while enrolled.

Students who have identified themselves as being veterans, as defined above, will automatically receive their priority registration date and time in their MAX account. Students who believe they are veterans as defined above and who have not yet identified themselves as such should submit a DD214, Joint Services Transcript (JST) or Community College of the Air Force (CCAF) transcript to the registrar's office, Lyle Hall. The Financial Aid Scholarship and Veterans Coordinator will provide to the registrar's office the names of the students meeting these criteria prior to the posted priority registration date. Students who are given course scheduling priority privileges are permitted to enroll in courses two days prior to the regular scheduling timetable as defined by the office of the registrar. Students with questions concerning course scheduling preference for veterans may contact the following individuals: Ms. Giselle Fernandez (717-871-5100), Scholarship & Veterans Coordinator; the registrar's office (717-871-5005).

Taking Graduate Courses as an Undergraduate

Well-qualified Millersville University undergraduates may enroll in graduate courses for undergraduate or graduate credit. Specific conditions apply to each of these credit alternatives.

Undergraduates may enroll in 500-level graduate courses for undergraduate credit with permission of the instructor and advisor. The credits earned count toward baccalaureate-degree requirements and cannot be converted to graduate credits.

An undergraduate with a 3.0 GPA or higher may enroll in 500- and 600-level graduate courses for graduate credit. The student must have a maximum of 15 semester hours to be completed in the baccalaureate-degree program. Written permission must be acquired from the advisor, the course instructor, the graduate program coordinator and/or chair of the department offering the course, and the dean of graduate studies. The undergraduate will also need to be admitted as a nondegree graduate student.

A maximum of nine graduate credits may be earned by an undergraduate. These credits may not count toward the completion of the student's baccalaureate degree.

Pass-Fail Option and Auditing Courses

The pass-fail option provides students the opportunity to pursue a course without the usual pressure of earning a grade.

Auditing a course allows a student to attend classes and participate in discussions without the pressures of taking examinations, writing papers or fulfilling other requirements generally associated with earning credit. Students must submit requests to take a course on an audit or pass-fail basis by the end of the add period. See the Grades & Policies section for more information.

Developmental Courses

Course numbers beginning with a zero are precollege developmental courses that provide opportunities for students to remediate academic skill weaknesses and develop basic proficiency. Placement in these courses is recommended, and under some circumstances required, following an assessment of the student's basic skills. For more information, see the section on Proficiency Requirements.

A grade of C- or higher is required to demonstrate proficiency in a developmental course. Students who must take a developmental course(s) earn course credit, and the grade is counted in the cumulative grade point average, but developmental course credit cannot be counted towards fulfillment of the general education or graduation requirements for the baccalaureate or associate degree.

Undecided Major Status

Students may seek admission to Millersville without selecting a major. Special academic advisors are assigned to guide undecided students through the general education requirements and assist them in exploring potential majors through the Exploratory Program.

Students who qualify for admission to Millersville, but do not meet admission criteria for a selected major, are classified as undecided until they qualify for study in the major of their choice.

Students with at least 45 credits passed and in undecided status, or changing to undecided status, must either:

1. Declare and be accepted into a major.
2. Complete a review of academic goals as follows: The student, in consultation with an assigned advisor, must propose and have approved by the advisor each semester an academic plan of action that includes a realistic timeline for the completion of degree requirements. The approval form will indicate whether the student is waiting to get into a major and, if so, the reason for nonacceptance into that major. A copy will be filed in the registrar's office.

3. Sign a statement which indicates awareness of the ramifications of remaining in an undecided status but may choose to continue to remain in that status.

Permission to register will be granted only if one of the above requirements is completed.

Off-Campus Academic Opportunities

Graduate and Undergraduate Courses

Credit-bearing courses are scheduled at off-campus sites as a convenience to part-time students and working adult students. Graduate courses are available online, at schools in local school districts and/or at off-campus locations in Lancaster and Harrisburg.

Undergraduate courses are offered each semester at several sites in central Pennsylvania. Students enrolled in off-campus sites are welcome and encouraged to use campus facilities and services. For information about off-campus courses, contact the CGSAL, 717-871-7171.

Noncredit Courses

The Corporate University and Nonprofit Resource Network at Millersville provide customized and training solutions to businesses and community or nonprofit organizations. For information, contact the Corporate University, with offices conveniently located in Millersville and Harrisburg, 717-871-5742, or Corporate.University@millersville.edu, or the Nonprofit Resource Network, 717-871-5742, or nrninfo@millersville.edu.

Study Abroad

Study abroad can be a valuable and important part of a student's undergraduate education. Regardless of a student's major, learning firsthand about another way of life and seeing the world from another culture's perspective are invaluable assets for success in our global society.

Millersville University students may study abroad in nearly every country worldwide for a summer, a semester or an academic year. Although most students who study abroad choose to do so during their junior year, students may study and/or do an internship abroad for University credit any time after completing 24 academic credits. International internships for most majors/minors, student teaching abroad and international social work placements are also available.

Whether fluent in foreign languages or only in English, students may participate in study abroad through Millersville's own international partners, through other accredited U.S. institutions' programs or directly through many international universities. Millersville offers its own study/intern-abroad programs with universities in over 10 countries.

Traditional: Exchange Partners

MU has a direct relationship with several international universities. An exchange program allows a student from Millersville and a student from the host university to trade places for a semester or an academic year.

Traditional: Direct University Partners

MU has a relationship with several international universities that provide a discount for semester and summer options. Students pay directly to the partner in these programs.

Traditional: Affiliated Organizations

Affiliated programs are generally run by a third-party organization or program provider. IPS has a direct relationship with the organization, and in turn, the organization has direct relationships with international

universities. Students participating in these programs take their courses at the Affiliates' partner institutions or centers with other international students and/or locals.

MAPS: Millersville Abroad Programs

These are shorter study abroad programs, typically between 1-3 weeks in length. They are guided experiences led by Millersville staff or faculty, who take a group of students, alumni, or community members abroad. Some programs are for credit, some are credit-optional, and others are not for credit.

Professional: Internships

There are several ways to gain professional "hands-on" experience in another culture, all while boosting your resume! International internships are available to almost all majors and minors. Students may intern abroad for a semester or a summer session.

Professional: Student Teaching

Education majors can complete half of their student teaching placement for certification in an international location. They can also participate in semester or summer placements depending on the school calendar in the host country.

Professional: Social Work

Social Work majors can complete their senior field placements in pre-approved sites.

Professional: Research

Research experiences allow students to conduct independent research, or assist in faculty research abroad. Only Millersville's IRB can give approval to conduct research, however IPS will need to approve your international travel. There are several ways to participate in international research.

MU-Credit: You can conduct research through an independent study/individualized instruction class. You will complete an application to approve the international travel.

Non-Credit: You can conduct independent or guided (with an MU professor) research to use for a future honors thesis, project, Made in Millersville, or other reasons. You would not earn credit. You will register your international travel through a Travel Registry.

Transfer-Credit: You can conduct research at an international university alongside regular academic classes as part of a traditional study abroad program and transfer the credit back to MU.

Domestic and Virtual Programs

Domestic study abroad allows students to study in the U.S. and U.S. territories.

Virtual study abroad allows students to take an online class, and earn credit, through an international university while remaining in the U.S. IPS promotes virtual study abroad programs with an included cultural component. Cultural components may include virtual engagement with local students, cultural gifts, or others.

Travel Registry

A Travel Registry is designed for independent or solo travel by students, faculty, staff, alumni, and community members participating in Millersville University-related travel, or may be traveling individually with an MU faculty or staff member. These are non-credit programs.

Build-Your-Own

If you wish to pursue a study abroad destination beyond the pre-approved program offerings, you may choose to study abroad through another university's programs or study abroad company or combine various program types to create your own experience. These programs must be approved by IPS during Advising.

For more information about study abroad, contact the Office of International Programs and Services, (717) 871-7506, or email international@millersville.edu.

PASSHE Visiting Students

The purpose of the PASSHE Visiting Student program is to facilitate student enrollment at institutions of Pennsylvania's State System of Higher Education and to enable students to take advantage of courses available across the System, without loss of institutional residency, eligibility for honors or athletics, or credits toward graduation at the home institution.

The student must be matriculated at the home university with a minimum of 12 college-level credits and be in good academic standing.

Students may take a maximum of 24 credits via the Visiting Student Policy.

The student who presents evidence of good standing at the home university will be allowed to register for courses at other PASSHE universities. The visiting student priority level for registration will be determined by each university.

All credits and grades accrued at other PASSHE universities shall be accepted in full by the home university and thereafter treated as home university credits, residency and grades.

It is the responsibility of the student to work with the student's advisor at the home institution regarding applicability of credits toward graduation requirements at the home institution consistent with PASSHE procedures, and to complete the Visiting Student Notification Form and submit it to the home institution prior to enrolling in courses at another PASSHE institution.

Students cannot use the Visiting Student Program to repeat courses.

Students cannot use the Visiting Student Program for internship or practica that are required for licensure or certification without the express written permission of their appropriate university officials at the home university, and placement availability at the requested institution.

The student shall register at, and pay tuition and fees to, the State System University visited. A student wishing to divide a course load between two institutions during the same term shall register and pay appropriate tuition and fees at both universities.

The Office of the Chancellor will work with universities to establish and publish procedures to identify visiting students such that financial aid, residency, eligibility for honors, eligibility of athletics and credits to graduation are assured.

The Visiting Student Form is available from the registrar's office.

Study at Other Institutions

Millersville students may take courses at other colleges and universities for transfer back to Millersville. Many students, for example, take summer courses at a college near their home. Students must obtain approval in advance from their advisor, the department chairperson and the registrar. Authorization for Transfer of Credit forms are available in the registrar's

office or on the Millersville website, under Student Forms Center. For more information, see the Transfer Credit section.

Exchange Agreement with Franklin & Marshall College. Through this exchange agreement, full-time Millersville students may, with approval, pursue courses not available at Millersville at Franklin & Marshall College. No tuition is charged by Franklin & Marshall College. This agreement does not include courses offered during the summer or winter at Franklin & Marshall. See the approval form, available in the registrar's office, for additional requirements.

Exchange Agreement with Lancaster Theological Seminary. Through this exchange agreement, full-time Millersville students who qualify for admission to graduate-level courses may, with approval, pursue courses not available at Millersville at Lancaster Theological Seminary. No tuition is charged by the seminary.

3-2 Cooperative Programs in Engineering. Physics-engineering and chemistry-engineering majors are offered in cooperation with Pennsylvania State University. In addition, the physics department has an engineering program with the University of Southern California. These programs require three years of study at Millersville, with a major in physics or chemistry, and two years in residence in the engineering program of one of the cooperating institutions. Interested students should contact the physics or chemistry department chairpersons for further information.

Internships

Internships provide students with the opportunity to gain professional experience in their chosen field before they graduate, and can be a valuable bridge between college and career. Millersville University offers a strong academic internship program that provides structure and awards academic credits. Students complete internships locally, regionally, nationally and internationally, in both paid and unpaid positions, in businesses, government and nonprofit organizations across a wide variety of academic and professional fields. The work experience is part of the total learning experience, which is supervised by a faculty member in the student's major.

Students must have completed 24 credits, have at least a 2.0 GPA and a declared major or minor to be eligible. Individual departments may also establish additional criteria and requirements beyond the University minimum standards. Academic requirements to be completed during the internship include regular meetings with a faculty supervisor and completing an outcome paper. Students typically earn three credits, completing a minimum of 120 hours (for most majors) over the course of a semester.

Internships at Millersville University are administered as an academic program through Experiential Learning and Career Management, located in Bedford House. Our students benefit from the collaboration between the faculty and the internship program staff in preparing, coordinating and supervising students completing an internship.

Specialized internship experiences are available through some academic departments, such as The Harrisburg Internship Semester (THIS). Sponsored by Pennsylvania's State System of Higher Education, this program offers a paid internship with policymakers in the state legislature, executive branch and other governmental agencies. For more information specifically about The Harrisburg Internship Semester, please contact the THIS Campus Coordinator—Millersville University, www.passhe.edu/inside/asa/opportunities/

this (<https://www.passhe.edu/inside/asa/opportunities/this/>) or richard.glenn@millersville.edu.

For more information about internship opportunities and the University's internship program, please contact Experiential Learning and Career Management in Bedford House, or visit the website at www.millersville.edu/elcm (<https://www.millersville.edu/elcm/>).

Early Field Experiences, PDS, Student Teaching and Certification

Undergraduate and graduate teaching experiences, including pre-student teaching (early field experiences) and student teaching internships and student teaching in international and Native American settings, are coordinated through the Department of Field Services.

Early Field Experiences

The University maintains a strong commitment to connecting theory and practice through early field experiences, prior to student teaching, in local school districts and childcare settings. Most early field experiences are integral parts of specific education courses, and students must successfully complete these experiences to be admitted to student teaching. Admission to Advanced Professional Studies is required for many of the courses that contain early field experiences. (Please consult the section on Admission to Advanced Professional Studies (p. 36).) For the early field experiences available in your major, contact your department chairperson. Students need an Act 114 FBI clearance, an Act 34 Criminal clearance and an Act 151 Child Abuse clearance that indicate "No record exists" for eligibility for placement in early field experiences. Students also need a negative TB test. All clearances and a TB test with negative results must be updated yearly and not expire during the early field experience semester. An urban placement experience is a part of the educational program. Additional documents, trainings, personal liability insurance, etc., may be required of some placement settings. Students are responsible for their own transportation during early field experiences.

Traditional Student Teaching (Non-PDS)

After successfully completing the necessary requirements outlined below and the related field experiences, students are assigned to full-time cooperating teachers and to University supervisors in area school districts for a full semester of student teaching. This assignment is made by Millersville University's Department of Field Services, working in conjunction with school district administrators.

Millersville's Professional Development School (PDS) is a full-year internship experience that immerses future teachers in a school setting. The senior-year apprenticeship with a master teacher allows selected teacher education students to shift their focus from simply learning about teaching to implementing their learning in the classroom to make a positive impact.

Throughout the year, Millersville teacher education students work in a nurturing environment with their mentor teachers to transition from students learning about teaching to career-ready teachers prepared to be in the classroom on their own. In their fall semesters, students take several classes where their work focuses on improving their classroom environments. This takes place in regional schools. In their spring semesters, students ideally co-teach the same class from the fall, completing the official student-teaching semester. This seamless integration between the theoretical aspects in the classroom and the practical implementation simultaneously occurring in the field creates

student teachers able to navigate the ever-changing environments of education.

This award-winning Professional Development School model is recognized by the National Association of Professional Development Schools (NAPDS) for its excellence in training future teachers. In 2014 Millersville University won the Exemplary Professional Development School Achievement Award.

Millersville's PDS model forges a mutually beneficial connection between the regional schools and the University through the close collaboration on this program. Millersville students benefit from this collaboration through extremely successful placement rates.

Student Teaching Requirements

All students (PDS and non-PDS) are eligible to teach in fall or spring semesters and must sign up one year prior to the student-teaching semester. Student are responsible for their own transportation during student teaching.

For admission to the Millersville student-teaching program (PDS AND non-PDS), the following policies apply:

1. Grade point average of 3.0 at the time of student teaching. Effective spring 2010, a GPA below 3.0 and above 2.8 will be accepted; however, higher scores on the content area certification examination(s) will be required in order to meet final Certification requirements in Pennsylvania. Please see the Certification Office for a list of Certification testing scores with the GPA deviation.
2. Students must have earned at least 85 credits.
3. Must be admitted to APS.
4. Satisfactory dispositions record.
5. A negative TB test must be on file with the Department of Field Services.
6. Submission of satisfactory (no record exists) Act 34 (Criminal Record Check) report, satisfactory (no record exists) Act 114 FBI clearance (fingerprint check), and satisfactory (no record exists) Act 151 (Child Abuse History Clearance) report on file with the Department of Field Services.
7. Evidence of having current liability insurance.
8. Submission of a current Personal Information Form.
9. Additional documents/trainings may be required of some placement settings.

Certification

Millersville University prepares students to be able to apply for the following certification areas in the state of Pennsylvania:

- Art
- Biology
- Chemistry
- Dual Early Childhood Education (PK-4) and Special Education (PK-8)
- Dual BSE Subject Area (7-12) and Special Education (7-12)
- Early Childhood Education (PK-4)
- Earth and Space Science
- English
- French
- German
- Mathematics
- Middle Level

- Music
- Physics
- Social Studies
- Spanish
- Technology Education

Chincoteague Bay Field Station of the Marine Science Consortium

Millersville is a founding and senior full member of the Chincoteague Bay Field Station of the Marine Science Consortium, a nonprofit educational corporation comprised of regional universities and colleges that operate a marine station at Wallops Island, Virginia. The consortium has several seagoing vessels and laboratories with biological and oceanographic equipment. Newly constructed labs and living facilities for students and staff are provided at the station.

Four 3-week sessions are offered at Wallops Island each summer. See the biology and earth sciences department listings for information on the Chincoteague Bay Field Station of the Marine Science Consortium and the many programs and courses offered there. For more information and to apply for courses, go to www.cbfieldstation.org (<http://www.cbfieldstation.org>), or contact the CST.

Special Events

For more information on special events at Millersville, visit the University home page: www.millersville.edu (<https://www.millersville.edu>).

Special Funds

The William W. Adams Endowment in support of the Aristides De Sousa Mendes Lecture. Used to support the Aristides De Sousa Mendes Lecture at the annual Holocaust Conference. In the event the Holocaust Conference is discontinued or suspended for more than one year, the interest earned from the endowment should be applied to studies of the Holocaust at the University.

Ashkar Family Fund for Global Experiences. The Fund is being established to support one or more students participating in international education initiatives. Such needs can include but are not limited to financial assistance for long- or short-term study abroad, international internships, and student teaching and research experiences abroad. Decisions regarding the expenditure of the annual spendable income will be made by the Office of International Programs and Services or its successor. Recipients must have a cumulative GPA of 3.0 or greater.

Baseball Excellence Fund Endowment. Funds to support the University baseball program, including but not limited to Benchmark Construction Company, Inc., Living-Learning Community Programming—South Quad Lobby Endowment. The income from the endowment will be used for programming within the Living-Learning Community, South Quad, Lobby.

Albert W. Bender Memorial Endowment. Used for acquisition of materials for the University library.

Harold and Clara Brenner Memorial Endowment Fund. Used for acquisition of materials for the University library.

Robert V. and Virginia K. Brown Endowment for Health and Wellness. Income from the endowment will be used to support programming and other needs related to the promotion of health and wellness within the Center for Health Education and Promotion or its successor.

Class of 1938 Endowed Fund. Used in support of University projects as determined by the president of the University.

Class of 1939 Endowed Fund. Used in support of University projects as determined by the president of the University.

Class of 1949. Funds to be used for library acquisitions.

Class of 1950. Funds to be used for purchasing computers for classrooms and the library as determined by the president of the University or designee.

Class of 1953 Endowment. Income from the endowment is to be used at the discretion of the president of the University or designee.

Diana's Dreamers: Determined to Defeat Breast Cancer. Income from the endowment will be directed towards Millersville University's student health and wellness programming, with a specific emphasis on breast health.

The Dr. Mary Elizabeth Dixon Endowment for Allied Health Professions. To be used for the acquisition of instructional equipment for Allied Health professions in the Department of Biology. Allocation of funds for specific equipment is to be determined by the chairperson of the biology department and the Allied Health Coordinator.

The Amy and Lee Dmizak Honors College Endowment. To support programs associated with the Honors College, with first preference toward assisting with global initiatives. Funds will be used at the discretion of the director of the Honors College in consultation with the University president.

Susan C. and Gerald C. Eckert Service and Philanthropy Endowment Award. Income from the endowment will be directed to a University program in honor of the recipient and as directed by the award recipient.

Endowment for the Arts. To support equipment needs, renovations, maintenance and programs in the arts, including the Winter and Ware centers.

Ermaleen B. Etter Faculty Research Award. Awarded to an education faculty member to conduct research contributing to professional and personal enhancement of professors instructing students with learning disabilities.

Mary Ross Ezzo. Funds to be used toward a literary lectureship.

Paul G. Fisher Endowment for a Symphonic Guest Artist. Funds are directed to the honoraria and expenses to bring distinguished symphonic band conductors or soloists to the University to perform primarily with the Millersville Symphonic Band.

Peter H. Freedman Jazz Concert Endowment. To fund an annual jazz concert.

Helen A. Ganser Endowment Fund. Used to purchase library materials.

Glenna M. Hazeltine Endowment. Used in support of a University conference, to be known as the Glenna M. Hazeltine Women in Mathematics and Science Conference.

William Randolph Hearst Foundation Endowment Fund. Funds support scholarships for the Lancaster Partnership Program.

Elsie Breckbill Hollinger Endowment for Library Acquisition. Used for acquisition of materials for the University library.

Doris Keller Hosler Professorship for the Coordinator for Information Access Services. The professorship is to support an instructional program that will better enable Millersville University students to effectively use the Campus Library Resources. The responsibility of this professional librarian shall be to encourage, develop and educate students in the use of the library facilities at Millersville University.

Instructional Equipment Endowment. Income from the endowment will support purchases and maintenance of instructional equipment at Millersville University.

Eleanor Isaacson Lifetime Achievement in the Arts Award. The income from the endowment will be used to support the Isaacson artist-in-residence. Program expenses may include but are not limited to artist's fees, class materials, workshops, public presentations and associated events.

Ray W. Kauffman Endowment Fund. Funds honoraria and expenses to bring distinguished orchestral performers to the campus to perform with the Millersville Community Orchestra.

Esther Kilheffer Endowment in Earth Sciences. Used for the purchase of instructional equipment for the earth sciences department.

Harry D. Kilheffer Endowment. Used for acquisition of materials for the University library.

William J. Killough Foreign Language Faculty Support Quasi Endowment. Income from the endowment will support the faculty of the Language and Culture Studies department at Millersville University.

Richard '73 and Sally '72 Kuhnert Endowment for Mathematics. Used to provide funds to support department initiatives furthering the mission of the department. The usage shall be determined by the University president and/or his/her designee, typically the chair of the Department of Mathematics, in consultation with the dean of the CST.

Robert F. and Lena Bortner LaCaff '51 Library Support Endowment. The fund will support the Millersville University Francine G. McNairy Library and Learning Forum.

Liddell Field Study Fund Endowment. Awarded to support academic field experiences for students at Wallops Island (or other similar field studies). The funds may be used at the dean's discretion for scholarships for students attending the programs, research stipend, or field equipment to enrich the program. [College of Science and Technology]

Bruce R. Limpert Endowment. Income from the endowment will be used to support the Providence Project at Millersville University under the leadership of Dr. Marlene Arnold. The distribution of the funds will be made by the University president or his/her designee. Upon completion of the Providence Project, all remaining spendable income will be directed to the Entrepreneurship Program.

Frank S. Lisella Endowment for Biology Equipment. Funds to be used by the biology department to purchase equipment that will support the education of students.

Anna Funk Lockey Lectureship Endowment Fund. Funds support a lectureship in education.

Susan P. Luek Psychology High-Impact Practices Endowment. The income from the endowment will support student-faculty research needs within the Department of Psychology or its successor, such as research

supplies and portions of the costs associated with students or faculty preparing for, traveling to or presenting at conferences.

Elsie McAuslan Library Endowment Fund. Used to purchase materials for the library.

William M. and Winifred Cooke McCain Endowment. Used for acquisition and restoration of material of historical value to the Millersville University Archives and Special Collections.

Mary McGrann Award. Award is to be used to procure specialized supplies, equipment and services necessary to assist a deaf or hearing-impaired person in achieving his/her academic goals while enrolled as a full- or part-time student at Millersville University. A student from Lancaster County shall receive first preference for the use of these funds. Should multiple students need these funds, the decision on their expenditure shall be made by the University president or his/her designee.

The Melva S. McIlwaine Masterclass and Concert Endowment. Used to provide students of Millersville University with direct access to nationally and internationally recognized artists in vocal and instrumental music—classical, popular and jazz through master classes and concerts, which will also benefit the community at large. A committee shall be appointed by the University president or her/his designee representing the major performing music areas—vocal, instrumental, keyboard, percussion—who shall select the artists for the featured events.

Paul J. McInerney Memorial Lecture Endowment Fund. Funds cover direct costs of invited distinguished guest lecturers, who will lecture within the physical sciences.

Meteorological Endowment. Established in memory of Dr. Russell DeSouza for equipment acquisition for the earth sciences department.

Mowery Family Baseball Scholarship Endowment. Awarded to support the Millersville University baseball program including but not limited to scholarships, travel costs, equipment and field improvements. Use of the fund will be determined annually by the men's baseball coach in consultation with the baseball coaching staff and the athletic director.

Karen A. Murley Student Undergraduate Research Fellowship Program in Chemistry. Applicants to the program will be evaluated by the department and admitted based on:

1. GPA (>3.7 preferred, second preference >3.5);
2. Academic standing (minimum 45 credits);
3. A brief 500-word personal statement of future plans (graduate school preferred);
4. Applicants must already be accepted into a faculty research program (MU faculty research program has first preference).

Participants in the Karen A. Murley SURF Program in Chemistry must

1. Apply to the program and plan research with their faculty mentor during the spring semester. Biography to be posted to the website for the Karen A. Murley SURF Program;
2. During the summer, participants spend 10 weeks working at least 25 hours/week as a research assistant;
3. In September, participants must submit a formal report summarizing summer research findings. They will also be recognized, by a commemorative plaque in the department, for participation in the Karen A. Murley SURF Program in Chemistry;

4. During the fall semester, participants will present during the Fall Speaker Series for the department on their research findings; and
5. In the spring following their participation in the program, participants will present a poster summarizing summer research findings at the National American Chemical Society meeting and at Made in Millersville.

C. Maxwell Myers Endowed History Memorial Fund. Used to purchase library books for the history department.

Conrad Nelson Endowment in the Fine Arts. Income from the endowment will be used to fund an artist-in-residence program.

Joseph F. Noonan Memorial Academic Student Activities Endowment. The income from this endowment will be used to finance activities for students that will enhance their academic program. Funds to be awarded on proposals submitted to an All-College Committee established by the Vice President for Academic Affairs.

The Petras Endowment for Equipment. The income from the endowment will be used to purchase computer equipment for classrooms or the library.

Melzer R. Porter Memorial Library Fund. Used to purchase music literature for the music collection of the library.

Carl R. Rees Mathematics and Computer Science Fund. Used to advance faculty development in the mathematics and computer science departments.

The Robertson College of Science and Technology Instructorship Endowment. Awarded to untenured faculty in the College of Science and Technology for release from one course to pursue research. First preference will be faculty in their first year. If there is no new hire in a particular year, a one-course release time award may be granted to other faculty members with the following priority: faculty in their second year of tenure-track service, followed by those in their third year, followed by those in their fourth year. If no tenure-track faculty member is eligible in a particular year, the Instructorship will not be awarded, and the spendable income will be returned to the endowment principal to enhance future earnings. Additionally, in any year in which a portion of the spendable income is unused, that portion will be returned to the principal as well.

College of Science and Technology Dean's Discretionary Endowment. Used to provide funds to be allocated flexibly to support college programs consistent with the mission of the college. The usage shall be determined by the University president and/or his/ her designee, typically the dean of the College of Science and Technology. Funded by Richard '73 and Sally '72 Kuhnert.

Elsie S. Shenk Endowment. Used in support of the Wellness and Women's Center Program.

Jestina Stahl Endowment for Library Support. Funds are directed to the acquisition of materials for the library.

Samuel Bechtold Stayer and Caroline Nissley Stayer Endowment. Awarded to faculty within the College of Education and Human Services for activities which enhance both their professional development and the academic development of their students, and ensure that Millersville University maintains a leadership role for programs in education.

Carl Van Stephenson Memorial Library Fund. Used to purchase library books.

Susquehanna Bancshares Nonprofit Internship Program. The income from the endowment will be used to support the students and programs associated with the Susquehanna Bancshares Nonprofit Internship program. These costs include but are not limited to student stipends and program costs.

Tell School of Music Excellence Fund Endowment. The fund will support the music program, including but not limited to scholarships, equipment, guest performers, student travel funds, etc.

Richard Cecil Todd and Clauda Pennock Todd Athletic Endowment Fund. Used to develop and maintain an outstanding athletic program, including all men's and women's varsity sports. Only the men's varsity basketball program shall be excluded from this fund. It is recommended that funds be used for athletic scholarships, the strength-training facility, and sponsorship of and participation in appropriate tournaments.

Richard Cecil Todd and Clauda Pennock Todd Basketball Endowment Fund. Used to develop and maintain an outstanding men's varsity basketball program.

Richard Cecil Todd and Clauda Pennock Todd History Endowment Fund. Used for unrestricted purposes within the Department of History. The benefactor recommends the following to be considered: continued participation in the National History Day Project (or comparable project), undergraduate scholarships, lecture series, student retreats, departmental publications, special equipment or distinguished history chair.

Richard Cecil Todd and Clauda Pennock Todd Library Endowment Fund. Used to support the University library. The funds shall aid the University in its quest for excellence and shall be used to supplement and not replace regularly budgeted state funds for the library.

Richard Cecil Todd and Clauda Pennock Todd Presidential Endowment Fund. Used to benefit the University at large. The fund shall be unrestricted in nature.

Richard Cecil Todd and Clauda Pennock Todd Social and Cultural Growth Endowment Fund. Used to promote social and cultural programs at the University and to develop in students a thoughtful and well-informed attitude towards problems of current significance and towards that which is fine in music, art, literature and drama.

United Campus Ministry Endowment. Funds will support program/activity needs for United Campus Ministry (UCM).

Kay E. Vandergrift and Jane A. Hannigan Innovator-in-Residence Program Endowment. The income from the endowment will be used to support costs associated with the "Innovator-in-Residence" program. This program will bring an "innovator" to campus for up to three days to interact with the Millersville University community, including class presentations, workshops, public presentations and associated special events. Costs may include but are not limited to speaker honorariums, travel expenses and associated presentation materials.

Walter B. '42 and Betty Waetjen Global Opportunities Fund. Funds to support program needs associated with either education-abroad initiatives or on-campus internationalization efforts. Such needs can include but are not limited to expenses related to providing financial assistance for students to participate in study, internships, student teaching or research experiences abroad; hosting visiting faculty and students from abroad; program support for said students and faculty;

and costs associated with establishing, promoting or monitoring student programs with international academic partner institutions.

Robert S. and Sue A. Walker Center for Civic Responsibility and Leadership Endowment. The income from the endowment will support the Walker Center for Civic Responsibility and Leadership programs: student-centered educational and developmental projects and activities.

Michael Warfel '84 Fund for International Student Experiences. Awarded to support program needs associated with either international education initiatives or on-campus internationalization efforts. Such needs can include but are not limited to expenses related to providing financial assistance for students to participate in long- or short-term study, internships, student teaching or research experiences abroad and hosting visiting faculty and students from abroad. Decisions regarding the expenditure of the annual spendable income will be made by the Office of International Programs and Services or its successor.

The Ware Center Endowment. Funds to be used directly for annual operational support restricted to building maintenance and to program support for music and performing arts at the Ware Center at 42 N. Prince St., Lancaster, Pa., in perpetuity.

Donald E. Weiman Instructional Equipment Endowment. Award used to support the repair or purchase of equipment for the chemistry department.

Harold R. Weirich Memorial Lecture in Biology Endowment Fund. Funds support annual lecture in biology.

Women's Issues Endowment. Awarded annually to members of the University community for conducting or disseminating research or organizing programs that focus on issues of central concern to women.

Women's Studies Endowment. Awarded to support teaching, the conducting or dissemination of student or faculty research, or the organization of, or attendance at, programs focusing on issues of concern to the women's studies program.

David Zubatsky Endowment for International Studies. Used for acquisition of materials of value for the University library to establish a collection for international studies.

Dr. David S. and Marie N. Zubatsky International Studies Scholarship and 20th-Century Art Library Materials Fund. Used for acquisition of 20th-century art resources for the University library.

David S. Zubatsky Endowment for Judaic Studies. Used for acquisition of materials for the University library to establish a collection for Judaic studies.

Special Information Related to Spring and Summer 2021 Due to COVID-19

The international coronavirus crisis, also known as the COVID-19 pandemic, caused an interruption to the spring 2020 semester at Millersville University and other educational institutions across the United States and around the world. On March 13, 2020, Millersville students began spring break and did not return to campus for the remainder of the semester. All courses were converted to a remote-learning modality if they were not already designed to be delivered remotely. Scheduled in-person courses were suspended through March 22, 2020, to allow students and faculty time to make the transition to a fully remote learning environment.

To support students in this transition, several academic processes and policies were amended or suspended for the 2020 spring semester. The following apply only for the spring 2020 semester:

- Undergraduate students were offered the option to have courses converted to remote learning graded as pass/fail instead of the standard University grading scale (A through F). Courses that were graded using the pass/fail scale were exempt from the policies and restrictions that are otherwise applied (see pass/fail grading policy) and are not used in the computation of the student's cumulative grade point average. Credits earned in these courses do count towards degree requirements, including major, minor, general education and credits for graduation, but were subject to stated minimum grade requirements where these are established. This latter requirement was suspended for students completing all graduation requirements before the beginning of the fall 2020 semester. The adapted pass/fail policy was extended to fall semester 2021
- Students participating in an overseas exchange or study abroad were recalled from these countries on or around March 13, 2020. All efforts were made to allow them to continue their studies through late entry into courses at Millersville University, individualized instruction or independent study with a Millersville faculty member, or online via their international institutions of education
- Deadlines for withdrawal from a spring 2020 course were extended by one week to the end of the 11th week of classes.
- Deadlines for resolving incomplete grades from fall 2019 and winter 2020 were extended from April 3 to May 1, 2020.
- Deadlines for incomplete grades assigned in spring 2020 were extended from the 10th week of the semester to December 4, 2020.
- Academic standing determination was suspended for the spring 2020 and Fall 2021 semesters. The following amended scale was used to determine spring 2020 and fall 2021 academic standings:

Students with a Millersville University CGPA of 2.00 or greater are in satisfactory academic standing. Students with less than satisfactory academic standing at Millersville are subject to academic warning or continued probation, as follows:

Review credits	Cumulative GPA	Action
0.5-16.0	Below 2.00	Warning Letter
16.5 or more	Below 2.00	Probation
32.5 or more	Below 2.00 while on Probation	Dismissed ¹

¹ Students on probation at the end of a summer or winter session will be continued on probation for the following semester and cannot be dismissed. A student cannot be dismissed at the end of any fall or spring semester in which he/she has earned a 2.00 or greater semester GPA, even if the CGPA remains less than 2.00.

Note: Review credits do not apply to students admitted on probation. Students admitted on probation must achieve at least a 2.00 semester GPA or face dismissal.

University Scholarships and Awards

A scholarship is a financial grant for a student's tuition. The grants are based on specific criteria such as financial need or a particular academic or athletic excellence. Recipients are chosen by the Millersville University

president or her/his designee. All scholarships/ awards listed are not renewable unless specifically indicated otherwise in the description.

For general information regarding other scholarships, contact the department found in the brackets [] at the end of the scholarship criteria.

Scholarships - Academic

Dr. Joseph J. Abromaitis Family Industry and Technology Department Scholar-Athlete Scholarship. Awarded to a full-time male or female student majoring in industry and technology who participates in an intercollegiate sport in the year the scholarship is awarded. The recipient must be full-time, maintain a 3.0 GPA and be a sophomore, junior or senior for renewal. [Applied Engineering, Safety & Technology]

African-American/Latino Alumni Scholarship. Awarded to African-American and Latino students who are full-time undergraduates. Recipients must have a minimum CGPA of 2.5 with 36 or more credits. A written essay and interview are required. [AA-LAS Committee]

All-Greek Council/Stefanie Wojcik Scholarship. Awarded to a student affiliated with an organization that is a member of the All-Greek Council. [Student Affairs]

American Association of University Women Scholarship. Awarded to a "nontraditional" female student from the Lancaster area who has completed 90 credits and is one year from completing her degree requirements. [Financial Aid]

American Dream Scholarship. Awarded to a student(s) of academic promise who is committed to community involvement and shows demonstrated financial need. The award is renewable for an additional six semesters (total of eight). [Financial Aid]

American Industrial Hygiene Association Scholarship. Awarded to a student majoring in occupational safety and environmental health or a related discipline, and who has demonstrated a proclivity toward industrial hygiene. Applicants must have completed 60 credits, including 12 in industrial hygiene, and have a GPA of at least 2.5. [Applied Engineering, Safety & Technology]

Eugene and Dora Androlunis Scholarship. Awarded to orphaned students or students who have financial need who are also residents of the community of Shenandoah, Pa., or its vicinity. [Financial Aid]

Robert Andriulli Scholarship for Painting. Awarded to a rising sophomore or junior who demonstrates excellence in painting. [Art & Design]

The Judge and Mrs. Anthony R. Appel Scholarship. Awarded to at least two music majors at Millersville University, with preference to students with demonstrated financial need. The recipients must audition with the music department. The scholarship is renewable, provided the students continue to major in music and remain in good academic standing. The students may receive the scholarship for a total of eight semesters. [Music]

APSCUF-MU Scholarship. Awarded to two undergraduates enrolled part-time or full-time in a degree program at Millersville. Applicants must have completed 45-75 credits, including at least 9 at Millersville, and have a GPA of at least 3.7. Financial need is also considered. [APSCUF Office]

Leo Ascher Music Scholarship. Established by Mrs. Franz Ascher Nash and awarded to the undergraduate music major who has best developed

a musical composition based on one of Leo Ascher's original themes. [Music]

Elizabeth H. Aston and Barbara A. Donan Scholarship. Awarded to an incoming, full-time first year student from Lancaster County in the teacher preparation program in the College of Education and Human Services. Recipient chosen on the basis of excellence in scholarship (demonstrated by GPA and classes undertaken in high school, as well as nationally recognized test scores) and demonstrated financial need. [Admissions]

Laurene Cassady Auker Scholarship. Awarded to students demonstrating financial need. [Financial Aid]

Willard O. Aumack Biology Scholarship. Awarded to students majoring in biology with financial need. [Financial Aid]

Erin and Tom Baker Get Involved! Millersville University Student Leadership Award. Awarded to a student who is enrolled at Millersville full-time and is active in campus organizations and programs with a demonstrated interest in bettering the campus community. The student will have experience as a student leader and an enthusiasm for assisting and working with others from a diverse assortment of backgrounds. [Student Affairs]

Thomas R. Baker Memorial Scholarship. Awarded to a "worthy student of ability" upon completion of the junior year. The Wickersham Scholarship winner is not eligible for this award. [Honors & Awards Committee]

Kendig C. and Nancy Bare Scholarship. Awarded to a student in good standing who has demonstrated musical ability. [Music]

John '65 and Joyce '63 Barilla Education Scholarship. Awarded to a student with demonstrated financial need in the College of Education and Human Services. [Financial Aid]

Beth Ann Barry Memorial Scholarship in Computer Science. Awarded to one rising junior with a GPA of 3.0 or greater within a range of 45 to 70 earned credit hours, has volunteer involvement with the campus and/or local community, is involved with computer science organizations or activities, and has demonstrated the greatest potential to succeed in a career related to computer science. The scholarship is renewable for one additional year, provided the student's GPA remains at 3.0 or greater. [Computer Science]

Ann B. Barshinger Scholarship. Awarded to a first year student from York County with involvement in community/civic activities. Selection will be based on the high school academic and cocurricular record as recommended by the admissions office. The scholarship is renewable for up to three additional years, depending upon the recipient remaining in good academic standing, with a CGPA of 3.0 and with continuing involvement in community/civic activities. [Admissions]¹

The Prof. Charles Richard Beam Memorial German Scholarship. Awarded to a first year, sophomore, junior or senior student with a major or minor in German. First preference is given to a student with a demonstrated interest in Pennsylvania German studies. Second preference is to a graduate of Ephrata High School (Ephrata, PA). Financial aid is a consideration but not a requirement. This scholarship is renewable. [Language and Culture Studies]¹

The Beideman Scholarship. Awarded to two to four students in the Honors College selected on academic merit, significant community involvement and/or financial need. [University Honors College]

D. Luke and Elva W. Biemesderfer Scholarship for Merit in Foreign Languages. Awarded annually to an entering full-time first year student majoring in a foreign language. The recipient shall be chosen on the basis of excellence in scholarship and leadership potential. Financial need may be taken into consideration but shall not be the major criterion. [Admissions]¹

Elva W. Biemesderfer Scholarship. Awarded to a student in the communication and theatre curriculum, with a concentration in theatre. [Communication & Theatre]

Biology Scholarships. Awarded to incoming biology majors in the first year who are full-time students pursuing a B.S., B.A. or B.S.Ed. in biology. Selection shall be based on merit demonstrated by high school class rank or GPA performance, with emphasis on academic performance in mathematics and science courses, standardized test scores (SAT or ACT) and other criteria as determined by the admissions office and the biology department. [Admissions]¹

Biology Student Investigator Grant. Awarded for research, travel and presentation expenses for students engaged in research within the biology major. First preference is to students enrolled in Independent Biology Research and Biology Honors courses (currently Biology 498 and Biology 499). Covered expenses may include costs to attend, to prepare materials for presentation or to travel to conferences helpful to the student's research efforts, but may not include a stipend. Such travel may occur during the student's academic career at Millersville University or within one year of graduation, provided the travel is included in the student grant application. [Biology]

Grace Doan Bitler and Charles F. Bitler Jr. Memorial Scholarship. Awarded to a student who has both musical potential and financial need. [Music]

Richard and Elaine Blouse Scholarship. Awarded to a business administration major who has a minimum 3.5 high school academic average and a record of community service. The scholarship is renewable for no more than four years, provided the student maintains a minimum academic average of 3.0. Financial need may be taken into consideration in awarding the scholarship. [Admissions]¹

Board of Governors Scholarships. Awarded to academically talented students demonstrating exceptional extracurricular service, talents and other characteristics that will contribute to a diverse campus community. Pennsylvania residents who will enter as full-time, first-year students in the fall may be considered for the full tuition. [Financial Aid]¹

Elizabeth G. Botdorf Scholarship for English Studies. Awarded to two full-time first year and/or transfer students majoring in English. The students must volunteer at least five hours per semester for the English department. The scholarship is renewable, provided the students maintain a 3.0 GPA. [Admissions]¹

Chip and Kathy Brabson, Ph.D. '70 Physics Scholarship. Awarded to an incoming, full-time first year physics major based on merit as demonstrated by high school class rank or GPA performance, with emphasis on academic performance in mathematics and science courses; standardized test scores (SAT or ACT); and other criteria as recommended by the admissions office and the physics department. Financial need shall be a significant criterion. First preference is to a qualifying student from Lancaster Catholic High School or Solanco High School in alternating sequence. The scholarship may be renewed for up to three years, provided the student remains a physics major in good academic standing. [Admissions]¹

J. Elvin Brenner 1909 Education Scholarship. Awarded to a rising sophomore majoring in education, with first preference to an emphasis on secondary education. The recipient will have a CGPA ranging from 2.5 to 3.25 and will be a middle-income student qualifying for financial need. The scholarship may be renewed for two additional years, provided the recipient maintains a 2.5 CGPA. The amount awarded to any individual student may not exceed one-half tuition, at which time an additional recipient(s) will be eligible. [Financial Aid]

Lyman Brenner '71 History Scholarship. Awarded to a rising sophomore majoring in history, with second preference to social studies. The recipient will have a CGPA ranging from 2.5 to 3.25 and will be a middle-income student qualifying for financial need. The scholarship may be renewed for two additional years, provided the recipient maintains a 2.5 CGPA. The amount awarded to any individual student may not exceed one-half tuition, at which time an additional recipient(s) will be eligible. [History]

Richard F. Brenner 1941 Industrial Technology Scholarship. Awarded to a rising sophomore majoring in industrial technology, with first preference toward a student receiving teacher preparation. The recipient will have a CGPA ranging from 2.5 to 3.25 and will be a middle-income student qualifying for financial need. The scholarship may be renewed for two additional years, provided the recipient maintains a 2.5 CGPA. [Applied Engineering, Safety & Technology]

Robert V. and Virginia K. Brown Scholarship in Industrial Technology. Awarded to a rising sophomore majoring in technology education or industrial technology. The scholarship may be renewed for four additional semesters, provided the student maintains a 3.2 GPA. [Applied Engineering, Safety & Technology]

C-P Flexible Packaging - Gary Nicholas Memorial Scholarship. Awarded to a full-time rising senior in the occupational safety and environmental health program at Millersville who matriculated from York County. Recipient must have a GPA of 3.2 or greater in the program, with consideration given to an acceptable overall GPA. Scholarship to be awarded primarily on the basis of merit, without necessary consideration of financial aid. [Applied Engineering, Safety & Technology]

Michael K. and Neysa M. Callahan Scholarship. Awarded to an entering or transfer student who is a child or spouse of a Benchmark Construction Company, Inc. employee. Scholarship selection will be based on academic average and community involvement. The scholarship is renewable for a maximum of three additional academic years, provided the student maintains a GPA of 2.5 or greater. If a student associated with Benchmark Construction Company does not qualify, then preference is given to a student from Hempfield High School or to a student-athlete participating in the football program. The scholarship will not automatically be renewed to the Hempfield student or student-athlete, but will be reviewed annually in case a student who is a child or spouse of a Benchmark Construction Company, Inc. employee qualifies. If not, the current Hempfield or student-athlete recipient will receive the scholarship, provided the renewal criteria are met. This process will be followed each year a Benchmark family member is not eligible. [Admissions]¹

Dr. Rosario Caminero Scholarship. Awarded to a student minoring in the Latina/o Studies program. The student will have at least a 2.5 GPA and have completed at least 15 credits at Millersville University. [Latina/o Studies]

Campus Club Scholarships. Awarded to members of the junior class who have maintained a GPA of 2.0 or higher and who are dependent wholly or

in large part upon their own efforts for financing an education. [Financial Aid]

Harry E. Canter Statistics Scholarship. Awarded to the junior or senior mathematics or computer science major who has shown the most outstanding performance in statistics. [Mathematics]

Joseph Anthony Caputo and Linda Ryan Caputo Scholarship in Chemistry. Awarded to an incoming chemistry major based on merit as demonstrated by class-rank performance, scholastic-aptitude examinations and other criteria as recommended by the admissions office. [Admissions]¹

Eileen Carew Promising Writers Scholarship. Awarded to an English major with a declared Writing Studies option who has achieved excellence or shows promise in writing. The student must have a minimum 3.0 GPA. Special consideration is given to students who have engaged in community service and who demonstrate academic merit and financial need. [English]

Rachel Carson Biology Field Course Scholarship. Awarded to at least two students for field biology courses that require residence at a site other than Millersville University. Recipients must be in good academic standing overall (i.e., at least 2.00 QPA) and within their academic major, and pursuing a B.A., B.S. or B.S.E. in the sciences or mathematics. Although preference may be given to students in the marine biology option, students with majors in other areas of biology, other sciences or mathematics at Millersville University are encouraged to apply. Financial need may be considered, but it is not the deciding factor in selection. [Biology]

Don R. and Judith C. Carter Scholarship for J. P. McCaskey High School Students. Awarded to graduates of J. P. McCaskey High School who matriculated at Millersville University with intent to concentrate either in business or in one or more of the biological or physical sciences. The scholarship may be renewed three times, provided the recipient maintains a 2.8 quality grade point average in the year prior. [Admissions]¹

Lt. Col. Jo Ann Cashman Scholarship. Awarded annually to a student enrolled in the nursing curriculum who is in good academic standing. Preference may be given, but is not limited to, students who are in financial need. [Nursing]

Ceramics Workshop Scholarship. Awarded to a junior or senior Millersville University student who has completed at least two semesters of ceramics at Millersville University to take a ceramics workshop, which runs for a minimum of two days. Applicants must submit a written proposal to the Department of Art & Design to be considered for this scholarship. [Art & Design]

Ernest and Mary Chamberlin Scholarships. Awarded to students in the adult continuing education program who have earned the highest number of credits (up to 90) and who have a GPA of at least 3.8 in their current program of study. [College of Graduate Studies and Adult Learning]

Christina A. Ciallella Memorial Scholarship. Awarded to a female student who has completed at least 60 credits at Millersville, with no restriction upon major and based upon financial need. [Financial Aid]

The Philip and Lucy Citerone Scholarship. Awarded to a returning sophomore, junior or senior with a major within the College of Business. First preference will be given to a first-generation college student. Financial need is a consideration but not required. If a first-generation student cannot be identified, second preference will be given to the

student within the College of Business with the greatest financial need. This award is renewable. [College of Business]

Clark Associates, Incorporated Scholarship. Awarded to a rising junior or senior student at Millersville University who demonstrates leadership skills or shows an attitude of entrepreneurial spirit in how they approach situations. [Financial Aid]

Clark-Yalda Scholarship in Atmospheric Science. Awarded to an incoming first year student majoring in meteorology. The recipient must be in the top 25 percent of her or his high school class and show evidence of strong science and mathematics skills, demonstrated by a combination of class work and standardized tests. First preference is to a student from outside of Pennsylvania who is also of an underrepresented group; otherwise a qualifying out-of-state student; otherwise an underrepresented student from Pennsylvania; and finally, a qualifying student from Pennsylvania. (Gender is not to be considered an underrepresented category unless a particular gender falls below 30 percent of total enrollment in meteorology.) [Admissions]¹

Class of 1916 R. Bruce Walter Scholarship. Awarded for an academic scholarship as determined by the University president or designee. [Financial Aid]

Class of 1917 Sanders P. McComsey Scholarship. Awarded to a student who excels in English, payable at the end of the junior year. [English]

Class of 1927 Memorial Scholarship. Awarded to a sophomore majoring in education who has passed 45 credits or more, has an aptitude and ability for the profession of teaching, and who participates in University activities, especially intercollegiate sports. [Academic and Cultural Enrichment Committee]

Class of 1935 Scholarships. Awarded to junior students who are in good academic standing and demonstrate financial need. [Financial Aid]

Class of 1937 Scholarship. Awarded to a first-semester senior who intends to teach. The student must have a GPA of at least 2.5 and two letters of recommendation from teaching faculty. [Academic and Cultural Enrichment Committee]

Class of 1940 Scholarship. Awarded to a student who demonstrates financial need and is majoring in education. [Academic and Cultural Enrichment Committee]

Class of 1942 Scholarship. Awarded annually to an outstanding education major who has achieved academic excellence and has demonstrated financial need. [Academic and Cultural Enrichment Committee]

Class of 1943 Scholarship. Awarded to a senior in the College of Education and Human Services based on exceptional potential as a classroom teacher, and who has earned a total of 96 credits with a GPA of 3.0 or better. [Academic and Cultural Enrichment Committee]

Class of 1944 Scholarship. Awarded to a student majoring in education who has completed at least 60 credit hours and has demonstrated financial need. [Academic and Cultural Enrichment Committee]

Class of 1947 Scholarship/Scholarship for Research Students in the University Honors College. Awarded to a student who is enrolled in the University Honors College, engaged in independent research related to his or her course of study at the University, and demonstrates a need for financial assistance. [University Honors College]

Class of 1948 Scholarship. Awarded to an upperclassman who demonstrates scholastic ability and financial need. [Financial Aid]

Class of 1951 Scholarship. Awarded as an academic scholarship (as determined by the director of financial aid) based upon merit, financial need or both. [Financial Aid]

Class of 1952 Scholarship. Awarded to a student majoring in education and entering his/her junior year (as determined by credits earned) with a GPA of 3.0 or greater. [Academic and Cultural Enrichment Committee]

Class of 1954 Scholarship. Awarded to a rising junior or senior who is majoring in a discipline in the College of Education and Human Services. The scholarship is to be merit based, upon prior volunteerism/enthusiasm for and successful coursework in the field of education. The scholarship is not renewable. [Dean of Education]

Class of 1958 Education Scholarship. Awarded as a scholarship for a matriculating student in education. The scholarship is not renewable. [Academic and Cultural Enrichment Committee]

Class of 1959 Scholarship. Awarded to a student majoring in education. [College of Education and Human Services]

Class of 1961 and 1962 Scholarship. Awarded to a student who is a rising sophomore or junior with a minimum GPA of 3.0 and demonstrated financial need. This scholarship is renewable for up to two additional semesters. First preference will be given to a student majoring in education. [Financial Aid]

Class of 2012 "Sophomore Slump" Scholarship. Awarded annually to a male and female student who are members of the sophomore class with a minimum 2.5 GPA and financial need. First preference will be for students who have performed community service. [Financial Aid]

Edna Butler Cohen '27 Mathematics Scholarship. Awarded to an entering female first year student mathematics major who has demonstrated superior academic excellence. The scholarship may be renewed for up to three additional years if a GPA of 3.0 or higher is maintained and the recipient continues to be a mathematics major. [Admissions]¹

J. Stanley Cook Scholarship. Awarded to a first-year or returning student with a minimum GPA of at least 3.0 and demonstrated financial need. The scholarship is renewable as long as the student maintains the minimum GPA requirements. [Financial Aid]

Cornerstone Senior Analyst of the Year Award. Awarded to a senior analyst of the Marauder Fund who demonstrates exceptional leadership, quality presentations and thorough research reports, and fosters teamwork and inclusiveness among general members and on the Executive Committee. The recipient will be chosen by the members of the MFSIA (Marauder Fund Student Investment Association). [Financial Aid]

John and Gail Coulson Scholarship. Awarded to an incoming first year or returning student in good academic standing and demonstrated financial need. This award may be renewed at the discretion of the Office of Financial Aid. [Financial Aid]¹

Council of Trustees Scholarship. Awarded as tuition assistance to the student serving as a member of the Council of Trustees. The scholarship is renewable for the period of time the student serves the Council. [Student Affairs]

Elisabeth Ruth Cramer/Truman A. Bender Herr Scholarship. Awarded to a student majoring in art education who demonstrates financial need. The

scholarship shall be presented to a first-year student and may be renewed as long as that student is in good academic standing and has financial need. [Admissions]¹

Martha B. Gross Culbertson and Bradley J. Culbertson Nursing Scholarship. Awarded to a student with financial need majoring in nursing who is in good academic standing. The scholarship may be renewed, provided the student remains in the major and is progressing toward graduation. First preference is for a qualifying student from York County. [Nursing]

Gladys Cooper Cunningham Scholarship. Awarded to a junior or senior who is most outstanding in early childhood education. [Early, Middle & Exceptional Education]

CVS Health Family Nurse Practitioner Scholarship. Awarded in \$1,000 increments to three students in good academic standing who are interested in Millersville University's family nurse practitioner or physician assistant programs. Recipients must intern/ volunteer with an organization that supports underserved populations. [Financial Aid]

Beatrice U. Datesman Scholarship. Awarded to a junior/senior on the basis of scholarship, requiring at least a 3.0 GPA in the major. Student's financial need shall be a determining factor. [Financial Aid]

Aimee Decker Scholarship. Awarded to a deserving Millersville student who is in good academic standing and has financial need as determined by the director of financial aid. [Financial Aid]

Dr. Benjamin J. Del Tito '77 and Anna DeBlois Del Tito Scholarship. Awarded to a student with at least 30 credits completed, a CGPA of 3.0 or greater and financial need. First preference will be for a dual science/music major; second preference is for a science major with a music minor; third preference is for a music major with a science minor. If no students meet the preferred characteristics, the scholarship will be awarded to a biology major. The scholarship may be renewed for two additional years, provided the recipient continues to meet the criteria under which he/she was initially selected. [Financial Aid]

Dr. Cynthia C. Dilgard Scholarship. Awarded to a student with a minimum 3.0 GPA who has taken at least one course on Shakespeare within the English department. Students may be of any major. The applicant will submit an application with a short essay about how Shakespeare relates to his/her life. [English]

William A. Dinges Endowed Veterans Scholarship. Awarded to a veteran from Pennsylvania who is a full-time upperclass student demonstrating financial need, with an academic average of 3.0 or higher, and is renewable for 4-6 semesters. First preference will be given to a veteran who has served in a combat zone. [Financial Aid]

Dr. Dominick '53 and Mrs. Helen DiNunzio Scholarship. Awarded to a full-time incoming first year student from Bristol Borough High School in Bucks County, Pa., who graduated in the top 10 percent of his/her high school graduating class, who achieved an average score of 1200 on his/her SAT, and who exhibits high standards in character and leadership. If no student from said high school is accepted to Millersville University for admission, a student shall be chosen from among the other high schools in Bucks County, Pa. [Admissions]¹

William H. and Alma P. Duncan Scholarship in Elementary Education. Awarded to an early childhood or middle-level education major on the basis of financial need, excellence in scholarship, leadership qualities and service to others. [Early, Middle & Exceptional Education]

Dean Dutcher Memorial Music Scholarship. Awarded to an incoming first year student who maintains enrollment as a full-time music major at Millersville University, based on musical talent in an art performance medium. [Music]¹

Earth Sciences Travel Scholarship. Awarded to a student majoring in earth sciences, with concentration in meteorology, geology or oceanography, to subsidize expenses related to professional conferences relative to the major in which the student is studying. [Earth Sciences]

James C. Ebbert Education Scholarship. Awarded to two incoming first year students demonstrating financial need who have a minimum high school GPA of 3.0 and are in teacher preparation in the College of Education and Human Services. First preference for the scholarship is to a student from the Pennsylvania Migrant Education program, and then to a student participating in the Color of Teaching mentorship program. Scholarships will be disbursed to the students' accounts for tuition, fees, and room and board. [Admissions]¹

Economics Department Scholarship. Awarded to a declared economics major with a GPA of 2.5 and a 3.0 in courses for the major. Preference is given to a junior who has financial need. [Economics]

B. Jeanne Elder Voice Scholarship. Awarded to a full-time undergraduate student who has chosen to major in voice. Recipient will be selected by the music department and chosen on the basis of excellence in scholarship (utilizing high school GPA and classes undertaken, as well as nationally recognized test scores for entering first year students and overall and major GPA for upperclassmen) and vocal performance skills and/or talent. Financial need may be taken into consideration but shall not be the major criterion. The scholarship is renewable for three additional years, provided the student maintains satisfactory academic progress. [Music]

Robert Elder Business Administration Scholarship. Awarded to a rising junior who is a business administration major demonstrating a strong commitment to the discipline; first preference is to a student with an interest in management. Student must be in good academic standing and have demonstrated financial need. [Management and Marketing]

Daniel G. Engle Scholarship. Awarded on completion of the junior year to a science major for superior scholarship and exceptional University and community service, and for maintaining a 3.0 GPA. [College of Science and Technology]

Paul W. Eshelman Memorial Scholarship. Awarded annually to a junior Industry and Technology student for excellence. The student must have a GPA of 3.0 or higher. Scholarship is to be paid upon the student's enrollment for the second semester of the senior year. First preference is to be given to a student who has demonstrated excellence in woodworking. [Applied Engineering, Safety & Technology]

Ermaleen B. Etter Scholarship in Special Education. Awarded to senior student teachers enrolled in the College of Education and Human Services who have demonstrated professional excellence during their student-teaching experience with learning-disabled children. [Academic and Cultural Enrichment Committee]

John Charles Falck Scholarship for Academic Excellence. Awarded to an undergraduate student on the basis of academic excellence and good character, as determined by the director of financial aid, and renewable each year that the student maintains a passing academic average. [Financial Aid]¹

Dr. Dominick J. and Frances McAndrew Fanani Memorial Scholarship. Awarded to an incoming first year student in humanities who has achieved a minimum cumulative high school academic performance of 3.3, and has a strong record of high moral character as demonstrated by community service and volunteer experience. [College of Arts, Humanities and Social Sciences]¹

Faraday Physics Scholarship. Awarded to two entering full-time, first year students pursuing a B.S., B.A. or B.S.Ed. in physics. The recipients shall be chosen based on merit as demonstrated by high school class rank or GPA performance, with emphasis on academic performance in mathematics and science courses; standardized test scores (SAT or ACT); and other criteria as determined by the admissions office and the physics department. Financial need may be taken into consideration but shall not be the major criterion. The scholarships are renewable for two additional semesters, provided the students continue as physics majors with CGPAs of at least 3.0 and GPAs within the major and required related courses of 3.0. [Admissions]¹

Margaret V. Farster and James R. Farster Scholarship. Awarded to an incoming first year student who is majoring in mathematics secondary education and has financial need. This scholarship will be renewable for an additional three years based upon successful academics and continuance in the major. [Admissions]¹

Donald Ferguson '70 Scholarship. Awarded scholarship(s) through a gift in memory of Donald Ferguson '70 by his mother, Elizabeth Mary Ferguson. [Financial Aid]

Valborg Fletty Memorial Scholarship. Awarded on the basis of scholarly ability and financial need to a student entering their senior year. [Financial Aid]

Kathy Focht '70 Elementary Education Scholarship. Awarded to an incoming first year or returning sophomore, junior or senior student from Lancaster County majoring in PreK–Grade 4 Early Childhood Education. First preference given to a student with a cumulative GPA of 3.5 or greater. Financial aid is a consideration but not a requirement. This scholarship is renewable. [Early, Middle, & Exceptional Education]¹

Robert and Darlene Ford Merit Scholarship in Geography. Awarded to a geography major who has completed a minimum of 75 credits at Millersville University by the semester prior to awarding of the scholarship, and who maintains a GPA of 3.2 overall. [Geography]

Robert N. and Darlene I. Ford Scholarship. Awarded to a Penn Manor High School graduating senior in good academic standing who has applied to and been accepted by Millersville University. The spendable income is based on the student's years at Millersville: First year: 12%; Sophomore: 16%; Junior: 24%; Senior: 48%. [Admissions]¹

Robert N. and Darlene I. Ford Scholarship for Strings. Awarded to a student majoring in music, with an emphasis in string instruments. First preference is to a graduate of Penn Manor School District. [Music]

Forty et Eight (Voiture 42) Scholarship for Nursing Education. Awarded to one or more students enrolled in the nursing program in pursuit of the Bachelor of Science in nursing, the Master of Science in nursing or the nurse practitioner certification program. The student should also demonstrate intent to be active in the practice of nursing upon completion of the program. The award will be made on the basis of academic potential and financial need as determined by the nursing

faculty. The scholarship may be renewed on the recommendation of the nursing faculty. [Nursing]

Dr. Abram Foster Scholarship for Excellence in History. Awarded to a student who is a rising junior or senior in history with a minimum GPA of 3.5 and demonstrated financial need. [History]

Gregory and Shannon Freedland Education Scholarship. Awarded to a student from the College of Education and Human Services with a 3.5 GPA or higher. First preference will be given to a graduate of the Lampeter-Strasburg School District. If this is not possible, second preference will be given to a graduate of any existing Lancaster County public high school. Preference will also be given to a student in financial need. This award is renewable for up to four years. [Financial Aid]

Peter H. Freedman Scholarship. Awarded to a student majoring in music. [Music]

Brent D. Frey Technology Education Scholarship. Awarded to a sophomore, junior, senior or graduate student majoring in technology and engineering education with a minimum GPA of 3.0 and demonstrated financial need. The scholarship may be renewed, provided the student continues to meet the criteria. [Applied Engineering, Safety & Technology]

Arthur and Claribel Gerhart Scholarship in Biology. Awarded to a student who is majoring in biology, is in good academic standing and has completed 60 credits by the end of the semester in which the award is made. Preference is given to sophomores and juniors. [Biology]

Sally Gibson Music Scholarship. Awarded to a student majoring in music who has demonstrated financial need. [Music]

Dr. Joseph W. '53 and Susan Fulton '84 Glass Scholarship. Awarded as tuition to a rising junior, with first preference to a nontraditional student. Recipients must be in good academic standing (minimum 2.75 CGPA), with demonstrated financial need. The award is renewable for one additional year. [Financial Aid]

Greek Council Scholarships. Awarded to encourage academically strong high school students with extensive extracurricular involvement to attend Millersville University. [Admissions]¹

Dr. and Mrs. Stephen Gring Scholarship. Awarded to an incoming first year student majoring in secondary education who has a minimum 3.5 high school academic average and a record of community service. The scholarship is renewable for no more than three years, and the student must maintain a minimum grade point average of 3.0. Financial need may be taken into consideration in awarding the scholarship. [Admissions]¹

Nancy Zakrewski Groff Memorial Scholarship. Awarded to a first-year student who has demonstrated academic achievement in high school; there is no restriction upon major or field of study. [College of Science and Technology]¹

Gene Haas Scholarship. Awarded to one or more incoming first year or returning undergraduate student(s) in machinist-based training or engineering programs. Recommended scholarship amounts are from \$500 to \$2,500 per student. Scholarships can be used for tuition, books, student's personal NIMS account, and cost of NIMS credentials and small personal tools the students are required by program to purchase. [Applied Engineering, Safety & Technology]¹

John and Audrey Hallgren Scholarship. Awarded to a student majoring in music. [Music]

James E. Harf '61, Ph.D., Study Abroad Scholarship. Awarded to offset program expenses for Millersville students in good academic standing studying abroad in a semester- or year-long program or one of shorter-term duration sponsored by or coordinated through the Millersville University Office of Global Education and Partnerships (or its successor). The intention of the donor is to maximize the number of participants in study abroad in a given year through the distribution of the spendable income. First preference will be for students (1) with financial need and (2) who are studying abroad for the very first time. It is understood that all of the financial support monies will be used as awards to the students and applied to expenses directly associated with the study-abroad trip, not for administrative expenses such as a processing fee, for example. Furthermore, recipients will be exempt from all such fees associated with the application process. [Director of the Office of Global Education & Partnerships]

The Willard O. Havemeier and Dr. Catherine Gibson Havemeier Scholarship in Computer Science. Awarded to a student engaged in computer science research. The recipient must have a QPA of 3.0 or greater. Use of the award is restricted to payment for related travel, materials and supplies, including software, and may not be used for student wages or the purchase of major equipment. The research award may be renewed for successive academic years if an overall 3.0 QPA is maintained. [Computer Science]

John '02 and Laura '04 Held Family Scholarship. Awarded to a sophomore majoring in communications or social work (majors selected on alternating years) with a minimum 3.0 GPA. Participation in extracurricular activities is preferred but not required. [Financial Aid]

Don L. and Irene M. Hesel Scholarship. Awarded to a rising junior or senior student (having earned a minimum of 60 credits) in the teacher preparation program in the College of Education and Human Services. First preference is for a student from an underrepresented population whose intention is to teach in an urban setting as demonstrated by participation in a program focused on teaching in an urban educational environment. If such intention cannot be met, the scholarship may be awarded to any student from an underrepresented population in the College of Education and Human Services. The recipient will be chosen on the basis of excellence in scholarship and leadership as demonstrated by participation in school and community activities. Financial need will also be a consideration. Should a junior student be selected, this scholarship may be renewed, provided that the criteria continue to be successfully met. [Academic and Cultural Enrichment Committee]

Dr. Alex Henderson Scholarship in Biology. Awarded to a sophomore or junior biology major who is engaged in a project addressing an issue in biology from an interdisciplinary perspective. [Biology]

The Hepler Award. Awarded to a student in the Lombardo College of Business with a minimum cumulative GPA of 3.2 who is active in Greek life, with first preference given to a member of either Delta Zeta or Sigma Tau Gamma. [Lombardo College of Business]

Mervin W. Hess Scholarship. Awarded to a student(s) interested in a health professional career or a teaching career in math or science who has a high school average of 3.0 or higher and demonstrates financial need. The scholarship is renewable for four years as long as the student(s) maintains an overall academic average of 3.0. [Admissions]¹

Richard J. Hess Memorial Scholarship. Awarded to a rising senior in psychology with good academic standing. [Psychology]

Albert, Christina and Eric Hoffman Scholarship for Humanities and Social Sciences. Awarded to a student in the University Honors College majoring in humanities and social sciences. [University Honors College]

Albert, Christina and Gregory Hoffman Scholarship for Science and Mathematics. Awarded to a student in the University Honors College majoring in science and mathematics. [University Honors College]

Alan S. and Adeline Holliday Scholarship. Awarded to a student who demonstrates scholastic ability and financial need. [Financial Aid]

The Robert Clark Hosler Scholarship in Industry and Technology. Awarded as basic full-time tuition charged by the University and continues for four years (eight semesters) following the initial award. An additional student shall be added each year so that the total number of students receiving this scholarship at any one time will not exceed four, but that the scholarship in essence will support four students while pursuing the undergraduate degree in industry and technology. The basis of this scholarship shall be academic achievement and shall be determined each year by the industry and technology faculty and the admissions office from the pool of applicants to the industry and technology program. If at any time the program in industry and technology shall be discontinued, this scholarship should continue to be awarded, but based on general academic achievement, for any major in the University and retaining the name The Robert Clark Hosler Scholarship. [Applied Engineering, Safety & Technology and Admissions]

Kathlyn Houlahan Kodaly Music Scholarship. Awarded as tuition to a full-time entering first year student who has chosen to major in music education. Recipient will be selected by the music department and chosen on the basis of performance excellence in musical skills and/or talent as demonstrated in their audition. Financial need may be taken into consideration but will not be the major criterion. [Music]¹

Hower Earth Sciences Scholarship. Awarded to a junior or senior Millersville University student with a major in the Department of Earth Sciences and who is in good academic standing. First preference to a student with a minimum cumulative GPA of 3.25. Financial aid is a consideration but not required. [Earth Sciences]

Hughes Foundation, Incorporated Scholarship. Awarded as tuition to a qualifying full-time student from Monroe County, Pa. Selected students will have a cumulative GPA of 3.0 or greater. Preference will be given to students with financial need, although need is not required. The scholarship is renewable for up to nine additional semesters, provided the student remains academically qualified and is progressing toward graduation. [Financial Aid]

James Hughes Memorial Scholarship. Awarded to an incoming first year student from the city of Philadelphia who has financial need. [Admissions]¹

R. Clinton and Dorothy Hughes and Kathryn Hughes Seaber Vocal Music Scholarship. Awarded to a first year vocal music major. May be renewed for three additional years, provided the student remains a voice music major in good academic standing and is progressing toward graduation. [Music]¹

Russell C. Hughes English Scholarships. Awarded to two incoming first year students majoring in English, for the period of time each is in good academic standing and majoring in English at Millersville University. Students must have a minimum academic average of 3.0 and a history of participation in high school publications. [Admissions]¹

Iliffe/McCaskey Scholarship. Awarded for a two-semester period to a first-year, independent undergraduate, full- or half-time student who is entering or returning to higher education. The recipient must have properly matriculated, with preference to a woman pursuing a degree. Chosen recipients will have limited access to conventional routes for obtaining student aid. This scholarship is intended to launch a nontraditional student's studies. [Admissions]¹

Jackson Family International Education Scholarship. Awarded to offset program expenses for a student pursuing a global education opportunity abroad, including, but not limited to, study abroad, internship abroad or student teaching abroad in a program sponsored by, or coordinated through, the Millersville University Office of Global Education and Partnerships (or its successor). This award will be given to a student who is from an underrepresented population and who has financial need. The recipient must be in good academic standing. Second preference will be for a student who is not from an underrepresented population, but who has financial need. [Global Education and Partnerships]

Hazel Jackson Scholarship. Awarded annually to an African-American student majoring in secondary education language arts or the humanities who is in good academic standing and demonstrates financial need. Preference will be given to students from Lancaster County. [African-American Studies]

Jackson Memorial Scholarship. Awarded to a graduate of Hempfield High School who completed junior year and attained distinguished achievement in early childhood or middle-level education. If no Hempfield graduate is eligible, the award will go to the highest ranking early childhood or middle-level education major from a high school in Lancaster County. [Early, Middle & Exceptional Education]

Jacobs Meteorology Scholarship. Awarded to a returning Millersville University student majoring in meteorology who has completed at least 15 credits and is in good academic standing. First preference to a student with a minimum cumulative GPA of 3.25. Financial aid is a consideration but not required. [Meteorology]

Michael Jamanis and Frances Veri Scholarship. Awarded to a student majoring in music who has financial need. [Music]

Charles B. Johnson Memorial Scholarship. Awarded to a student who is a junior, senior or graduate student majoring in social work or psychology. First preference is to a student who plans to pursue a career in a mental-health profession with direct patient contact. [Financial Aid]

The Willa Dean Johnson Memorial Social Work Scholarship. Awarded to a student with a minimum 2.0 GPA. First preference will be to a student studying in the School of Social Work. [Social Work]

William Malcolm Jordan Earth Sciences Scholarship. Awarded to an incoming first year student planning to major in geology or in earth sciences with a geology emphasis. Preference is to be given to graduates of Penn Manor High School. [Admissions]¹

Kappa Alpha Psi Fraternity, Inc. (Lambda Tau Chapter) Memorial Scholarship. Awarded to students of color with a minimum grade point average or 3.0 who have demonstrated a commitment to service and student leadership. [Financial Aid]

Keever Biology Research Scholarship. Awarded to an undergraduate biology major to train the recipient in the methods and values of scientific research. Preference is given to those concentrating in botany. [Biology]

Esther Kilheffer Scholarship. Awarded to worthy students as determined by the University president or his/her designee. [Financial Aid]

Beatrice M. Killough Scholarship for Spanish Studies. Awarded to an entering first year student enrolled in the Spanish or Spanish education curriculum. The award may be renewed for up to seven additional semesters, provided the student maintains a 3.5 GPA in Spanish and a 3.0 overall GPA. [Admissions]¹

Joyce Denelsbeck King '83 Scholarship for Women in STEM. Awarded to an incoming first year or current female student majoring in biology, chemistry, computer science, earth sciences, mathematics or physics, excluding all areas of teacher preparation. First preference should be given to a female from Quakertown Senior High School, second preference to a female from Abington Senior High School, third preference would be to a female student with a major in chemistry and fourth preference would be to a female student in an eligible degree program. Financial need is not a requirement. The scholarship is not automatically renewable, and eligibility should be reviewed each year based on preferred criteria. [Financial Aid]¹

Andrew and Clara Kissh Academic Scholarship. Awarded to an incoming first year student, based upon the student's notable high school academic performance. The scholarship is renewable, provided the student remains in good academic standing. [Admissions]¹

Esther S. Knaub Scholarship. Awarded to a York County student, as determined by the appropriate college officials. [Admissions]

Richard G. Kokat/Andrei Georgescu Memorial Scholarship. Awarded to an incoming first year student majoring in computer science, based upon both merit and financial need. The scholarship may be renewed for seven additional semesters, provided the recipient remains in good academic standing and is approved by the faculty of his/her chosen major/discipline. [Admissions]¹

James E. Koken Science Scholarship. Awarded to a student enrolled in a science curriculum or in science education who has completed 55 credits at Millersville University by the end of the semester prior to the semester in which the scholarship is awarded. Preference is given to a chemistry major. [College of Science and Technology]

Michael Kovach Scholarship. Awarded to a student majoring in a foreign language, with first preference to a student majoring in Russian. If a student who meets the above criteria cannot be found, the award will be made to a student with a minimum 2.5 GPA who has successfully completed at least three foreign language courses at the 200 level and above, and/or plans to study abroad. [Language and Culture Studies]

H. H. and Fay Kramer Scholarship. Awarded to a rising junior who is either a math major (preferred) or secondary social studies major. Recipients must have and maintain a GPA of 3.2 or greater. This scholarship is not renewable. [Financial Aid]

David B., Ph.D., and Kathryn Millar Kraybill Scholarship. Awarded to an entering first year student from the Lampeter-Strasburg School District. Selection is based upon financial need for academic studies only, and use of the scholarship is limited to payment of tuition. The scholarship may be renewed for eight semesters or until graduation, whichever is first. [Admissions]¹

E. Kathryn Millar Kraybill '15 Scholarship. Awarded to a student with financial need majoring in education. [Academic and Cultural Enrichment Committee]

Charlotte A. and Charles J. Lafferty History Scholarship. Awarded to a student(s) majoring in history, interested in applied history, with a minimum high school average of 3.0 and is active in school or community service. The scholarship is renewable for up to seven semesters as long as the student(s) maintains an overall academic average of 3.0 or higher. Demonstrated financial need may also be taken into consideration. [History]

Landis Family International Scholarship. Awarded to a first-year, first-time international student attending Millersville University using a student visa (or current U.S. requirements at the time) who demonstrates successful completion of secondary education in his/her home country and/or provides documentation of successful completion of mandated national exams. The recipient will be proficient in the English language as determined by standardized tests (SAT/ACT/TOEFL as examples). The scholarship will be offered to a student who demonstrates financial need. [Admissions]¹

Dr. Secunderabad N. Leela Scholarship in Social Sciences. Awarded to a junior majoring in the social sciences. The recipient must have a GPA of at least 2.5 and financial need. First preference is to an underrepresented student. The scholarship is renewable, provided the student continues to meet the criteria. [College of Arts, Humanities and Social Sciences]

Richard S. Levandusky '58 Technology Scholarship. Awarded to a first year student entering any of the AEST programs, to be distributed evenly over two semesters. [Applied Engineering, Safety & Technology]¹

Harry A. '65 and Carolyn J. Lohss Physics Scholarship. Awarded to two full-time students pursuing a B.A., B.S. or B.S.Ed. in physics. If either recipient is a first year student, that individual must be in the top 20 percent of her or his high school class or have a GPA of at least 3.0 on a 4.0 scale and show evidence of strong science and mathematics skills demonstrated by class work and standardized tests. If awarded to other than a first year student, the recipient must have a CGPA of 3.0 or greater on a 4.0 scale. Financial need may be considered in selecting the recipient, but it is not to be the primary factor. With the annual approval of the physics department chairperson or designee, the scholarship may be renewed yearly for a maximum six additional semesters beyond the first year, provided the student continues to maintain a departmental and overall GPA of 3.0 or greater. [Physics]¹

Jacqueline Long French Scholarship. Awarded to an upperclassman who has demonstrated interest in the study of the French language, culture, history or art and has a minimum 3.0 GPA with demonstrated financial need. First preference will be given to a student who is majoring in French; second preference to a student who is a French minor. If a student who meets the above criteria cannot be found, the award will be made to a student with a minimum 2.5 GPA who has successfully completed at least three French courses at the 200 level and above, and/or plans to study abroad in France or in a French-speaking country. [Language and Culture Studies]

Gertrude Bettel Stoll and Esther Stoll Barlow Lowry Memorial Scholarship. Awarded to a junior early childhood education major on the basis of an empathic concern for the personal, emotional and educational needs of young children, a GPA of at least 3.0 and financial need. [Early, Middle & Exceptional Education]

Marburg Study Abroad Scholarship. Awarded to students studying abroad in Marburg. [Office of Global Education & Partnerships]

V. J. Marcellis Memorial Scholarship in Education. Awarded to a rising senior in good academic standing who intends to teach at the early

childhood or middle level. Preference will be given to a student with financial need. [Early, Middle & Exceptional Education]

Violet F. Markey Academic Scholarship. Awarded as an academic scholarship as determined by the University president or designee. [Financial Aid]

The Martin Endowed Scholar. Awarded to a student demonstrating financial need and maintaining a 3.0 academic average; may be renewed for eight semesters. [Financial Aid]

McCollough Family College of Arts, Humanities and Social Sciences Scholarship. Awarded to a junior or senior student pursuing a major in the College of Arts, Humanities and Social Sciences with demonstrated financial need and who is in good academic standing. [College of Arts, Humanities and Social Sciences]

McCollough Family College of Education and Human Services Scholarship. Awarded to a junior or senior student pursuing a major in the College of Education and Human Services with demonstrated financial need and who is in good academic standing. [College of Education and Human Services]

McCollough Family College of Graduate Studies and Adult Learning Scholarship. Awarded to a full-time graduate student with demonstrated financial need and who is in good academic standing. [College of Graduate Studies and Adult Learning]

McCollough College of Science and Technology Scholarship. Awarded to a junior or senior student pursuing a major in the College of Science and Technology with demonstrated financial need and in good academic standing. [College of Science and Technology]

Dr. William B. McIlwaine Scholarship in Earth Sciences. Awarded to a student majoring in earth sciences who has completed 60 semester hours of academic credit at Millersville University with a GPA of 3.2 or higher and demonstrates financial need. [Earth Sciences]

Francine G. McNairy and Gladys B. McNairy Scholarship for Civic and Community Engagement. Awarded as tuition to no more than two students who are either African American or Hispanic/Latino and who are full-time undergraduates. Recipients must have a minimum QPA of 2.5 with 30 or more credits, evidence of community/volunteer service and financial need. Preference will be given to students with a permanent residence in Lancaster, Philadelphia, York or Reading, as listed herewith in priority order. The recipient(s) will be selected by the African-American/Latino Alumni Scholarship selection committee based on the results of an application process. [African-American/Latino Alumni Scholarship Committee]

MEDAL Fund Academic Scholarship. Established by Millersville University employees and awarded to incoming first year students on the basis of academic merit, and is renewable annually for those who maintain established academic standards. [Admissions]¹

Joseph and Anita Meier Mathematics Scholarship. Awarded as tuition to an entering first year student majoring in mathematics. The student must be in the top 10 percent of her/his graduating class or have an SAT math score of at least 600, and have a high school cumulative GPA of at least 3.5 on a scale of 4, or comparable if a different scale is used. Financial need may be a consideration but does not have to be the determining factor. The scholarship may be renewed, provided a recipient remains a mathematics major and achieves at least the following: first year CGPA

= 3.0 overall and in math; sophomore CGPA = 3.2 and math = 3.25; junior CGPA = 3.3 and math = 3.35. [Mathematics]¹

Dr. Dale H. Messerschmidt Technology Education Scholarship. Awarded to the full-time sophomore with the highest GPA at the end of the first semester of their sophomore year in the technology education program. [Applied Engineering, Safety & Technology]

Robert S. and Helen R. Metzler Scholarship in Education. Awarded to a student enrolled in the early childhood or middle-level curriculum who has completed 45 credits at Millersville University. Chosen by the department on the basis of financial need and exceptional potential as an elementary teacher. [Early, Middle & Exceptional Education]

Sal Micciche Music Scholarship. Awarded to an incoming first year or returning student majoring in music performance, with primary focus on the clarinet. The recipient will be required to audition. If no student meets this criteria, the second preference would be for a student majoring in music education. [Music]¹

Miller-Averett Geography Scholarship. Awarded to a full-time junior or senior geography major, with first preference to a student with a concentration in environmental science and a desire to hold a professional position that will advance work on the impacts of and/or adaptation to climate change. The recipient must be in good academic standing with a cumulative GPA of 3.25 or higher. In addition, financial need may be a consideration but is not required. This award is renewable. [Geography]

Millersville University Alumni Association Scholarship. Established by the Millersville University Alumni Association. Awarded to the student with the highest GPA who has earned more than 57 but fewer than 72 credits upon completion of the spring semester. [Alumni Engagement]

Millersville University Alumni Association Legacy Scholarship. Awarded to an incoming first year student who has ranked in the top 10 percent of his/her high school class and has an outstanding record of extracurricular activities and leadership. [Admissions]¹

Millersville University Business Associates Scholarship. Awarded to female nontraditional students from Lancaster County who are enrolled in the continuing education program. Students must be enrolled for a minimum of six credits with a GPA of 2.5 or better. The scholarship is renewable until the student has completed 15 credits in the continuing education program. [Millersville University Business Associates]

Millersville University Lampeter-Strasburg Excellence Scholarship. Awarded to an incoming first year student who attended high school in the Lampeter-Strasburg School District and who has a high school overall GPA of 3.5 or higher with demonstrated financial need. [Admissions/Financial Aid]¹

Millersville University Women's Giving Circle Dorothy L. Connolly Scholarship. Awarded as tuition to a sophomore, junior or senior female student in good academic standing with a CGPA of 2.5 or greater. First preference is to be given to a nontraditional student (currently defined by Millersville University as a student age 25 or over). The scholarship is to be awarded as the result of an application process based on a combination of academic progress, financial need and a personal statement. Financial need is a consideration but is not required. The scholarship is renewable for a maximum of three years, provided the recipient maintains a CGPA of 3.0 or higher. At the discretion of the selecting body, more than one recipient may be selected. The recipient(s)

will be selected through an application process by the Women's Giving Circle scholarship selection committee. [Financial Aid]

David R. Morris '01 and Family Scholarship. Awarded to a student with a major within the Lombardo College of Business. Financial need is a consideration but not required. This award is renewable. [Lombardo College of Business]

Charles E. Muench and Betty F. Muench Scholarship in Communications and Theatre Arts. Awarded to an entering senior majoring in communication and theatre arts who has demonstrated financial need, has a minimum overall academic average of 3.0 and exemplifies commitment to and excellence in the discipline of communications. [Communication & Theatre]

Kenneth G. and Elisa G. Munro Education Scholarship. Awarded to a student pursuing a Bachelor of Science in Education (B.S.E.) with demonstrated financial need. First preference will be given to a nontraditional, first-generation college student. Second preference will be given to a first-generation student or a nontraditional student. [Educational Foundations]

Philip C. and Karen Ashkar Murley '63 Freshman Scholarship. Awarded to an entering, full-time first year student from Pennsylvania majoring in either mathematics or physics. Recipient is chosen on the basis of excellence in scholarship (demonstrated by GPA and classes undertaken, as well as nationally recognized test scores) and involvement in school/community organizations. Financial need may be taken into consideration but shall not be a major criterion. The scholarship may be renewed for the sophomore year with an earned total of 30 credits and a GPA of 3.3 or higher. This scholarship is not intended for education majors. [Admissions]¹

Philip C. and Karen Ashkar Murley '63 Science Scholarship. Awarded to a rising senior from Pennsylvania majoring in either mathematics or physics. The recipient will have an overall grade point average of 3.6 or higher and a grade point average in the major of at least 3.75 with demonstrated performance in courses in the major. The recipient must also be enrolled as a full-time student and registered for a minimum of 15 credits in the semester in which s/he applies. The recipient is chosen on the basis of excellence in scholarship; is an active participant in department projects (e.g., intern); is of superior research potential (e.g., evidence of successful research efforts); and is involved in organizations and activities outside the major. An application is required. Financial need may be taken into consideration but shall not be a major criterion. This scholarship is not intended for education majors. [College of Science and Technology]

Music for Everyone Award. Awarded as tuition to full-time students who have chosen to major in music education. Selection based on GPA, performance in field teaching and Music 171 (Introduction to Music Education), and demonstrated success in peer teaching. Financial need may be taken into consideration but will not be a major criterion. Student is expected to teach for three hours each week of the semester in collaboration with music teachers in School District of Lancaster schools (K-8 music program). [Music]

Music for Everyone - Gary S. Miller Percussion Scholarship. Awarded as tuition to one full-time music student (\$2,000) who has chosen to major in percussion. The student will be expected to teach for a minimum of 25 hours over the course of the semester working with MFE's director of community percussion. Selection is based on GPA and is determined by

the music department. Financial need may be taken into consideration but is not required. [Music]

Music for Everyone MB Technology Scholarship. Awarded as tuition to two full-time students (\$2,000 to each individual) who teach at the Boys and Girls Club of Lancaster, overseeing their music production program. Recipients will be selected by the music department and chosen on the basis of GPA, performance in field teaching and Music 171 (Introduction to Music Education), and demonstrated success in peer teaching. Financial need will be taken into consideration but will not be a major criterion. The student will be expected to implement programming, creating measurements of success, and possibly evaluate success of programming (if able to facilitate entire curriculum based on time). [Music]

Music for Everyone Music Business Technology Award. Awarded as tuition to six full-time students who have chosen to major in music education. Recipient will be selected by the music department and chosen on the basis of GPA, performance in field teaching and Music 171 (Introduction to Music Education), and demonstrated success in peer teaching. Financial need may be taken into consideration but will not be the major criterion. The student will be expected to teach for three hours each week of the semester in collaboration with a music teacher in the School District of Lancaster schools (K-8 music program). [Music]

Edna H. Myers Mathematics Scholarship. Awarded to an incoming first year student majoring in mathematics. [Mathematics]¹

National Penn Bank Scholarship. Awarded to an entering student in the bank's service area, with first preference to employees and their families of National Penn Bank. Scholarship selection will be based on academic average and community activities. The scholarship is renewable for three additional academic years, provided the student maintains a GPA of 3.0 or greater. [Admissions]¹

John David Neider Memorial Scholarship. Awarded to a junior who has made a significant contribution to the success of musical or dramatic performing arts at Millersville and has a GPA of at least 2.0. [Communication & Theatre]

Neimeyer-Hodgson Student Research Grant. Awarded to a student attending Millersville University in pursuit of the baccalaureate degree. [Alumni Engagement]

Stanley M. Nelson Scholarship. Awarded to a full- or part-time graduate student in the field of clinical psychology. The award is renewable for up to three years, and financial need is a consideration. A personal statement and two letters of recommendation are required. [Psychology]

Paul H. Nichols Scholarship. Awarded to a junior earth sciences major, who is chosen on the basis of outstanding motivation and academic excellence. [Earth Sciences]

Joseph P. and Marianne S. '70, M'74 Nolt Family Scholarship. Awarded as tuition for thesis credit courses (up to 6 credits) and as a grant to support applied research associated with that same thesis. Thesis credit courses for the tuition portion may include thesis-related independent study courses. Research grant projects are to be of an applied and scholarly nature, with an intended outcome of an original, practical contribution to the field of education. The initial recipient will be a rising junior with a minimum CGPA of 3.0 pursuing an education degree in early childhood or middle-level education, although that may be expanded to additional candidates after the first year. Financial need may be considered but is not a required criterion. First preference is to a qualifying male student.

Unused grant funds at the completion of the research project will be returned to the endowment principal. [University Honors College]

Joyce W. Nolt '63 Snapper Newspaper Scholarship. Awarded to a sophomore, junior or senior student editor of The Snapper newspaper staff. Recipient must be in good academic standing. Financial aid is a consideration but not a requirement. The recipient will be awarded and/or renewed by the president or his/her designee. [Snapper Advisor]

Nontraditional Student Scholarship. Awarded to an independent full-time or part-time undergraduate student who is returning to school, has earned at least 15 credits at Millersville University and has demonstrated financial need. [Financial Aid]

Joseph Oberly Jr. Memorial Family Music Award. Awarded to an incoming first year or sophomore student in good academic standing in the music department. First preference should be given to a student with focused training on the accordion, keyboard, piano and/or guitar. [Music]¹

The John and Renee Genbauffe O'Leary Scholarship in Science Education. Awarded to a student majoring in the early childhood program, with a keen interest in science. Criteria for selection are prior academic performance, weighted significantly by the student's record of extracurricular/community service, and financial need. [Early, Middle & Exceptional Education]

Fred E. Oppenheimer Scholarship. Awarded to a first year foreign language major based on academic excellence, dedication to foreign language study and financial need. [Admissions]¹

James C. Parks Scholarship in Botanical Research. Awarded to an incoming first year student with an interest in botany. The recipient of this scholarship is expected to develop a botanical research project, in collaboration with a faculty member, that will lead to the presentation of research results in the Dr. James C. Parks Memorial Lecture in the recipient's senior year. [Biology]¹

Dorothy J. Patterson English Scholarship. Awarded to a rising junior majoring in the English teacher preparation program and working toward a Bachelor of Science in English education with a minimum GPA of 3.0 in both the major and overall. The scholarship is renewable for two additional semesters, provided the student continues to meet the eligibility requirements. [English]

Mark W. Phillips Education Award. Awarded to a senior with a minimum GPA of 3.3 and a major in the College of Education and Human Services or College of Arts, Humanities and Social Sciences, with an emphasis on art. [Financial Aid]

Patricia E. Pillar Scholarship. Awarded to a sophomore majoring in business administration with a minimum GPA of 2.5 and demonstrated involvement in campus extracurricular activities and/or community service. [Lombardo College of Business]

Audrey Pomponi Memorial Scholarship. Awarded annually to a sophomore with a CQPA of at least 2.5 who demonstrates financial need. Student must have enrolled as part of the PACE program (if in existence at the time of entry). If the PACE program is discontinued, initial selection will be a sophomore with financial need and a CQPA of at least 2.5. The scholarship may be renewed for two additional years. To renew, the recipient's CQPA must, at the time of selection, have improved by at least .15 points over the prior year until or unless the CQPA reaches 3.25, when renewal will be automatic. [Financial Aid]

Predmore-Cornogg Scholarship. Awarded to a rising junior or senior majoring in geography who demonstrates a strong commitment to the discipline of geography, with first preference to a student with an interest in land planning. The recipient must be in good academic standing with a cumulative GPA of 2.5 or higher and demonstrate financial need. Renewable in the subsequent year. [Geography]

Sydney Radinovsky Scholarship. Awarded to an entering first year biology major with an interest in biological research. The scholarship recipient will develop a research project in collaboration with a faculty member that will lead to the presentation of research results in the student's senior year. The student must rank in the top 10 percent and/or have a high school GPA of 3.5 or above and have scored 1100 or higher on his/her SAT. The scholarship may be renewed for up to three additional years, contingent upon the student's continued progress in the biology course curriculum and maintenance of a GPA of 3.0. [Biology]¹

Dr. R. Edward Rajaseelan Excellence in Chemistry Scholarship. Awarded to a rising sophomore, junior or senior student majoring in chemistry. The recipient will have an overall grade point average of 3.5 or greater and at least 45 earned credits. The student should also have demonstrated experience participating in student-faculty research or an extracurricular activity related to STEM. An application is required. The scholarship is not automatically renewable, but past recipients may reapply. Financial need may be taken into consideration but shall not be a major criterion. [College of Science and Technology]

Ratzlaff Scholarship. Awarded to an incoming biology major. The scholarship may be renewed for three additional years if the student remains a biology major and maintains a GPA of 3.0 or greater. [Biology]¹

Irene Renshaw Scholarship for Education. Awarded to a first year student majoring in early childhood education (grades PreK-4) with a minimum GPA of 2.75, demonstrated financial need and involvement in community/volunteer service and/or student leadership. [Early, Middle & Exceptional Education]¹

Philip Ressler–Comcast Cable Memorial Scholarship. Awarded to a sophomore student from Lancaster County entering the junior year. Recipient must have core curriculum in political science, demonstrate service to the community and be in financial need. [Government & Political Affairs]

Rettew Associates Scholarship in Geology. Awarded to an outstanding student majoring in earth sciences (geology) with a GPA of 3.0 or higher. [Earth Sciences]

Allison Rickert Memorial Scholarship. Awarded to a student from any class year with a minimum cumulative GPA of 3.0 or greater who contributes to the George Street Carnival or the Creative Writer's Guild. [Communication & Theatre]

The Helen C. Riso/Commuting Student Scholarship. Awarded to a commuting student with demonstrated financial need and who is in good academic standing. [Financial Aid]

Kyle Rodgers Scholarship. Awarded to a student majoring in psychology with demonstrated financial need from the greater Lancaster region. The recipient will have a minimum GPA of 3.0. The award is renewable for three additional years, provided the student remains in good academic standing. [Admissions]¹

Rodriguez Family Award. Awarded to an undergraduate student who is the mother of a child or children (under 18) at the time of FAFSA

application. First preference will be given to a mother under age 30 in the School of Social Work. Second preference will be given to a mother of any age in the School of Social Work. Finally, if none exists within the School of Social Work, the award will be given to a mother from the College of Education and Human Services. Student must be in good academic standing. Financial aid is a consideration but not required. Current recipient is eligible to reapply, but award is not automatically renewable. FAFSA must be on file. [Social Work]

Jane Rohrer Scholarship. Awarded to a student majoring in music, with emphasis in piano or voice. First preference will be to a student of an underrepresented population. [Music]

Lina Ruiz y Ruiz Memorial Scholarship. Awarded to a junior student majoring in Spanish who, in the judgment of the professors of the Spanish section, has completed work in the field of Spanish studies. [Language and Culture Studies]

Bernice R. Rydell Scholarship for Excellence. Awarded as a four-year scholarship to an underrepresented student graduating in the top 10 percent of his/her high school class and who also has a record of community involvement. The scholarship will be renewable, provided the student maintains a minimum 3.0 grade point average and continuous involvement with student government, or internal or external community activities. [Admissions]

Florence Wilson Ryder '36 Scholarship. Awarded to a rising sophomore majoring in education with a minimum GPA of 3.0 who has demonstrated financial need. The scholarship is renewable for two additional years. [Academic and Cultural Enrichment Committee]

Richard Sasin Scholarship in Chemistry. Awarded to a student majoring in chemistry who is in good academic standing. Selection is based upon financial need and/or participation in intercollegiate sports. [Chemistry]

James W. and Sally C. Saxton Scholarship in Pre-Law. Awarded to a student interested in attending law school. The scholarship is renewable for up to six additional semesters, and selection and continuation are based on academic achievement (3.0), community involvement and financial need. First preference will be given to a student who is a member of the Lancaster YMCA. [Government & Political Affairs]

Dr. Robert D. and Roma J. Sayre Excellence in American History Scholarship. Awarded to an academically talented rising senior with financial need who is majoring in history, has taken at least three American history courses at the 200 level or above at Millersville, and has excelled in those classes. Criteria to be considered will be grades, scholarship demonstrated through written work, in-service experience and class participation. [History]

Dr. Nathan C. Schaeffer Memorial Scholarship. Awarded to a resident of Lancaster County who demonstrates financial need and who is enrolled in the final year of an undergraduate program or in a graduate program in education and maintains a 2.5 GPA. [Financial Aid]

Dr. Charles Scharnberger Geology Scholarship. Awarded to one or more junior or senior students majoring in geology and in good academic standing. First preference to a student(s) with a minimum cumulative GPA of 3.25. Financial aid is a consideration but not required. The scholarship is renewable at the discretion of the dean but not automatically renewed. Recipient will be selected by the Dean of the College of Science and Technology, or his/her designee, in consultation with the geology faculty. [Earth Sciences/Geology]

Hazel Rork Schmuck Alumni Scholarship. Awarded to a full-time secondary education major with an overall 3.0 GPA who has completed at least 30, and no more than 60, credits prior to the fall semester in which the award is made. [Alumni Engagement]

Clarence Schock Foundation Scholarship. Awarded as four-year scholarships to first year students on the basis of high school records, competitive examination, personality and financial need. Only high school graduates from counties served by SICO Oil Company are eligible. [Financial Aid]

Edward L. '64 and Kathy H. Schoenberger '69 Scholarship. Awarded to an incoming first year student with a minimum GPA of 2.75 who attended a high school in Lancaster County, including but not limited to the School District of Lancaster. The scholarship is renewable up to three times for up to a total of four years, provided that the student is making progress towards graduation and continues to earn a minimum 2.75 GPA. First preference will be given to a student with financial need. [Admissions]¹

Search for Excellence Scholarships. Awarded to entering first year students whose class rank places them in the top 10 percent of their high school graduating class or who possess a math/verbal minimum combined Scholastic Assessment Test (SAT I) score of 1100. Renewable annually to those who maintain satisfactory academic standards. [Financial Aid]¹

Secondary Mathematics Education Scholarship. Awarded to a student with a cumulative GPA of 3.35 or higher who is majoring in secondary mathematics education. An application with essay is required along with a letter of recommendation from a professor. [Math]

Isaac F. Seiverling/Charles A. Rutter Scholarship in Mathematics. Awarded to an entering first year student whose declared major is mathematics or mathematics education. Selection is based primarily on previous academic performance and secondarily on financial need. [Admissions]¹

Ellen Currier Sellers Scholarship for Organ Performance. Awarded to an incoming first year or current University student who is a keyboard major, with preference given to music majors/minors studying organ. Renewable, provided the student continues to progress in organ study, maintains at least a 3.0 GPA and remains a music major/minor. [Music]¹

Gray H. and Ellen C. Sellers Merit Scholarship in Business Administration. Awarded to a junior majoring in business administration who will have successfully completed 90 or more credit hours prior to the semester to which the award is credited and whose extracurricular activity is related to business administration. The scholarship is to be awarded to only one student annually. [Lombardo College of Business]

The Shaar String Scholarship. Awarded to a sophomore or junior music education student who has demonstrated progress in the playing of a string instrument, shown an interest in the teaching of strings, and contributed to the musical enrichment of the University. [Music]

Barry '67 and Judy '67 Shafer Elementary Teacher Scholarship. Awarded to a student pursuing a B.S.E. degree in early childhood education or an M.Ed. degree in elementary education and who is a member of the Millersville football team. If no student meets these criteria, the award will be given to a student pursuing any B.S.E. or M.Ed. degree and who is a member of the Millersville football team. [Early, Middle & Exceptional Education]

Sharp Team Scholarship. Awarded to a junior or senior with a minimum cumulative GPA of 3.0 who demonstrates exceptional leadership, professionalism and enthusiasm for Millersville University. The student serves as a member of the SHARP team (Students Helping Admissions Recruit Prospects). [Financial Aid]

Dr. Sylvia Shellenberger '71 & '74 Latina/o Scholarship. Awarded annually to a rising junior or senior Latina/o student with a cumulative GPA of 3.0 or greater. The scholarship is renewable, provided the student remains in good academic standing. [Financial Aid]

Margaret K. Shenk Nursing Scholarship. Awarded to nursing students from Lancaster County who successfully complete two semesters of the nursing degree program. Financial need shall be considered. [Nursing]

N. E. Shoemaker Biology Teaching Scholarship. Awarded to the sophomore secondary education biology major who has earned the highest GPA. [Biology]

Amos L. Shopf Scholarship for Lancaster County Students. Awarded to a first year student who is a graduate of a secondary/high school in Lancaster County, Pa. Based on merit performance and financial need. May be renewed for three additional years, provided the student remains in good academic standing. [Admissions]¹

Sigma Tau Gamma Scholarship in Memory of H. Craig Lewis. Awarded to the active Sigma Tau Gamma Brother with the highest cumulative GPA for the spring and fall semesters of each calendar year. The active Brother must take a minimum of 12 credit hours each semester and be in good standing with the fraternity. [Financial Aid]

Dalton E. Smart Humanitarian Scholarship, Industry and Technology Department. Awarded to a full-time junior or senior industry and technology student making a significant contribution to the education of classmates through positive interactions, thought-provoking questioning and insight into the impact of technologies on humans. The recipient must maintain a 2.5 overall GPA. [Applied Engineering, Safety & Technology]

Brandon R. Smith First-Gen Scholarship. Awarded to an incoming first year, first-generation college student and has a minimum GPA of 3.2 when applying to Millersville as a senior in high school. First-generation college student is a student whose parents do not have a bachelor's degree. Student must have financial need and be eligible to receive the Pell Grant and/or FAFSA each year. The award is renewable for all four years a student attends Millersville, as long as they maintain a GPA of 3.0 after each semester. If a GPA of 3.0 is not upheld, the renewable award will not be continued to that student. [Financial Aid]¹

The Eva Mae and James Edward Smith Scholarship in African-American Studies. Awarded to a student who is minoring in African-American Studies, with a minimum GPA of 2.5 who is a member of any class year and has demonstrated financial need. Recipient will be selected based on an application process which includes an essay on "Why African-American Studies is Important" or similar topic, and will be chosen by the Director of African-American Studies or his/her successor, in consultation with the instructors of African-American Literature-African American History. [Financial Aid]

Dr. Mary Alice Smith Scholarship. Awarded to an incoming student enrolled in the early childhood, middle-level or special education curriculum at Millersville University. The scholarship is to be used

for tuition and may be renewed for up to seven additional semesters, provided the recipient remains in good academic standing. [Admissions]¹

Elizabeth Smithgall Scholarship. Awarded to students who are ranked in the top 10 percent of their class, demonstrate financial need and have a native language other than English. [Admissions]¹

Blanche Henninger Snyder '18 Scholarship. Used to support a scholarship in a curriculum as determined by the president of the University. Recipient will be selected by the president or designate. [Financial Aid]

Sophomore Athletic Coaching Minor Scholarship. Awarded to a sophomore with a 2.5 GPA or above who is in the athletic coaching minor. [Financial Aid]

Dr. Paul G. Specht Occupational Safety and Environmental Health Alumni Scholarship. Awarded as tuition to a student who has completed 55 or more credits at the time of selection, with 12 of those credits being within the major; has a 3.0 GPA within the major and at least a 2.5 GPA overall; and who has demonstrated initiative and leadership skills (ASSE, AIHA, LCISC, community service or volunteerism may all serve to demonstrate initiative and leadership); or who has a unique background or experience that distinguishes the student within the discipline. [Applied Engineering, Safety & Technology]

Carroll J. and Cheryl A. Staub Scholarship. Awarded to a full-time sophomore or junior education or computer science major who has a minimum cumulative GPA of 3.0. The student should also have demonstrated community/volunteer service or is working while enrolled at Millersville University. Preference given to a graduate from a Lancaster County high school. In addition, financial need may be a consideration.

George F. Stauffer Scholarship. Established by Dr. George F. Stauffer and Lelia M. Stauffer. Awarded to a student who has completed the sophomore or junior year and has demonstrated academic excellence in a physical science major. [College of Science and Technology]

Steinman Communication Scholarships. Awarded to full-time undergraduates in good academic standing who have completed at least 15 but not more than 100 credits, have made outstanding contributions to campus communications and indicate an intention to continue to serve in a capacity that will advance campus communications. [Communication & Theatre]

Steinman Printing Upperclass Scholarship. Awarded to a full-time junior or senior graphic communication or technology education major with a demonstrated performance in graphic communication and a 3.0 GPA or above in the major. In the event the graphic communication or technology education major ceases, the scholarship is to be awarded to a student studying within the Applied Engineering, Safety & Technology department who otherwise meets the criteria [Applied Engineering, Safety & Technology]

Nicholas W. Stephens Memorial Scholarship. Awarded to an incoming first year student from the School District of Lancaster, Pa. The scholarship may be renewed for seven additional semesters, provided the student maintains an acceptable academic standing. [Financial Aid]¹

Richard W. Stewart Scholarship. Awarded to a child of an employee of R.R. Donnelley & Sons, or its successor, Lancaster, Pa. Recipient must be a full-time undergraduate; it is renewable up to a maximum of eight semesters of continuous enrollment. To renew, the student must have a 2.5 cumulative GPA and maintain full-time enrollment. Only one

dependent per family shall ever be eligible to be the recipient of the scholarship. [Admissions]¹

Clyde S. and Pauline F. Stine Scholarship. Awarded annually to a resident assistant who is a member of the junior class and who has demonstrated outstanding service to resident life. [Housing and Residential Programs]

Drs. George F. and Helen A. '64 Stine Sociology Scholarship. Awarded to an outstanding sociology major who is a rising junior with a CGPA of at least 3.0 and an overall CGPA of 2.5. [Sociology/Anthropology]

Drs. Helen A. '64 and George F. Stine Freshman Scholarship. Awarded annually to an admitted first year student with a high school CGPA of at least 2.5 who attended at least two years of, and is a graduate of, Solanco School District, Lancaster County, Pa. Preference is given to a qualifying student with financial need. [Admissions]¹

Dr. Helen Asbury Stine Freshman Scholarship. Awarded annually to an admitted first year student with a high school cumulative grade point average of at least 2.5 and is a graduate of Solanco School District, Lancaster County, Pa. The student is required to have resided within the Solanco School District for no fewer than three years. [Admissions]¹

The Christina Pavlick Strong '91 Scholarship for Success. Awarded to a student with a minimum 2.0 GPA. First preference will be to a student currently or formerly in the foster care system. Second preference would go to a student from the College of Science and Technology majoring in marine biology or environmental biology. Preference will also be given to a student with financial need. This award is available to incoming first year students and past recipients in their senior year. An application is required. [Financial Aid]

Susquehanna Bancshares, Inc., Scholarship. Awarded to a full-time, first year student who is an employee or dependent of an employee of Farmers First Bank or a Susquehanna Bancshares affiliate. The recipient is chosen based on high school GPA and activities, college entrance test scores and a letter from a senior bank administrator identifying the individual as an employee or employee dependent. Financial need may be considered but is not required. If no bank-affiliated candidate applies, the scholarship will be awarded to an entering first year business or economics major. The award is not renewable. [Admissions]¹

Susquehanna Engineering & Manufacturing Society—Gravell Scholarship. Awarded to a first year student enrolled in an industry and technology program, in either the associate or bachelor's degree program, with a strong commitment to the major. [Admissions]¹

Susquehanna Litho Club Scholarship. Awarded to a full-time junior or senior industrial technology, graphic communication or technology education major with a demonstrated performance in graphic communication and a 3.0 GPA in the major. [Applied Engineering, Safety & Technology]

Harry Symons Business Administration Scholarship. Awarded to a student majoring in business administration who has a 3.2 high school academic average and a record of community service. The scholarship is renewable for no more than four years, and the student must maintain an academic average of 3.0. Financial need may be taken into consideration in awarding the scholarship. [Admissions]¹

Nadine Thomas Journalism Scholarship. Awarded to a third- or fourth-year female journalism student. The recipient will be selected by a faculty committee from the English department. [English]

Gail Thomson/Penn Manor Scholarship. Awarded to an admitted first year student who is a graduate of Penn Manor High School, Millersville, Pa., who has demonstrated financial need. [Admissions]¹

Richard Cecil Todd and Claudia Pennock Todd Merit Scholarship. Awarded to an entering first year student and renewable for a period of four years. The purpose of this scholarship shall be to attract and retain intellectually brilliant and/or exceptionally artistically talented students. [Admissions]¹

Richard Cecil Todd and Claudia Pennock Todd Student Loan and Financial Aid Scholarship. Awarded to support students in need of financial aid through scholarships and/or loans. [Financial Aid]

Phi Sigma Pi Joseph M. and Dorothy M. Torchia Scholarship. Established by the Sigma Chapter of Phi Sigma Pi Honor Fraternity and awarded to a chapter member who has demonstrated high scholarship, outstanding leadership and all-around service to the fraternity. [Phi Sigma Pi]

Mr. and Mrs. Joseph A. Tryon Scholarship. Awarded to a student majoring in music. [Music]

Yvonne and Sandra L. Turchi Biochemistry Scholarship. Awarded as a tuition scholarship to a rising senior biochemistry major who has completed a minimum of 90 credits by the end of the junior year and who is in good academic standing (cumulative CGPA of 3.0 or above), who has earned a B or better in CHEMISTRY 326: Biochemistry I, and who demonstrates financial need. [Chemistry]

UGI Utilities, Inc., Community Safety Scholarship. Awarded to a junior or senior working toward an undergraduate degree in emergency management. First preference given to a student who resides in one of UGI's 45 counties of service. Second preference is a student who is an active volunteer in the emergency services. Financial aid is a consideration but not a requirement. Scholarship is not automatically renewable. [CDRE]

United States Steel Scholarship in Business Administration. Awarded to a junior business administration major who has the highest GPA in courses taken within the department and who has demonstrated outstanding ability and dedication to the study of business. [Lombardo College of Business]

Dr. Kay Vandergrift '62 and Dr. Jane Hannigan Scholarship for Women. Awarded to a nontraditional (23 years of age or older, part-time or full-time) female student. The scholarship is renewable for eight semesters, provided the student maintains a minimum 3.0 GPA. [Financial Aid]

Thomas G. "T. J." Versprille Memorial Scholarship. Awarded as tuition to a student in good academic standing with a CGPA of 2.7 or greater. First preference is for a male student who is a member of the cheerleading squad; secondary preference is a student who is majoring in political science and participating in intercollegiate athletics; the alternate choice is a qualifying student majoring in political science. The scholarship may be renewed if the student continues to meet the criteria. [Director of Intercollegiate Athletics]

Helen Spahr Walker '43 Education Scholarship. Awarded to an early childhood or middle-level education major in good academic standing who has passed the Praxis I and received the required clearances (Act 34, Act 151 and FBI record check). The scholarship may be renewed up to three years, provided the student remains within the major in good academic standing. [Early, Middle & Exceptional Education]

Joseph E. Walker American History Scholarship. Awarded to a worthy junior who intends to teach American history on an elementary,

secondary or college level. Secondary consideration is given to a junior history major who excels in American history. [History]

Dr. Samuel P. Wallace '41 Scholarship. Awarded to a rising junior or senior education major with financial need and a cumulative GPA of 3.0 or greater. First preference is given to a student who intends to teach in mathematics; second preference to teach science; third to teach other subjects. [Academic and Cultural Enrichment Committee]

Walstrum Leadership Scholarship. Awarded to a rising sophomore, junior or senior in good academic standing who has demonstrated outstanding leadership during their time at Millersville. The selected individual will have shown their leadership through their actions and accomplishments in one of the following areas: academics, athletics, campus organizations, professional development activities or other activities that impact their time at Millersville, as evidenced in the application. Financial need is a consideration but is not required, and the scholarship is renewable if the recipient continues to meet the criteria. An application is required. [Student Affairs]

Liselotte R. Wehrheim Scholarship in Nursing. Awarded to a nontraditional nursing student who, having completed a registered nursing program elsewhere, enrolls at Millersville University with the intent to receive a Bachelor of Science degree and practice nursing upon graduation. Eligible applicants are to have unusual or special circumstances affecting the completion of their education, such as simultaneously supporting or caring for his/her parents, children or a spouse. [Nursing]

Irwin Weinhold Music Scholarship. Awarded to at least one student who is an active participant in the music program. First preference is to those majoring in music. The award is renewable and may be received for a total of eight semesters, provided the student remains in good academic standing and involved in the music program. [Music]

Gerald S. Weiss Chemistry Scholarship. Awarded to a chemistry major who has demonstrated financial need and superior academic achievement in CHEM 251 Inorganic Chemistry I, a required course in inorganic chemistry for majors in the ACS-certified program leading to the Bachelor of Science degree in chemistry. [Chemistry]

Jason Wicht '98 Marketing Scholarship. Awarded to an incoming first year or returning sophomore, junior or senior student with a major in marketing. Financial aid is a consideration but not a requirement. This scholarship is renewable. [Marketing]¹

Wickersham Memorial Scholarship. Awarded to the top-ranking junior for excellence of scholarship and exemplary character. [Honors and Awards Committee]

John G. Williams '64 Study Abroad Scholarship. Awarded as tuition for a student participating in a global education experience, including but not limited to a year abroad, semester abroad, winter and summer session programs, internship abroad and student-teaching abroad, sponsored by or coordinated through the Millersville University Office of Global Education and Partnerships (or its successor). This award will be given to a student who is a junior or senior with demonstrated financial need. First preference will be to a student majoring in the industrial technology education program. Second preference will be for a secondary education student. If neither first nor second preference can be met, a student majoring in education for middle-level (grades 4-8) or early childhood education (PreK-4) shall be selected. The recipient must be in good academic standing. [Global Education and Partnerships]

Robert F., Louise G. and Joan M. Williams Scholarship. Awarded to a junior education student concentrating in history. Awarded on the basis of prior academic performance. The recipient should best exemplify love of learning, courage, determination, honesty and a sense of humor. [History]

Stephen '73 & Linda '73 Williamson Math Scholarship. Awarded to a sophomore, junior or senior student with a major in the Department of Mathematics. Student must have a cumulative GPA of 3.5 or higher. Financial aid is a consideration but not a requirement. This scholarship is renewable. [Mathematics]

The Kathleen C. Winder '60 Education Scholarship. Awarded to a first year student majoring in early childhood or middle-level education and based on financial aid. The recipient must demonstrate high academic performance in high school and strong community service during the final two years of high school. The scholarship may be renewed for three additional years if the student maintains a 3.0 QPA, remains in early childhood or middle-level education, and actively pursues renewal prior to June 30 for the subsequent academic year. First preference is to a student majoring in early childhood education. [Admissions]¹

Dr. Charles R. Winter Scholarship in Pre-Med. Awarded to an upperclassman who is planning to attend medical school. [College of Science and Technology]

Roy Lutz Winters Foreign Language Scholarship. Awarded to an incoming first year student with an outstanding high school record who elects to major in foreign languages or chooses foreign languages as part of a double major. [Admissions]¹

The WLPA—Hall Communication Award. Awarded to a junior student of color and/or a female who is majoring in communication, with an option in broadcasting, and who demonstrates financial need. [Communication & Theatre]

Womble Family Study Abroad Scholarship. Awarded to a student with a cumulative GPA of 3.75 or higher who is studying abroad for at least one semester and has demonstrated financial need. Second preference would be for the scholarship to be split between two students with a cumulative GPA of 3.25 or higher, participating in semester-long or short-term study-abroad programming, and who have demonstrated financial need. [Financial Aid]

Janet Wood Memorial Fund. Awarded to a student enrolled as an education major and/or seeking teacher certification who has a GPA of at least 3.5. Undergraduate applicants must have obtained advanced professional standing, and graduate students must have obtained admission to degree candidacy status prior to applying for the scholarship. [Academic and Cultural Enrichment Committee]

Wubah Family Endowed Scholarship. Awarded to a rising sophomore, junior or senior who is majoring in one of the STEM areas. Recipients must be a first-generation college student and must have and maintain a GPA of 3.0 or greater. This scholarship is renewable for up to three years, provided the recipient remains in the major. Financial hardship is a consideration but is not required. [College of Science and Technology]

Alan K. Wyand and Robert L. Shoener Scholarship. Awarded to a student who is a music major, with first preference being a double major with music education and applied music. Preference will be given to a student in financial need but is not required to receive the award. A current

student could reapply, but the scholarship would not automatically be renewed. [Music]

Sandra A. Yeager, Ph.D., Chemistry Scholarship. Awarded to a student majoring in chemistry with at least 30 credits passed, a CGPA between 2.75 and 3.25, and with demonstrated financial need. First preference will be given to a female student meeting the criteria. The scholarship may be received more than once. [Chemistry]

Trudy Tyler Yefko '77 Biology Scholarship. Awarded to an incoming first-year or returning student majoring in biology. First preference is to a student with a minimum GPA of 3.0 and demonstrated financial need. [Financial Aid]¹

Dr. William Yurkiewicz Undergraduate Research Fellowship. Awarded to a student pursuing undergraduate research in cooperation with a faculty member in the biological sciences. First preference will be given to a junior or senior student who is conducting research with a high probability of publication in a peer-reviewed journal. The award is renewable, provided that the student continues satisfactory progress towards publication and progresses towards graduation. [College of Science and Technology]

Scholarships - Athletic

For additional information about the following athletic scholarships, contact the head coach of the respective sport or the director of intercollegiate athletics.

Anttonen Men's Basketball Scholarship. Awarded to a student who will be a full-time sophomore, junior or senior at the time of the award. The student must be a member of the men's intercollegiate basketball team when selected and participate on the team in the year the scholarship is awarded. Recipients must have and maintain a GPA of 2.75 or greater and be progressing toward graduation. In the event the men's intercollegiate basketball team ceases, the scholarship is to be awarded to a men's soccer player or next a men's cross-country team or club member who otherwise meets the criteria. If all named intercollegiate teams cease, the scholarship is to be awarded to a member of a remaining men's intercollegiate sport who otherwise meets the criteria. This scholarship may be received more than once at the discretion of the sport coach and the athletic director; it is not automatically renewable.

Anttonen Women's Intercollegiate Golf Scholarship. Awarded to a full-time rising sophomore or junior who is a member of the women's intercollegiate golf team when selected and who expects to participate on the team in the year the scholarship is awarded. Recipients must have and maintain a GPA of 2.75 or greater and be progressing toward graduation. In the event women's intercollegiate golf ceases, the scholarship is to be awarded to a women's basketball player who otherwise meets the criteria. If that intercollegiate team ceases, the scholarship is to be awarded to a member of a women's intercollegiate sport who otherwise meets the criteria. This scholarship may be received more than once at the discretion of the sport coach and the athletic director; it is not automatically renewable.

Judy and Doc Roc Anttonen Women's Intercollegiate Volleyball Scholarship. Awarded to a full-time rising sophomore or junior who is a member of the women's intercollegiate volleyball team when selected, and who expects to participate on the team in the year the scholarship is awarded. Recipients must have and maintain a GPA of 2.75 or greater and be progressing toward graduation. In the event women's intercollegiate volleyball ceases, the scholarship is to be awarded to a women's basketball player who otherwise meets the criteria. If that intercollegiate

team ceases, the scholarship is to be awarded to a member of a women's intercollegiate sport who otherwise meets the criteria. This scholarship may be received more than once at the discretion of the sport coach and the athletic director; it is not automatically renewable. The scholarship may be given to one or more members of the team at the discretion of the head coach in consultation with the athletic director.

Judy and Ralph Anttonen Women's Intercollegiate Field Hockey Scholarship. Awarded to a full-time junior or senior at the time of the award. The student must be a member of the women's intercollegiate field hockey team when selected and participate on the team in the year the scholarship is awarded. Recipients must have and maintain a GPA of 2.75 or greater and be progressing toward graduation.

Ralph and Judy Anttonen Men's Intercollegiate Baseball Scholarship. Awarded to a student who will be a full-time junior or senior at the time of the award. The student must be a member of the men's intercollegiate baseball team when selected and participate on the team in the year the scholarship is awarded. Recipients must have and maintain a GPA of 3.0 or greater and be progressing toward graduation.

Ed and Jackie Balderston Women's Basketball Scholarship. Awarded to an incoming first year women's basketball player or a current member of the women's basketball team in good academic standing. First preference to a student majoring in elementary education.¹

Bazow Family Athletic Scholarship. Awarded to an active member of one of the University's intercollegiate athletic teams in good academic standing. First preference will go to a graduate of McCaskey High School. This award may be renewed at the athletic director's discretion, provided the recipient remains a member of at least one team and in good academic standing.

Benchmark Construction Athletics Scholarship. Awarded to an active member(s) of one or more of the University's intercollegiate athletic teams in good academic standing. This award may be renewed at the athletic director's discretion, provided the recipient(s) remains a member of at least one team and in good academic standing.

Victor J. Bilotta and William B. Cooper Intercollegiate Baseball Scholarship. Awarded to a member of the baseball team with a GPA of 2.5 or greater. The scholarship may be renewed at the discretion of the athletic director and the team coach for up to four additional years as long as the player continues to meet the criteria.

Bishop Family Basketball Scholarship. Awarded to one player each on the men's and women's basketball teams who has a 2.0 CGPA and is progressing toward graduation.

Gerald Brenner '64 and Coach John Haser Men's Soccer Scholarship. Awarded to an incoming first year or returning student-athlete on the men's soccer team in good academic standing.¹

Gene A. Carpenter Football Scholarship. Awarded to entering or enrolled athletes who have established themselves as outstanding intercollegiate football players. Recipients must meet all requirements for admission or be full-time students in satisfactory academic standing.¹

Chapman Auto Group Athletic Scholarship. Awarded to an incoming first year student who is a Chapman Auto Group employee or the child or spouse of a Chapman Auto Group employee from either the Lancaster or Columbia business location. If no such student applies, the scholarship will be awarded to an incoming first year student-athlete demonstrating financial need as determined by the Office of Financial Aid.¹

George W. Cole Memorial Scholarship. Awarded as tuition assistance to an incoming first year baseball player with a high school GPA of 2.25. First preference will be for a qualifying player from an underrepresented population. The award may be renewed for a total of up to 10 semesters, provided the student continues as a member of the team and maintains a CGPA of at least 2.5.¹

The Bennett J. Cooper Baseball Scholarship. Awarded to financially assist student-athletes participating in intercollegiate baseball.

Cindy Lee Dalrymple Memorial Women's Lacrosse Scholarship. Awarded to an incoming first year women's lacrosse player(s) or current member(s) of the women's lacrosse team in good academic standing.¹

Kia Damon Women's Basketball Scholarship. Awarded to an incoming first year women's basketball player(s) or a current member(s) of the women's basketball team in good academic standing.¹

Richard DeHart Basketball Scholarship. Awarded to a member of the men's basketball team at the discretion of the head coach.

Dickinson Field Hockey Scholar-Athlete Award. Awarded to one or more women's field hockey players who have a minimum cumulative GPA of 3.0. If a selected student is a first year student, that individual must have a similar high school academic history. Students selected must be on the team during the semester in which the funds are received. The awards are renewable at the discretion of the coach and athletic director, provided the student continues to meet the criteria.

George Doherty Memorial Scholarship for Wrestling. Awarded to athletes who have established themselves as outstanding wrestlers. Entering first year students are selected based on their potential for outstanding achievement in intercollegiate wrestling; upperclassmen are selected based on their previous achievements as members of the wrestling team.¹

Faculty-Student Athletic Committee Awards. Plaques to the male and female varsity letter winners who have attained the highest GPA over seven semesters of academic work.

The Stacey M. Fink, M.D., Ph.D. Academic Achievement Award. Awarded to the Millersville University baseball player with the highest cumulative GPA at the end of the fall semester of his junior academic year and applied to the following academic year.

Robert J. Fink Men's Soccer Scholarship. Awarded to an incoming first year or returning student-athlete on the men's soccer team in good academic standing.¹

Elwood J. Finley Award. Presented to an outstanding male and female senior athlete. The award encompasses the career athletic accomplishments of each student.

Glenn M. Flegal '54 Wrestling Scholarship. Awarded to an incoming first year student with a proven wrestling record and who will participate in the Millersville wrestling program. If no first year student is available, then the student must be in good academic standing with a GPA of 2.0 or better and be a Millersville wrestler.¹

Dr. Carol Flinchbaugh Women's Basketball Scholarship. Awarded to an incoming first year women's basketball player(s) or a current member(s) of the women's basketball team in good academic standing.¹

Frerichs Family Women's Basketball Scholarship. Awarded to students who participate on the Millersville University women's basketball team.

Rich Frerichs Women's Basketball Annual Award Scholarship. Awarded to an incoming first year women's basketball player(s) or a current member(s) of the women's basketball team in good academic standing.¹

Miles and Sara Gallagher Athletic Scholarship. Awarded to an incoming first year student or a current member of a Millersville University athletic team in good academic standing.¹

Geiger '52 Football Scholarship. Awarded to a current student in good academic standing who is an active member of the Millersville University intercollegiate football team or to an incoming first year or transfer student who becomes an active member of the Millersville University intercollegiate football team. The scholarship is renewable annually up to four years, provided the student remains active on the team, is in good academic standing and progressing toward graduation.¹

Conor Gilbert '15 Golf Scholarship. Awarded as tuition to a returning member of the men's golf team. First preference is for the individual to have a GPA of 3.0 or greater. Additional considerations include a scoring average of 78 and 70 percent of tournaments played. Second preference is for the individual to have a GPA of 2.75 or greater.

Catherine "Kitty" Glass Housing Scholarship. Awarded to one or more students in good standing who are members of the women's basketball team and who live in a housing facility managed by a Student Lodging, Inc. affiliate or by the University in the year in which scholarship funds are to be awarded. Scholarship may be renewed at the discretion of the head coach of the women's basketball team but is not automatically renewable.

Eugene Groff-Arthur Hulme Football Scholarship. Awarded to a student participating in intercollegiate football.

George D. Hauber Housing Scholarship. Awarded to one or more female student-athletes in good standing who live in a housing facility managed by a Student Lodging, Inc. affiliate or by the University in the year in which scholarship funds are to be awarded. Scholarship may be renewed at the discretion of the athletic director but is not automatically renewable.

Willard O. and Dr. Catherine Gibson Havemeier Scholarship for Football. Awarded to one or more first-year students who matriculate at Millersville with a GPA of 3.0 or higher and who have demonstrated leadership qualities during high school.¹

Justin Flannery Hilton '07 Memorial Baseball Scholarship. Awarded as tuition to a member of the baseball team who plays the position of pitcher, is in good academic standing with a GPA of at least 2.3, and demonstrates strong team spirit and leadership on and off the field. Financial need is not a requirement but may be considered.

Floyd "Shorty" Hitchcock Memorial Wrestling Scholarship. Awarded to a student wrestler in good academic standing with financial need. The recipient must actively participate in the wrestling program the year the award is received.

Robert L. Jones '61 Soccer Award. Awarded to a male or female soccer player who best exemplifies the tradition of the scholar-athlete, who is in good academic standing with a CGPA of 2.75 or greater, and who demonstrates leadership, teamwork and service to the University or broader community.

Dr. Frank Kafka Basketball Scholarship. Awarded to an athlete who has potential for outstanding achievement in men's intercollegiate basketball.

Recipients must meet all requirements for admission or be full-time students in satisfactory academic standing.¹

J. Henry Keneagy Scholarship in Athletics. Awarded to an entering full-time, first year student who intends to participate in intercollegiate athletics on the basis of potential for outstanding achievement in intercollegiate athletics and financial need.¹

Stephen and Veronica Kepchar Jr. Housing Scholarship. Awarded to one or more students in good standing who are Millersville University athletes and who live in a housing facility managed by a Student Lodging, Inc. affiliate or by the University in the year in which scholarship funds are to be awarded. Scholarship may be renewed at the discretion of the athletic director but is not automatically renewable.

Dr. Walt Kreider '52 and Family Baseball Scholarship. Awarded to an incoming first year baseball player or a current member of the baseball team in good academic standing. First preference will be given to a student majoring in education.¹

Richard LaGrotte Men's Soccer Scholarship. Awarded to an incoming first year men's soccer player(s) or a current member(s) of the men's soccer team in good academic standing.¹

H. Craig Lewis '66 and Bennett J. Cooper Intercollegiate Baseball Scholarship. Awarded to a member of the baseball team with a GPA of 2.5 or greater. The scholarship may be renewed at the discretion of the athletic director and the team coach for up to four additional years as long as the player continues to meet the criteria.

Branden Lippy and Family Women's Basketball Scholarship. Awarded to an incoming first year women's basketball player or a current member of the women's basketball team with a 3.0 GPA or above and demonstrates integrity, character, work ethic and sportsmanship. First preference will be given to a student majoring in sports business, with second preference to a student pursuing a minor in athletic coaching.¹

Phil and Betty Loht Housing Scholarship. Awarded to one or more students in good standing who are Millersville University athletes and who live in a housing facility managed by a Student Lodging, Inc. affiliate or by the University in the year in which scholarship funds are to be awarded. Scholarship may be renewed at the discretion of the athletic director but is not automatically renewable.

William & J. Diane Martin Men's Soccer Scholarship. Awarded to an incoming first year men's soccer player or a current member of the men's soccer team in good academic standing. The recipient will be awarded and/or renewed by the men's soccer coach, the athletic director or his/her designee.¹

McCullough Family Athletic Scholarship. Awarded to a junior or senior student-athlete with demonstrated financial need and who is in good academic standing.

William B. McIlwaine Women's Basketball Scholarship for Academic Excellence. Awarded to a member of the women's basketball team who has been a member of the team for a minimum of two years at the time of receiving the scholarship, and who has achieved a cumulative GPA of 3.2 or higher with demonstrated excellence on the basketball court.

F. W. McLaughlin Football Scholarship. Awarded to athletes who have established themselves as outstanding football players. Entering first year students are selected based on their potential for achievement

in intercollegiate football; upperclassmen are selected based on their previous achievements as members of the football team.¹

MEDAL Fund Athletic Scholarships. Established by Millersville University employees and awarded to athletes who have potential for outstanding achievement in intercollegiate football, wrestling, men's basketball or women's basketball. Recipients must meet all requirements for admission or be full-time students in satisfactory academic standing.¹

Men's Basketball Memorial Scholarship. Established in memory of Eugene Rutherford, Class of 1940, and other former Millersville basketball team members now deceased. Awarded to athletes who have potential for outstanding achievement in men's intercollegiate basketball. Recipients must meet all requirements for admission or be full-time students in satisfactory academic standing.¹

Men's Rugby Alumni Award. Awarded to a young man of strong character who plays rugby according to the spirit of the game. The recipient must be a member of the Rugby Club for at least two years.

Men's Soccer Scholarship. Awarded to an incoming first year or returning student-athlete on the men's soccer team in good academic standing.¹

Scott Micklewright Mid Penn Bank Golf Scholarship. Awarded to an outstanding incoming first year student or current member of the Millersville University men's or women's golf team in good academic standing.¹

Millersville University Alumni Association Athletic Scholarship. Awarded to one male and one female athlete who participate in NCAA-recognized sports at Millersville University. Students must be full-time, maintain an overall GPA of 3.0 and have passed 24 credits but no more than 60 credits.

Morgan Scholarship Fund for Women's Athletics. Awarded to two or more incoming first year students or current members of a women's intercollegiate athletic team in good academic standing.¹

Lois T. Morgan '54 Field Hockey Scholarship. Awarded as tuition to one or more members of the field hockey team. First-time recipients must have a GPA of 3.0 or greater; incoming first year students must have equivalent high school grades. Recipients must demonstrate above-average athletic talent. The scholarship may be renewed at the discretion of the athletic director and field hockey coach, provided recipients attain PSAC Scholar Athlete status (currently a 3.25 GPA) and demonstrate a continued, active and above-average contribution to field hockey.

Lois T. Morgan '54 Student-Athlete Endowed Scholarship. Awarded as tuition to one or more student-athletes. There is no sport preference; however, if funds are divided, they shall benefit recipients from both men's and women's sports. First-time recipients must have a GPA of 3.0 or greater; incoming first year students must have equivalent high school grades. Recipients must demonstrate above-average talent in their sports. The scholarship may be renewed at the discretion of the athletic director and respective coaches, provided recipients attain PSAC Scholar-Athlete status (currently a 3.25 GPA) and demonstrate a continued, active and above-average contribution to their sports.

Linda Murphy Baseball Scholarship. Awarded to one or more baseball players. First preference is given to a pitcher. Student/s selected must be on the team during the semester in which the funds are received and in good academic standing. Financial aid is a consideration but not a requirement.

Muscovitch Family Baseball Scholarship. Awarded to a sophomore, junior or senior member of the baseball team in good academic standing. First preference will be given to a pitcher.

The B. Todd Myers Memorial Golf Scholarship. Awarded to students who participate on the Millersville University men's and women's golf teams.

Naylor Family Football Scholarship. Awarded to an incoming first year football player or a current member of the football team in good academic standing. First preference is to a linebacker.¹

Northwestern Mutual Athletics Scholarship. Awarded to an active member(s) of one of the University's intercollegiate athletic teams in good academic standing. This award may be renewed at the athletic director's discretion, provided the recipient(s) remains a member of at least one team and in good academic standing.

Sandra Peters Field Hockey Scholarship. Awarded as tuition credit to one or more talented field hockey players. Candidates must have GPAs of at least 2.75/4 and be active on the team in the academic year the scholarship is awarded. If a candidate is an entering first year student, that individual's high school GPA must be at least 2.75/4, and she must commit to play field hockey at Millersville University upon arrival. The scholarship can be renewed, provided the student(s) annually meets the criteria.¹

James Pillar '90 Football Scholarship. Awarded to an incoming first year football player(s) or a current member(s) of the football team in good academic standing.¹

Mike "Boog" Powell & Family Baseball Scholarship. Awarded to an incoming first year or returning sophomore, junior or senior member of the baseball team with a cumulative 3.0 GPA or higher and who demonstrates strong integrity, work ethic and is regarded as a tremendous teammate.¹

Aurora Wickey Pucillo Award. Awarded to an outstanding female athlete who has participated in more than one varsity sport and lettered in at least one sport. Recipient must exhibit outstanding traits of loyalty, leadership and sportsmanship, and have a GPA of at least 2.5.

John A. Pucillo Memorial Scholarship. Awarded in alternating years on the basis of financial need to a female or male who has participated in intercollegiate athletics for at least two years, has completed at least 60 credits and has a GPA of at least 2.0.

Renee Fraker Quinn '09 Field Hockey Award. Awarded to a field hockey player who displays selflessness, leadership and commitment to excel both academically and athletically for the benefit of the field hockey program. Recipients may be incoming or returning members of the Millersville field hockey team.

Maryann Kitson Raspen Scholarship in Women's Athletics. Awarded to an entering female first year student who has registered as a full-time student and has declared an intention to participate in athletics. The recipient shall be chosen on the basis of potential for outstanding achievement in intercollegiate athletics.¹

Theodore Rupp Wrestling Scholarship. Awarded to a student who participates in intercollegiate wrestling and demonstrates financial need.

Kathryn G. Hughes Seaber and Samuel J. Seaber Jr. Men's Baseball Scholarship. Awarded to one or more active members of the men's baseball team who are incoming first year students. The student's high school CGPA must have been a minimum of 2.75 out of 4.0 or equivalent

scale. The award may be renewed if the student(s) remains active on the team and sustains the required CGPA.

Kathryn G. Hughes Seaber and Samuel J. Seaber Jr. Women's Softball Scholarship. Awarded to one or more active members of the women's softball team in good academic standing with a GPA of 2.75 or greater. The scholarship is renewable, provided the student(s) continues to meet the criteria.

Robert L. Slabinski Scholarship. Awarded to a student(s) participating in intercollegiate women's basketball who has a minimum academic average of 2.5 and has 60 or more academic credit hours. The recipient(s) will be selected by the head women's basketball coach, with the intention to provide additional assistance for the student(s) to continue her education.

Robert L. & Jane Z. Slabinski Student Lodging Inc. Scholarship. Awarded to one or more students in good standing who are members of a Millersville intercollegiate team and who reside in a Student Lodging, Inc. property in the year in which scholarship funds are to be awarded. The scholarship may be renewed at the discretion of the athletic director but is not automatically renewable.

The Jeff Sollars '91 Pursuit of Excellence Baseball Award. Awarded to one or more members of the baseball team who are in at least their second year on the team. The recipient(s) must have financial need, a GPA of 2.0 and demonstrate an above-average commitment to the sport, team leadership or exceptional effort.

Mike Stone Wrestling Scholarship. Awarded to a student who has established himself as an outstanding wrestler.¹

Team of '63 Football Scholarship. Awarded to a football player. Financial aid is a consideration but not required. Recipient will be selected by the head football coach or his/her designee.

Donald T. Testa Sr. '64 Memorial Annual Football Award. Awarded to recruit or retain a talented football player in good academic standing with the University (2.0 GPA or higher). The award may be renewed up to three times, provided the player remains on the team and continues to meet the criteria. First preference is for a student majoring in Applied Engineering, Safety & Technology (AEST) or its successor.¹

Franklin R. Thomas '39 Football Scholarship. Awarded to a student who is an entering first year student who will participate in intercollegiate football, has an entering high school GPA of at least 3.0 and demonstrates financial need. The scholarship is renewable, provided the student remains in good academic standing (as defined by the University) and eligible to participate in intercollegiate football.¹

Margaret Thorwart '17 Scholar Athlete Award. Awarded to a member of the field hockey team who has completed a minimum of 15 hours of study and has maintained a cumulative GPA of 3.5 or higher. In absence of a field hockey player, this scholarship may be awarded to any female athlete meeting the same academic criteria. Financial need is not a requirement.

Tilahun Field Hockey Scholarship. Awarded to an incoming first year or returning field hockey player with a minimum GPA of 3.0. First preference will be given to a graduate of Lancaster Mennonite School. Second preference to a player from Lancaster County.¹

Richard C. Todd Scholarship. Established by Dr. Todd and Clauda Pennock Todd, and awarded to athletes who have established themselves as outstanding basketball players. Entering first year students are

selected based on their potential for achievement in intercollegiate basketball; upperclassmen are selected based on their achievements as members of the basketball team.¹

Richard Cecil Todd and Claudia Pennock Todd Basketball Scholarship. Awarded to a student who proves himself as an outstanding basketball player.

James E. Treasure Memorial Football Scholarship. Awarded to an incoming first year student who has good academic high school preparation and will participate in intercollegiate football. The student will receive the scholarship each year he is in good academic standing and eligible to participate in intercollegiate football.¹

Marjorie A. Trout Women in Athletics Scholarship. Awarded to female student-athletes who are rising juniors or seniors with a CGPA of 2.8 or above.

University Athletic Scholarships. Awarded to student-athletes on the basis of potential for outstanding achievement in intercollegiate athletics. Recipients must meet all requirements for admission and maintain satisfactory academic progress.¹

Harold Vinson Jr. Memorial Football Award. Awarded as tuition to a member of the men's football team. If a returning player or transfer student, the individual must have a GPA of 2.5 or greater. If offered to a first year student, the individual must have similar academic qualifications. First preference is that the recipient be a cornerback. This award may be renewed for 10 semesters, provided the recipient remains a member of the team and continues to meet the academic qualification.¹

Walter B. Waetjen '42 Ed.D. Football Scholarship. Awarded as tuition to students who do/will play football. Incoming first year recipients must have graduated in the top half of their class and have strong potential to contribute to the football team. Preference is to be given to students with financial need. Non first year recipients must be in good academic standing, with a CGPA of 2.25 or above, progressing toward graduation, and be active members of the football team in the academic year the award is received. First preference is for students playing the lineman position. Award may be received more than once if criteria continue to be met.

Barbara J. Waltman '73 Lacrosse Award. Awarded as tuition credit to one or more talented lacrosse players. Recipients must have GPAs of at least 2.75 and be active on the team in the academic year the scholarship is awarded. If a recipient is an entering first year student, that individual's high school GPA must be at least 2.75, and she must commit to play lacrosse at Millersville University upon arrival. The scholarship can be renewed, provided the student(s) annually meets the criteria.

Joseph B. and Judith S. Wilt Men's Basketball Scholarship. Awarded as tuition to a member of the men's basketball team. If a returning player or transfer student, the individual must have a GPA of 2.5 or greater. If offered to an incoming first year student, the individual must have similar academic qualifications. This award may be renewed for a total of 10 semesters, provided the recipient remains a member of the team and continues to meet the academic qualifications.

Women's Athletic Scholarships. Awarded to two junior female athletes.

Women's Soccer Alumni Scholarship. Awarded to an incoming first year women's soccer player(s) or a current member(s) of the women's soccer team in good academic standing.¹

University Awards

An award is a cash grant or gift made directly to a student or a student's account, or a mention on a University plaque in recognition of the student's achievements. For more information on any of these awards, contact the department found in the brackets [] at the end of the award criteria.

AFSCME Local 2421 Award. Awarded to students who are full-share members of AFSCME Local 2421 or dependents of full-share members of AFSCME Local 2421 and who are currently attending Millersville University. Award funds will be used to cover costs related to receiving a degree at Millersville University, including but not limited to textbook costs, fees, and room and board. Recipients must be in good academic standing. Students must be enrolled in a degree-seeking program and have completed a minimum of 30 credits. An application is required. The scholarship is renewable, but recipients must go through the application process each year. [Financial Aid]

American Chemical Society, Millersville University Student Affiliate Award. Recognition on a plaque in Caputo Hall to a graduating senior of high academic standing who has contributed outstanding service to the chemistry department and the chapter. [Chemistry]

American Chemical Society, Southeastern Pennsylvania Section Award. The Merck Index is awarded to the outstanding senior chemistry major. Recognition on a plaque in Caputo Hall and a choice from several reference works and journal subscriptions are awarded. [Chemistry]

American Chemical Society, Undergraduate Award in Analytical Chemistry. A subscription to Analytical Chemistry and honorary membership in the Division of Analytical Chemistry to the outstanding student in analytical chemistry. Recognition on a plaque in Caputo Hall. [Chemistry]

American Chemical Society, Undergraduate Award in Inorganic Chemistry. Awarded to the student who demonstrates academic excellence (minimum of 3.5 QPA) and outstanding performance in CHEM 452: Advanced Inorganic Chemistry, and who plans a future career in chemistry. [Chemistry]

American Chemical Society Undergraduate Award in Organic Chemistry. Awarded to the top graduating senior student majoring in chemistry or biochemistry who has demonstrated excellence in organic chemistry based on a combination of research experience, coursework and a desire to pursue a career in chemistry. The student must be enrolled at Millersville University for the current academic year. [Chemistry]

American Institute of Chemists Award. A one-year associate membership in AIC and recognition on a plaque in Caputo Hall to the outstanding graduating chemistry major, based on character, academic standing and potential to become a successful chemist. [Chemistry]

American Society of Safety Engineers, Lehigh Valley Chapter Award. Awarded to a rising junior or senior majoring in occupational safety and environmental health with a minimum GPA of 3.0 and demonstrated financial need. [Applied Engineering, Safety & Technology]

American Society of Safety Engineers/Raymond C. Mullin Award. Presented by the Central Pennsylvania Chapter of ASSE each semester to a junior or senior occupational safety and hygiene management major who has completed at least 15 credits of occupational safety and hygiene management courses and 12 credits of related courses, with a GPA of at

least 2.5 overall and 3.0 in health safety management courses. [Applied Engineering, Safety & Technology]

Athletic Coaching Minor Faculty Award. Presented to the outstanding graduating male and female athletic coaching minor students, based on academic excellence, campus leadership, sportsmanship and community service. [Wellness & Sport Sciences]

Guy Kurtz Bard Award. Awarded to a senior political science major in odd-numbered years and to a senior history major in even-numbered years for outstanding ability in political science and history. [History]

Esther Herr Bear Award. Awarded to worthy and deserving students who excel in music. [Music]

Anne E. Beyer Award. Awarded to seniors in early childhood or middle-level education for outstanding performance in student teaching. Recipients must have spent two full academic years at Millersville in preparation for teaching. [Early, Middle & Exceptional Education]

Cora Catharine Bitner Music Award. Awarded to students who are proficient in musical performance and have rendered loyal service to the musical activities of the University. [Music]

Henry Franklin Bitner Science Prizes. Awarded to two seniors annually, one in physical science and one in biological science. [College of Science and Technology]

The Black Student Union/Dr. Melvin Allen and Jennifer Coleman Award. Awarded to a member of the Black Student Union who has a CGPA of 2.5 and who has demonstrated service to the Millersville campus community through active membership and involvement in campus organizations. [Black Student Union]

Lee E. and Laura H. Boyer Award. Awarded to two seniors: one who is a computer science major excelling in mathematics, and one who is a mathematics major excelling in computer science. [Computer Science]

A. G. Breidenstine Award. Established by friends of Dr. A. G. Breidenstine in recognition of his service as dean from 1955 to 1965. Awarded to the student whose honors work is judged to be most outstanding. [Honors and Awards Committee]

Chemical Rubber Company Chemistry Achievement Award. A book to the outstanding student in the general chemistry sequence. [Chemistry]

Class of 1866 Award. Awarded to two seniors for excellence in mathematics. [Mathematics]

Class of 1895 Frank Albert Award. Awarded to a graduating senior on the basis of scholarship and all-around service to the University. [Honors and Awards Committee]

Class of 1898 Award. Awarded to the second-ranking member of the junior class, payable after graduation. [Honors and Awards Committee]

Class of 1910 Award. Awarded to a student for excellence in English at the end of the student's senior year. [English]

Class of 1911 H. Justin Roddy Memorial Award. Awarded to a graduating senior who, in student teaching, shows the greatest promise of becoming a successful teacher of the sciences. [College of Science and Technology]

Class of 1922 Esther E. Lenhardt Award. Awarded to a senior who has demonstrated outstanding proficiency in the use of English. [English]

Class of 1928 Isaac F. Seiverling Award. Awarded to a junior for proficiency in mathematics. [Mathematics]

Commission in Cultural Diversity Award. Awarded based on academic performance and evidence of a commitment to diversity through service at the University, demonstrated through a competitive application and essay. [Cultural Diversity Committee]

Commonwealth of Pennsylvania University Biologists Award. Awarded on the basis of academic standing, excellence in biology and research potential. [Biology]

Computer Science Award. Awarded to a senior computer science major for outstanding achievement in computer science courses. [Computer Science]

Cunningham Art Foundations Achievement Award. Awarded to a full-time student who has taken all four art foundation courses (currently Two-Dimensional Design, Drawing I, Three-Dimensional Design and Drawing II) at Millersville University and obtained a GPA in those courses of at least 3.0. Recipient must be a declared visual fine art major (painting, drawing, ceramics, printmaking, photography, metals or sculpture) seeking the B.F.A. degree, and have excelled in the foundation courses and shown promise as a visual fine artist. An application is required. [Art & Design]

Dilworth-McCollough English Award. Awarded to a student who has achieved excellence in English literature. [English]

Laura B. Doering Library Service Award. Presented to senior student library workers who have demonstrated exceptional commitment on the job. [Library Sciences]

Dramatics Service Award. Presented by Citamard Players to a graduating senior for outstanding service in the area of dramatics. [Communication & Theatre]

Earth Sciences Awards for Academic Excellence. Recognition on a plaque in Caputo Hall to seniors for excellence in earth sciences. [Earth Sciences]

EAPSU Award. A merit award for overall excellence in English given by the English Association of Pennsylvania State Universities. [English]

Michael W. Eisenberger Choir Award. Awarded to the graduating senior University choir member who has been recognized by fellow choir members as emulating qualities of leadership, musical ability and friendliness displayed by the late Michael W. Eisenberger during his association with the choir and the University. [Music]

Excellence in Printing Technology Award. Presented annually to a senior industry and technology student who has completed 90 credits, possesses a GPA of at least 3.0, consistently produces high-quality work, displays innovative ideas and demonstrates outstanding commitment to the printing profession. [Applied Engineering, Safety & Technology]

Dominick J. and Frances M. Fanani Junior/Senior Award. Awarded to a full-time junior or senior student in the arts and humanities for outstanding scholarship and character. [College of Arts, Humanities and Social Sciences]

Betty J. Finney Community Service Award. Awarded to a senior psychology major who has demonstrated outstanding community service relevant to the field of psychology. Recipient must have attained

a CGPA of at least 3.0. Selection is by vote of the psychology faculty. [Psychology]

Antone K. Fontes Health Professions Award. Reference books presented to three graduating seniors—one each from premedical/pre dental, nursing and allied health programs—who have demonstrated outstanding ability. Selections are made on the basis of GPA and recommendations. [Biology, Nursing, and Dean of College of Science and Technology]

Marion G. Foster Award. Awarded to a junior social work major who best exemplifies those qualities of Marion G. Foster: dedication to the social work profession, a genuine respect for people and demonstrated academic excellence under extraordinary circumstances. [Social Work]

Alice R. Fox Memorial Award. Awarded to a student who has achieved excellence in English. [English]

Leah Fudem Photographic Service Award. Awarded to two students for outstanding photographic service to The Snapper or the Touchstone. [Snapper]

Verda F. Fulmer Award. Awarded annually to an outstanding senior in early childhood or middle-level education at the end of the school year. [Early, Middle & Exceptional Education]

Fulton Bank Award in Economics. Awarded to a student who, in the judgment of the economics department, has written the best essay on an aspect of banking. [Economics]

Roy and Mary Garden Gamber-Helen L. Koontz Award in Education. Awarded to two students (junior or senior status) who have demonstrated a commitment to a career in teaching. One award must be directed to a candidate committed to early childhood or middle-level education. [Elementary, Middle & Exceptional Education]

Geography Faculty Award. A certificate and an appropriate gift, usually a book, presented annually by the geography department faculty to a geography major who graduates with honors. [Geography]

D. Joan Godfrey Nursing Award. Awarded to one to three senior nursing majors on the basis of participation in the nursing program, club and other campus activities; involvement in the nursing profession and academic standing. [Nursing]

John K. Harley and Grace W. Evans Award. Awarded to a student who has maintained the highest standing in scholarship and deportment during both his/her junior and senior years, and who is of high moral character and exemplary habits. [Honors and Awards Committee]

James Hamilton and Lucretia Boyd Hartzell Piano Award. Awarded to a junior or senior piano student who possesses extraordinary talent, has shown considerable progress and has contributed to the musical enrichment of the University community. [Music]

Jeffrey Hawthorne Memorial Award. Awarded to a rising sophomore majoring in elementary education with a minimum GPA of 2.5 who has demonstrated financial need. The scholarship is renewable for five additional semesters, provided the student continues to meet the criteria. [Early, Middle & Exceptional Education]

Isaac and Terry Hay Sculpture Award. Awarded to an undergraduate student for excellence in sculpture, to be determined by the faculty member coordinating the Millersville Student Art Show in consultation with the juror of the student art show. [Art & Design]

Frank R. Heavner Memorial Award. Awarded to the English major who has the highest average in at least nine credits of linguistics courses. [English]

Earle M. Hite Award. Awarded to a member of a student publication of Millersville University who has shown enthusiasm and dedication in the production of The Snapper or Touchstone and meets the following criteria: has worked for the publication for at least four semesters; is versatile and willing to help with any task; and has made notable contributions to the betterment of the publication and the University. This award may be given to an editor, writer, reporter, photographer, business manager, member of the circulation or advertising department, or other member who contributes to the production of the publication. [Snapper]

The Reverend Lewis Merwin Hobbs Medallion/Dr. Dominick '53 and Mrs. Helen DiNunzio Award. Awarded to graduating seniors achieving summa cum laude (4.0 academic average overall). [Honors and Awards Committee]

Elsie Hostetter Award. Presented by the early childhood faculty to the outstanding senior early childhood education major. [Early, Middle & Exceptional Education]

Ralph J. Hyson Memorial Award. Awarded to the senior French major judged outstanding in French studies. [Language and Culture Studies]

Instrument Society of America Central Keystone Section Outstanding Student Award. Awarded to a junior or senior industry and technology student who possesses a GPA of at least 3.0 and is committed to specializing in and demonstrating outstanding performance in transportation/energy/power. [Applied Engineering, Safety & Technology]

Ireland 500 Award. Awarded to a student who is participating in a global education experience in Ireland (including Northern Ireland), including study abroad (any-length program), student teaching or internship abroad. First preference will be given to a student with financial need. An application is required. [Global Education and Partnerships]

Henry J. Kauffman Award in Metal Technology. Awarded to a senior industry and technology major who has attained distinguished achievement in metals technology. [Applied Engineering, Safety & Technology]

Richard C. Keller Award in American History. Awarded to a senior history major who has shown strong interest and capability in American history. [History]

Martin and Anna Zimmerman Kondor Award. Awarded to a senior in early childhood or middle-level education with a 3.35 GPA, excellence in student-teaching experience, outstanding personal and professional characteristics, and dedication to teaching. [Early, Middle & Exceptional Education]

Louis and Margarete Koppel Awards in European History and German Literature. The awards are given to two graduating seniors, one excelling in the study of European history and the other excelling in German language and literature. [History and Language and Culture Studies]

Lambda Chi Alpha Freshman Annual Award. Awarded to a member of the Lambda Chi Alpha fraternity in good academic standing. [Financial Aid]

Edward J. Laucks Memorial Sertoma Award. Awarded to a student who has achieved excellence in the communication major. [Communication & Theatre]

Qwan K. Lewis Award. Awarded to a first year or sophomore student majoring in communication or music with a minimum GPA of 3.0. First preference for a student who is involved in Greek Life and who is musically inclined. [Admissions]¹

Jack Loose Sons of the Revolution American History Research Award. Awarded to a junior, senior or graduate student who is pursuing current research on the American Revolution. First preference will be a student whose research focuses on the American Revolution in Lancaster County; second preference will be a student whose research focuses on the American Revolution in general; and third preference will be a student doing research on a topic within American history. An application is required. The recipient will be selected by the history department after an initial review by the Lancaster County Chapter, PSSR. [History]

Susan P. Luek Award for Graduate Study in Psychology. Awarded to up to four graduating psychology majors who have a CGPA of 3.5 or higher and show considerable promise for graduate study in psychology or related areas. [Psychology]

Susan P. Luek University Honors College Award. Awarded to up to four graduating seniors in the University Honors College who have a CGPA of 3.5 or higher and show considerable promise for graduate study or post-baccalaureate professional school. [University Honors College]

Patricia N. May '66 Memorial Award. Awarded to an early childhood education major with a cumulative GPA of at least 3.0 who also has financial need. The award may be renewed, provided the student remains in the major and continues to meet the criteria. [Early, Middle & Exceptional Education]

John Mentzer Award in Special Education. Awarded to a junior who is enrolled in the certification program in special education and has demonstrated potential for becoming an outstanding teacher. [Special Education]

Helen R. Metzler Undergraduate and Graduate Reading Award. Awarded to an early childhood or middle-level education major and a graduate student who completed their Reading Specialist certification who have an interest in reading and have shown excellence in classroom performance and knowledge of reading techniques. Must have completed all certification courses at Millersville University. [Early, Middle & Exceptional Education]

Music Faculty Award. Awarded to the outstanding music education graduate. [Music]

C. Maxwell and Edna H. Myers History Award. Awarded to a history major who has earned a minimum of 85 credits; based on academic accomplishment and service to the department and the University. [History]

Carol J. Myers Music Educators Award. Awarded to a music education major in good academic standing entering his/her senior year, prior to the semester in which the student will be student teaching. Preference given to students concentrating in vocal studies. [Music]

Dr. Erik and Mrs. Jeanne Nakjavani Award for International Study. Awarded to up to five students for expenses related to study abroad and/or international internships. Students will be selected based upon the following criteria: academic merit, the impact of the education abroad on their professional and personal development, and a commitment to promote international education upon their return to Millersville University. First preference will be given to students with financial need.

An application is required. Second preference, or if no student meets the above criteria, the award will be offered to up to five students who are pursuing an academic program with an international or comparative focus, including but not limited to government, international studies and foreign languages. [Global Education and Partnerships]

Jay B. Niesley '73 Memorial Student Leadership Award. Awarded for outstanding leadership to a student with at least 45 completed credits and a cumulative GPA of 2.5. Selection will be based on the student's contributions to Millersville University and involvement in leadership roles, including but not limited to student affairs and government. [Student Affairs]

Joseph Oberly Jr. Memorial Family Music Award. Awarded to an incoming first year or sophomore student in good academic standing in the music department. First preference should be given to a student with focused training on the accordion, keyboard, piano and/or guitar. [Music]¹

Omicron Delta Epsilon Student Research Award. Awarded to one or more students majoring in economics who demonstrate(s) academic excellence through economic research by presenting the best research paper at a research conference, symposium, seminar or poster session. [Economics]

Burl N. Osburn Award. Awarded annually to a student who excels in technology education. [Applied Engineering, Safety & Technology]

Pennsylvania Bandmasters Association Award. Awarded to an incoming first year music major who excels in band instrument performance. [Music]¹

Pennsylvania Institute of Certified Public Accountants Award. A plaque will be given to a graduating senior who has demonstrated outstanding commitment to the profession of accounting. Selection is based on high performance in accounting in particular and on excellent general performance, plus participation in the cocurricular activities in business administration. [Accounting and Finance]

Phi Kappa Phi Award. Awarded for the best essay written by an undergraduate member of Phi Kappa Phi Chapter 211. [Phi Kappa Phi]

Phi Sigma Pi Award. Awarded to a graduating Phi Sigma Pi member for scholarship, leadership, character and outstanding service to the University. Service keys are awarded to graduating members of the fraternity using the same criteria. [Phi Sigma Pi]

Philadelphia Alumni Award. Awarded to a technology education major who demonstrates the best qualities of a technology teacher. [Applied Engineering, Safety & Technology]

Polymer Education Undergraduate Award. Awarded to a sophomore/junior-level chemistry major who has a minimum GPA of 3.5 and who has earned an "A" in each semester of the two-semester organic chemistry course sequence. [Chemistry]

Psychology Club Award. Awarded to a senior psychology major for outstanding interest in and enthusiasm for psychology, service to the department and scholarship as evidenced by a GPA of at least 3.0. [Psychology]

Psychology Faculty Awards. Established by the psychology faculty and awarded to outstanding junior and senior psychology majors. [Psychology]

Keith Ranck/Ralph and Judy Anttonen/WIXQ Award. Awarded to a student who is a member of the WIXQ Executive or Station Council and who has worked at WIXQ for at least two semesters. The recipient will be selected by a committee including the WIXQ staff advisor, a member of the Student Affairs staff, two graduating senior students from WIXQ and a WIXQ alumnus. The award is not renewable. [WIXQ]

Margie L. Ranck Award. Awarded to a student who has completed the junior year on the basis of outstanding intellectual attainment, good character and an interest in Bible study. [Honors and Awards Committee]

Dr. Gary W. and Jacqueline Reighard Award for Outstanding Leadership. Awarded to a student for outstanding leadership who has completed at least 60 credits and who possesses at least a 2.75 GPA. Selection is based upon past contributions to Millersville University and potential for future development as a leader. [Student Affairs]

Robertson Library Garden Botany Internship. Awarded to a rising sophomore, junior or senior with a CGPA of 2.5 or greater, with first preference to biology majors with a botany option, who must demonstrate an interest in pursuing advanced study or a career in horticulture, horticultural taxonomy, landscape design or other related disciplines in botany, and will be the student deemed most capable of completing a successful project in a timely manner. The internship is not renewable. [Biology]

Henry J. Rutherford Memorial Award. Awarded to a junior or senior who has been constructively involved in environmental action and environmental enrichment activities. [Priority Club Advisor]

Michael Scott Sawicki Memorial Award. Awarded to an incoming or present student at Millersville who engages in community service. Selected students must have a GPA of at least 2.5, with first preference to a Lancaster Catholic High School graduate. [Financial Aid]¹

Irene P. Seadle German Section Award. Awarded to a senior German major who has done excellent work in German studies and contributed significant service to the German section. [Language and Culture Studies]

Social Work Faculty Award. Awarded to a senior social work major for academic excellence. [Social Work]

Social Work Organization Award. Awarded to a senior social work major for academic excellence and contributions to the Social Work Organization. [Social Work]

Society for the Advancement of Management Award. Presented by the Millersville student chapter of S.A.M. to a junior or senior who has maintained at least a 3.0 GPA and exhibited outstanding management potential through participation in cocurricular activities in business administration. [Management and Marketing]

Charles D. Spotts Naturalist-Humanist Award. Awarded to a student who has contributed most to the naturalist-humanist ethic. [Entomology Club Advisor]

Mary R. Slokum Sproul Prize. Awarded to a student for excellence in public speaking. [Communication & Theatre]

Starbrad Excellence in Science Award. Awarded to a student who is majoring in one of the sciences, with first preference to chemistry, and who is participating in an internship for which he or she is receiving no pay. [Experiential Learning & Career Management]

J. Richard Steinmetz Technology Teaching Award. Awarded to a technology education senior who, in the judgment of the industry and technology faculty, has high potential to become a successful teacher, as evidenced by outstanding performance in student teaching and excellence in professional technical areas. [Applied Engineering, Safety & Technology]

Mark Stine Scholastic Attainment Award. Awarded to a junior and a senior who have pursued higher education primarily on a part-time basis and who have had special family responsibilities, or who have overcome cultural challenges. Students admitted on nondegree status are eligible. [Honors and Awards Committee]

Anna Tunis Summy Print Award. Awarded for outstanding achievement by a student who has produced the best print in the art department's printmaking classes, as judged by a jury of art department faculty. [Art & Design]

Anna Tunis Summy Watercolor Award. Awarded to a student demonstrating special talents and contributions related to visual arts and specifically the watercolor medium. [Art & Design]

Ronald E. Sykes Artist-Teacher Award. Awarded to the art education student teacher who has achieved the highest GPA based on 30 or more Millersville art credits. [Art & Design]

William S. Trout Award. Awarded to a junior or senior English education major or a French, German, Spanish education major, or a middle-level English language arts major with a minor in American literature or general English who has a cumulative GPA equal to or greater than 2.5, and a minimum 3.0 GPA in English courses. Candidates should document their commitment to involvement in creative writing (poetry, fiction and/or essay). In addition, applicants are required to document a commitment to community service, such as participation in campus, local or regional literary groups; involvement with in-school programs; tutoring K-12 students; practicum internships; or volunteering in educational programs for senior citizens. An application for the Trout Award is required, as is one of the following: an essay of 3-5 pages based on a poem or poems of William S. Trout, a lesson plan used during student teaching that focuses on a poem or poems by William S. Trout, or a paper submitted as part of a course requirement that includes a discussion of one or more of William S. Trout's poems. [English]

Gail and Kenneth Twiford Biology Award. Awarded to a full-time student majoring in biology who has a 2.75 or greater GPA and financial need. If awarded to a first year student, the recipient must be in the top 15 percent of his/her high school class. The award is renewable, provided the recipient continues to be a biology major, sustains a GPA of 2.75 or greater and continues to have financial need. [Biology]¹

Cecil M. Upton Organic Chemistry Award. Awarded to the outstanding student in the organic chemistry course sequence. [Chemistry]

John A. Van Horn Memorial Award for Applied Physics. A book to a senior physics major who demonstrates outstanding ability in applied physics. [Physics]

Louis Vyner Performance Award. Awarded to a full-time music major, selected by an audition committee of the music department on the basis of outstanding performance in the field of music and demonstrated academic excellence. [Music]

Steven A. Walker Memorial Award. Awarded to one or more junior or senior Spanish majors who have done excellent work in Spanish studies

and contributed significantly to the Spanish Club. [Language and Culture Studies]

Wentzel-Wright Memorial Award. Awarded to a student at the end of the junior year, payable upon enrollment for the second semester of the senior year, on the basis of financial need, industry, service to the University community, participation in campus activities, scholarship, good character, integrity, honesty and professionalism. [Honors and Awards Committee]

Wickersham-Burrowes Fund for Excellence in the Arts. Awarded to a student or students in the arts, with first preference to provide nontuition assistance for examples that may include, but again are not limited to, travel expenses for national or international study abroad, instrument rental or purchase fees, and art supplies. Remaining funds may be used to provide scholarship assistance to students with financial need majoring in the arts. An application is required. Funding support is renewable (for a maximum of three years), but an application is required each year. [Director of Ware Center]

Ruth Fox Wilkinson Award. Awarded to a graduating senior who has attained the highest average in early childhood or middle-level education courses. [Early, Middle & Exceptional Education]

WIXQ Service Award. Awarded for outstanding service to the University radio station. [WIXQ]

Edna Rochow Workman Memorial Award. Awarded to a junior or senior art major who has produced the best painting in oil or related media during the academic year. [Art & Design]

Xenophile-Theodore H. Rupp Foreign Language Award. Awarded to a senior for excellence in foreign languages. [Language and Culture Studies]

¹ The University scholarships are awarded to first-year incoming students. For more information regarding how to apply for first year scholarships, contact the admissions office.

University Calendar

2023-2024

Fall Term 2023

Date	Event
THU AUG 17	Move-in for first-time-in-college residential students begins
SUN AUG 20	Move-in for returning students
MON AUG 21	Fall classes begin
MON SEP 04	Holiday (no classes)
FRI TBD	Marauder Family Weekend
SAT TBD	Marauder Family Weekend
FRI OCT 08	Fall recess begins after last class
WED OCT 11	Fall recess ends at 7:00 a.m.
FRI OCT 13	Homecoming Weekend
SAT OCT 14	Homecoming Weekend
TUE NOV 21	Thanksgiving recess begins after last class
MON NOV 27	Thanksgiving recess ends at 7:00 a.m.
MON DEC 04	Last day of classes

TUE DEC 05 Through SAT DEC 09	Evaluation period (special class schedule)
SAT DEC 09	Commencement; End of Fall Term

Winter Term 2024 (5 weeks)

Date	Event
MON DEC 11	Winter classes begin
SUN JAN 14	Winter classes end after last final examination
MON JAN 15	Holiday (no classes)

Spring Term 2024

Date	Event
TUE JAN 16	Spring classes begin
MON MAR 04	Spring recess begins at 7:00 a.m.
MON MAR 11	Spring recess ends at 7:00 a.m.
MON APR 29	Last day of classes
TUE APR 30 Through FRI MAY 03	Evaluation period (special class schedule)
SAT MAY 04	Spring Commencement; End of Spring Term

Summer Term 2024 (14 weeks)

Date	Event
MON MAY 06	Summer 1 classes begin
MON MAY 27	Holiday (no classes)
WED JUN 19	Holiday (no classes)
JUL 04	Holiday (no classes)
FRI AUG 09	Summer classes end

Fall Term 2024

Date	Event
MON AUG 26	Fall classes begin

GRADUATE

The provisions of this catalog are not to be regarded as an irrevocable contract between the student and Millersville University of Pennsylvania. The University reserves the right to change any provisions or requirements at any time.

P.O. Box 1002
Millersville, PA 17551-0302

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www.millersville.edu (<https://www.millersville.edu/>)

Unless otherwise noted, telephone numbers shown in this catalog are within the 717 area code.

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Information contained herein was current at the time of publication. Courses and programs may be revised; faculty lists and other information are subject to change without notice; course frequency is dependent on faculty availability. Not all courses are necessarily offered each session of each year. Individual departments should be consulted for the most current information.

A member of Pennsylvania's State System of Higher Education.

All requests to Millersville University of Pennsylvania under the Right-to-Know Law must be submitted in writing to:

Agency Open Records Officer
Millersville University of Pennsylvania
P.O. Box 1002
Millersville, PA 17551-0302
Phone: 717-871-7551
Fax: 717-871-5050
Email: agencyopenrecords@millersville.edu

Millersville University does not discriminate on the basis of race, color, religion, national origin, ancestry, sex, age, or disability in admission or access to, or treatment or employment in, its programs and activities. This includes Title VI of the Civil Rights Act of 1964, Title IX of the Educational Amendments of 1972, and the Americans with Disabilities Act of 1990.

Coordinators: Services for Students with Disabilities—Dr. Sherlynn Bessick, Director, Office of Learning Services, Lyle Hall, 717-871-5554; Title VI and Title IX—Elizabeth Swantek, Office of the Vice President of Student Affairs and Enrollment Management, Student Memorial Center, 717-871-4100; ADA Coordinator—Mr. Patrick Weidinger, Director of Safety and Environmental Health, Dilworth Building, 717-871-4240.

Policy on Auxiliary Aids

Millersville University does not discriminate on the basis of disability status in admission or access to its programs and activities. Individuals are encouraged to make the University aware of any permanent or temporary disability. Arrangements will be made to secure auxiliary aids and services, when necessary, to ensure that such students are not denied the benefits of, excluded from participation in, or otherwise subjected to discrimination under programs and/or activities at Millersville University. This policy extends to full-time, part-time and nondegree students, and students enrolled in both credit and noncredit courses.

Introduction

The University

Innovation in education is the philosophy of Millersville University. Established in 1855, the University formally began offering master's degree programs in 1959, but prior to that time was involved in graduate education for the Commonwealth. In 1982, the Pennsylvania Legislature passed Senate Bill 506, creating the State System of Higher Education, effective July 1, 1983. On that date, Millersville State College became Millersville University of Pennsylvania.

From its mid-19th-century proportion of one building on seven-and-a-half acres, Millersville University has grown to a 250-acre campus with more than 60 buildings. The landscaped setting has a central pond set within lawns and gardens. The University's modern research facilities, blended with Romanesque Revival structures and late-Victorian wooden frame houses, reflect its integration of contemporary and classical elements of education. Simultaneously innovative and traditional, this setting encourages close faculty-student relationships as an important component of academic and personal development.

Accreditation

Millersville University is accredited by the Middle States Commission on Higher Education, 3624 Market Street, Philadelphia, PA 19104, phone (267) 284-5000; the Pennsylvania Department of Education; and is approved by the American Association of University Women. Teacher education programs are accredited by the National Council for Accreditation of Teacher Education, and the University is a member of the American Association of Colleges for Teacher Education. The respiratory therapy program is accredited by the American Medical Association Committee on Allied Health Education and Accreditation. The social work program is accredited by the Council on Social Work Education. The music program is accredited by the National Association of Schools of Music. The nursing program is accredited by the Commission on Collegiate Nursing Education (CCNE). The chemistry program is accredited by the American Chemical Society. The computer science program is accredited by the Computer Science Accreditation Board. The occupational safety and environmental health program is accredited by the Accreditation Board for Engineering and Technology. The industrial technology program is accredited by the National Association of Industrial Technology. The technology and innovation program is in full compliance with the International Technology Education Association/Council on Technology Teacher Education guidelines for technology teacher education. The business administration program is accredited by the Association of Collegiate Business Schools and Programs. The school psychology certification program is accredited by the National Association of School Psychologists. The art program is accredited by the National Association of Schools of Art and Design. The Center for

Counseling and Human Development is accredited by the International Association of Counseling Services.

The Community

Millersville is in Lancaster County, the heartland of central Pennsylvania. The adjacent city of Lancaster, a growing metropolitan area, offers extensive shopping centers and excellent restaurants, theaters, and apartment complexes against a backdrop of rich, verdant farmlands. Millersville Borough has blocks of modern residences that share streets with 100-year-old homes; shopping facilities have been constructed without marring the community's essential beauty. The campus is within a two-and-a-half-hour drive of Philadelphia, Baltimore and Washington, D.C., and a three-and-a-half-hour drive of New York City.

Student Body

Enrollment at Millersville University is 7,000 students, 945 of whom are graduate students. Graduate students come from several states and foreign countries. The placement and employment rate of graduate students is excellent, exceeding 90 percent in most areas. Education and social service departments devote considerable attention to the placement of graduates. The liberal arts and science departments encourage their graduates to pursue doctoral or research programs.

Communicating With Students

At Millersville, an important way we keep in touch with our graduate students is through email, and we provide all graduate students with a free Millersville University student email account. Because we use email as an official way of communicating with students, you are required to activate your new Millersville University account and use it regularly, even if you possess another account through Yahoo, Hotmail, AOL or other service. Your Marauder Mail account is automatically generated at the time you register for coursework. Your email address is myVilleID@marauder.millersville.edu. To access your account, go to the University's homepage, click on the myVille link, then click on the Marauder Mail icon. If you need assistance, contact the Help Desk at 717-871-7777.

The College of Graduate Studies and Adult Learning website, available at www.millersville.edu/graduate (<http://www.millersville.edu/graduate/>), is an important resource for graduate students, containing current news and events information, access to the graduate student forms center, contact information for graduate studies staff and department graduate coordinators, financial assistance and research support, and other regularly updated information

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Admission Requirements

Admission Policy

Admission to a graduate program is granted without regard to race, color, national origin, gender, ancestry, age, handicap, marital status, lifestyle or religious creed. Admission decisions are based on the applicant's academic abilities and professional disposition reflected in a record sufficiently strong to support confidence that the applicant can participate effectively in the graduate community.

Admission to a Master's Degree Program

(See the appropriate Academic Program section for additional criteria.)

Admission decisions are based upon a combination of factors that may include grade-point average; official recommendations from those able to critically assess an applicant's ability to succeed in a graduate program; a written statement of goals; standardized test scores; academic preparation for work in the proposed field; the applicant's interests as matched with those of faculty; and, where appropriate, a successful interview.

Regular Admission

To be eligible for regular admission, an applicant must have earned a bachelor's degree from a regionally accredited four-year college or university in the United States or equivalent from a similar institution abroad. The applicant must demonstrate, in the opinion of the faculty and the dean of the College of Graduate Studies and Adult Learning, the ability to successfully complete a master's degree and must have achieved at least a 2.75 undergraduate grade-point average in all coursework attempted (unless otherwise specified by the academic program).

Conditional Admission

Applicants who do not meet the minimum admission requirements, but who show promise of success in a graduate program, will be considered for admission. Such applicants may be admitted on a conditional status, based on the departmental recommendation and a favorable review by the dean of the College of Graduate Studies and Adult Learning. Applicants admitted on conditional status will have conditions clearly stipulated in an offer of admission letter.

Upon satisfying the conditions—and with the favorable recommendation of the department and with the graduate dean's concurrence—the student will be fully admitted and allowed to continue toward degree candidacy. If the student is unable to achieve a 3.0 grade-point average, he/she will be dismissed from the program.

Application Procedure

Prospective students may apply electronically by visiting the Millersville College of Graduate Studies and Adult Learning website at www.millersville.edu/graduate/admissions/apply/index.php (<https://www.millersville.edu/graduate/admissions/apply/>). For an application to be considered complete, the following must also be submitted:

1. A nonrefundable application fee of \$40 payable at the time of submission of the electronic application (*application fee may be paid by check, American Express, Visa, MasterCard or Discover through the electronic application portal*).
2. Official copies of all transfer and undergraduate transcripts and official transcripts of any previous graduate work (*it is not necessary to send Millersville University transcripts*).

3. Three official recommendation forms submitted by professors or others capable of assessing the applicant's potential for success in a graduate program. Academic or supervisory/professional recommenders are preferred.
4. A written statement of academic and professional goals.
5. If required, an official score report for the Miller Analogies Test (MAT), the Graduate Record Examination (GRE), the Graduate Management Admissions Test (GMAT) or the Oral Proficiency Interview (OPI) and Writing Proficiency Test (WPT). See the *Admissions Testing* section for testing requirements by program.
6. Pennsylvania Public School Code requires updated background checks for employees and all persons who come into direct contact with children. All students, including M.Ed., supervisory, nondegree and post-baccalaureate candidates, must submit TB test and current criminal background clearances defined as being within one year of the issue date and extending through the duration of the field placement for any class requiring field experience.
7. Any additional information required by the specific department. Applicants should refer to the appropriate *Academic Programs* section of this catalog for additional individual program admission requirements.

Application Timelines

Master's degrees in School Counseling, School Psychology and Clinical Psychology have application deadlines as follows:

- January 15 for admission beginning fall.
- April 15 for admission beginning fall (on a space-available basis) for those who have missed the January 15 deadline.
- October 1 for admission beginning spring.

Master's degrees and Post Baccalaureate Certification in Family Nurse Practice have application deadlines as follows:

- January 15 for admission beginning fall.
- September 15 for admission beginning spring (fall start is on campus of Millersville University; spring start is at Central Penn College).

Master's degrees in Family Nurse Educator has a rolling admission process.

Master of Social Work degree program accepts applications for summer start only; the deadlines are as follows:

- November 30 for early decision.
- February 1 for full consideration applications.

All other graduate programs take applications on a rolling basis (i.e., no official deadline). However, applicants should use the stated deadlines above as a target. Applications take approximately four to six weeks for processing, so late applications may be considered for the following semester. Applicants admitted late on the rolling cycle may miss early course registration and not get their preferred courses in their first semester.

Admission to a master's degree program is contingent on the recommendation of the department in which the student proposes to study. After reviewing the application and supporting materials, the department may recommend regular or probational admission to a degree program. If the department recommends probational admission, the conditions shall be clearly stipulated. In either case, the applicant will

be notified of admission status by the College of Graduate Studies and Adult Learning.

Admissions Testing

Applicants for some degree programs are required to submit official score reports from an appropriate standardized test. Please note that scores for any test should not be more than five years old at the time of application. Minimum score requirements can be found in the *Academic Programs* section for specific programs. Test requirements by program are as follows:

Academic Program	Test Requirement
Art Education (M.Ed.)	None
Assessment, Curriculum and Teaching (M.Ed.)	GRE or MAT (only if GPA is lower than 2.8)
Early Childhood Education (M.Ed.)	None
Emergency Management (M.S.)	GRE or MAT (only if GPA is lower than 2.8)
English (M.A. and M.Ed.)	None
Gifted Education (M.Ed.)	GRE or MAT (only if GPA is lower than 3.0)
History (M.A.)	GRE (only if GPA is lower than 2.85)
Integrated Scientific Applications (M.S.)	GRE, MAT or GMAT (only if cumulative GPA is lower than 3.0)
Language and Literacy Education (M.Ed.)	GRE or MAT (only if GPA is lower than 3.0)
Languages and Cultures (M.A.)	ACTFL Spanish, German, French (OPI and WPT)
Leadership for Teaching and Learning (M.Ed.)	GRE or MAT
Mathematics (M.Ed.)	None
Nursing (MSN)	None
Psychology (M.S.) School, Clinical	GRE (only if GPA is lower than 3.0)
School Counseling (M.Ed.)	GRE (only if GPA is lower than 3.0)
Social Work (M.S.W.)	GRE or MAT (only if cumulative GPA from all credits is lower than 2.8)
Special Education (M.Ed.)	GRE or MAT
Sport Management (M.Ed.)	GRE, MAT or GMAT (only if GPA is lower than 3.0)
Technology and Innovation (M.S.)	GRE or MAT (only if GPA is lower than 3.0)

The test score is one of several criteria considered in the admissions process. The score alone is not a basis for denying admission. In cases where the score falls below a departmentally established level, an applicant may be asked to repeat the test.

Applicants are encouraged to become familiar with test formats prior to sitting for the examination. Further information can be obtained in the reference section of McNairy Library.

Applicants possessing a master's degree from a regionally accredited institution do not need to submit standardized admission test scores from the MAT, GRE or GMAT. They must submit an official master's degree transcript in addition to the official baccalaureate degree transcript. Note: A master's equivalency does not suffice for a master's degree.

Application to a Graduate Certificate or Certification Program

Applicants interested in a graduate-level certificate or certification program should consult the appropriate Academic Programs section for admission requirements that pertain to a specific program. Certification applicants must submit the Graduate Program Admissions Application and applicable supporting documents. See *Application Procedure* section.

Application as a Nondegree Graduate Student

Applicants should seek admission to the nondegree category if they are:

1. undecided about a graduate area of specialization;
2. not interested in a master's degree program;
3. seeking to earn Instructional II teaching certification;
4. interested in a graduate-level workshop, course or seminar; or
5. completing work for transfer to another institution (transient).

Applicants for nondegree studies must have completed a baccalaureate degree from a regionally accredited four-year college or university.

Admission as a nondegree student does not include admission to degree or certification programs. Nondegree students may apply for admission to a degree or graduate-level certification program after having accumulated graduate credits; however, no more than nine graduate credits, in nondegree status, may be transferred to a degree or graduate-level certification program, subject to departmental approval. Courses for transfer from nondegree status into a program must have received a satisfactory grade, and except in the most extenuating circumstances, no transfer credit will be allowed for work completed more than five years prior to admission to a degree or graduate-level certification program. It is imperative that applicants consult with the graduate program coordinator from their intended discipline to understand what courses are available to nondegree students.

A nondegree student is permitted to register for any graduate or undergraduate course not restricted by the department.

Application as a Transient Student

Those students desiring to take graduate work for transfer to another institution must, at the time of admission, present a statement from the proper official of the school accepting the work in transfer, indicating their satisfactory graduate student status. Transients must also complete the application for admission as a nondegree student. Further, it is the responsibility of transient students to request, in writing, that a transcript of completed work be forwarded to the appropriate institution.

Application as an International Student

Millersville University welcomes applications from prospective international students. In addition to satisfying general admissions requirements as stated on the Graduate Program Admissions Application, international applicants must demonstrate proficiency in the Test of English as a Foreign Language (TOEFL). TOEFL score requirements are 500 on the paper-based test, 183 on the computer-based test or 60-80 on the Internet-based test. The TOEFL is administered nationally. In lieu of the TOEFL, English language proficiency may be demonstrated by earning a score of "6" or higher on the International English Language Testing System (IELTS) exam.

Applicants possessing a baccalaureate degree earned at a non-U.S. institution must have official academic credentials sent to a recognized credential evaluation service for a course-by-course evaluation. One such service is World Education Services, Inc., at www.WES.org ([http://](http://www.WES.org)

www.WES.org). The WES ICAP (International Credential Advantage Package) is a service that allows applicants to store their verified academic transcripts with WES and have them delivered to Millersville University together with the credential evaluation report. Applicants who use the WES ICAP service do not need to submit an official transcript to Millersville University from the non-U.S. institution. The WES ICAP service verifies and authenticates the academic transcripts and delivers the transcripts and credential evaluation to Millersville University directly.

Applicants not using the WES ICAP service must submit to Millersville University an official academic transcript in their native language (with English translation) in a sealed envelope from the non-U.S. institution.

International applicants must also complete a financial disclosure form, also known as the Source of Funds.

Because of Pennsylvania teacher certification requirements, international applicants may not be admitted to the following programs: gifted education, language and literacy education, special education and early childhood education.

Semester Hours

Specific departmental requirements and the student's undergraduate preparation will determine the maximum number of hours for a master's degree; the *minimum* number of semester hours required are as follows:

1. 30 hours of approved graduate work beyond a bachelor's degree, including a thesis or research project; or
2. 33-60 hours of departmentally approved graduate work of an extended course sequence.

Students should consult with their advisor and discuss the specific program requirements in the *Academic Programs* section to ascertain the semester hours required in a particular degree program.

Research Option

The specific regulations pertaining to the research report and/or thesis are determined by the dean of the College of Graduate Studies and Adult Learning and the student's major department.

Nonresearch Option

Selected programs permit students to complete an extended course sequence (33-60 credits) in lieu of the thesis or research project.

Residency Requirement

Students must complete a minimum of two-thirds of their graduate degree or certification program at Millersville University in order to meet residency requirements.

Student Status

To be considered full-time, graduate students must be registered for at least 6 credits by the end of the drop/add period. This is effective May 8, 2023.

Time Limit

Work for the degree may be pursued over several years, which need not be in succession but must be concluded within a five-year (master's) or seven-year (doctoral) period. The five-year period begins the semester a student is accepted into a degree program. A reevaluation of coursework taken prior to admission to a degree program and an extension of time, usually an additional year, beyond this five- or seven-year limit may be granted by the dean of the College of Graduate Studies and Adult

Learning at the request of the student and upon the recommendation of the advisor and graduate program coordinator.

Second Master's Degree

Students interested in earning a second master's degree at Millersville in the same field must meet all course requirements for the second degree and complete no fewer than 24 semester hours of approved coursework beyond the requirements for the initial degree.

Certification Admission

Each certification applicant must submit a completed Graduate Studies Admissions Application and supporting credentials to the College of Graduate Studies and Adult Learning. In conformance with Pennsylvania Commonwealth regulations, these will be reviewed by qualified College of Education and Human Services officials. The number, type and level of courses required of individuals seeking post-baccalaureate certification will depend upon the academic and professional background of each applicant. As a generalization of requirements, most certification applicants will need to complete at least the Education Blocks of coursework, consisting of 15-18 semester hours, plus 12 semester hours of student teaching (one full semester). Requirements in the specialty areas will vary from applicant to applicant as a result of each individual's application and transcript review; therefore, no other general curriculum can be noted here. Questions concerning Pennsylvania Commonwealth regulations governing certification should be directed to the Certification Office, 717- 871-7362.

Applicants seeking admission to certification programs with an incoming GPA of less than 3.0 will have to complete the Teacher Certification Access Track (TCAT). Under this provisional status, students must earn a GPA of 3.0 or higher in each of four post-baccalaureate courses comprising the TCAT requirements. Additionally, students may need to meet additional requirements before they will be granted full admission to the post-baccalaureate certification program. Individual requirements will be outlined in the student's letter of admission.

Teacher Certification Testing

All Millersville University students who complete the requirements for an initial teacher education certificate through a master's degree—or an approved program of post-baccalaureate or postgraduate studies—will be required to take specialty area tests before receiving the certificate. Official test scores must be received by Millersville University directly from the testing agency.

Mandated by the State Board of Education, Commonwealth of Pennsylvania, these tests must be passed to qualify for Instructional or other Professional Personnel Certificates.

Instructional I Certification

Instructional I certification is required for entry into a teaching position in Commonwealth of Pennsylvania schools.

Applicants interested in earning teacher certification, whether in addition to certification obtained through an undergraduate teacher education program or as a supplement to a liberal arts baccalaureate program, should contact the Certification Office, 717- 871-7362.

Instructional II Certification

Requests for Instructional II certification are made directly by in-service teachers to the Pennsylvania Department of Education at 333 Market Street, Harrisburg, PA 17126-0333; 717-787-3356.

Those planning to satisfy continuing professional education requirements at the graduate level are encouraged to consider a master's degree program. Through academic advisement and careful development of a program of study, teachers can simultaneously pursue certification and a master's degree.

Teachers interested in completing Instructional II certification requirements at the graduate level must contact the College of Graduate Studies and Adult Learning for admission information.

Reading Specialist Certification

Millersville University is an approved provider of a Reading Specialist Certification. Persons who have a valid Pennsylvania Instructional I or Instructional II certificate and have enrolled in and completed the Millersville University Reading Specialist courses are eligible to receive reading specialist certification from the Pennsylvania Department of Education.

ESL Certification

Millersville University is an approved provider of a Program Specialist-ESL certificate program. Persons who have a valid Pennsylvania Instructional I or Instructional II certificate and have enrolled in and completed the Millersville University ESL program are eligible to receive ESL add-on certification from the Pennsylvania Department of Education.

Educational Specialist I Certification

Educational Specialist I certification is required for entry into guidance and school psychology positions in Commonwealth of Pennsylvania schools. An Educational Specialist II certificate is acquired through the recommendation of the school district superintendent.

Degree Requirements

Departmental Requirements

Each department has the option of using the degree candidacy process and will describe the specifics of its degree candidacy process. The general evaluation is based on:

1. the student's performance in graduate study to date;
2. in certain departments, the results of a departmental examination; and
3. other criteria appropriate to the field as determined by the department.

If a student is unsuccessful in the initial attempt to earn degree candidacy, he/she may petition the department for a second evaluation. Prior to the second attempt, the student must be advised by the department of the areas in which performance was deficient and of any other factors that were considered in the denial of the student's admission to degree candidacy. The results of the candidacy evaluation will be forwarded to the College of Graduate Studies and Adult Learning.

The final phase of the candidacy process is the development of a program of study for the remaining requirements in the degree program.

This program of study should be developed in consultation with an advisor, and copies should be filed in the department.

Degrees and Programs

The graduate programs at Millersville University are designed to provide opportunities for post-baccalaureate students to pursue scholarly and research activity, and to obtain knowledge in an advanced field of study. Graduate programs are offered in the following areas:

Doctor of Educational Leadership

Doctor of Nursing Practice

Doctor of Social Work

Educational Specialist in School

Psychology

Master Of Arts

- English
- History

Master Of Education

- Art Education
- Assessment, Curriculum and Teaching
 - Online Teaching
 - STEM Education
 - Certification
 - Inclusive Practices
- Early Childhood Education
- English
- Gifted Education
- Language and Literacy Education
 - ESL
 - Reading Specialist
- Leadership for Teaching and Learning
 - General Education
 - Music Education
- Mathematics
- School Counseling
- Special Education
- Sport Management
 - Athletic Management
 - Athletic Coaching

Master Of Science

- Emergency Management
 - Communications Management
- Integrated Scientific Applications
 - Environmental Systems Management
 - Weather Intelligence and Risk Management
 - Geoinformatics
 - Climate Science Applications
 - Space Weather and Environment: Science, Policy, and Communication.
- Nursing

- Family Nursing Practice
- Nurse Educator
- Nurse Leadership
- School Nurse
- Psychology
 - Clinical Psychology
 - School Psychology
- Technology and Innovation
 - Education
 - Enterprise Concentration

Master Of Social Work

- Social Work
- Social Work and Emergency Management (MSW/MSEM Dual Degree)
- Social Work and Sport Management (MSW/M.Ed. Dual Degree)

Post-Master's Certificate

- Family Nurse Practitioner
- Nursing Education

Post-Master's Certification

- Elementary and Secondary Counseling (PreK-12)
- Principalship
- School Psychology
- School Social Work

Supervisory Certification

- Art Education
- Communication (English)
- Curriculum and Instruction
- Early Childhood Education
- Elementary Education
- World Languages
- Mathematics
- Music Education
- Reading Education
- School Guidance Services
- School Health Services
- School Psychological Services
- Science
- Social Studies
- Special Education

Graduate Certificates and ENDORSEMENTS

- Coaching Education Letter of Completion
- Emergency and Disaster Management Certificate
- Expressive Arts Certificate
- Gifted Education Certificate
- Gifted Endorsement
- Home and School Visitor Certificate
- Literacy Coaching Endorsement

- Online Teaching Endorsement
- Space Weather and Environment: Science, Policy, and Communication Writing Certificate
- STEM Teaching Endorsement
- Writing Certificate

Post-Baccalaureate Certification Programs

- Art (PK-12)
- Biology (7-12)
- Chemistry (7-12)
- Early Childhood Education (PK-4)
- Earth and Space Science (7-12)
- English (7-12)
- English as a Second Language–Program Specialist (requires an existing Instructional I certification)
- Mathematics (7-12)
- Music (PK-12)
- Physics (7-12)
- Reading Specialist (PK-12) (requires an existing Instructional I certification)
- School Nurse (requires a bachelor's degree)
- Social Studies (7-12)
- Spanish (PK-12)
- Special Education
- Technology Education (PK-12)

M.ED. Professional Core

Master of Education degree programs are designed to enable the student to become highly skilled as a professional practitioner in education. Each M.Ed. curriculum includes a component in the respective subject matter (e.g., art, elementary education, English, etc.) and a common set of courses in the philosophical, psychological and sociological principles involved in teaching and learning.

The professional core is intended to support candidates to acquire the knowledge, skills and dispositions of the Professional Education Unit and the conceptual framework, Communities of Learners. *Thus, core courses should be scheduled early in a student's program.*

Professional Core Requirements: 3 courses (9 credits)

Code	Title	Hours
Required Courses		
EDFN 601	Research Methods	3
Select one of the following:		3
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
EDFN 545	Advanced Educational Psychology	
PSYC 625	Human Growth and Development	
Select one of the following:		3
EDFN 511	Comparative Education	
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	

EDFN 604 Education and Public Policy

Total Hours**9**

Faculty in the educational foundations and psychology departments teach the professional core courses. For descriptions of courses with the "EDFN" prefix, see *Educational Foundations* in the *Academic Programs* section; courses with the "PSYC" prefix are listed under *Clinical Psychology, School Psychology and School Counseling* in the same section.

Noncredit Programs

The College of Graduate Studies and Adult Learning (CGSAL) is the administrative hub for graduate studies, including admissions, preadmissions and nondegree student advisement. CGSAL offers doctoral degrees and over 50 master's degrees as well as professional certifications across a wide variety of arts, science, education and other professional disciplines. Programs and course offerings are tailored to the educational needs and lives of adult learners. CGSAL also offers a wide variety of noncredit programs for adult learners, businesses, industries, schools and various agencies through Educator Source, the Nonprofit Resource Network and the Corporate University. Courses can be designed to meet the specific needs of clientele. Corporate University works with companies to facilitate their access to training grant funds.

The Corporate University at Millersville provides customer-focused professional development opportunities designed to enhance the effectiveness of the individual and the organization. With a focus on leveraging industry/government partnerships, we pledge to help strengthen the region's workforce. The Certified Public Manager® program is a nationally accredited comprehensive management development program open to managers in federal, state and local government agencies and nonprofit organizations. The program's primary goal is to improve the performance of public-sector managers and the organizational performance of state, local and federal governments. For information, contact the Corporate University, with offices conveniently located in Millersville, Harrisburg and Lancaster, at 717-871-7642 or corpu@millersville.edu.

The Nonprofit Resource Network at Millersville enhances the effectiveness of nonprofit organizations by providing professional development, networking opportunities and access to critical information resources. For information, contact the Nonprofit Resource Network, with offices conveniently located in Millersville, Harrisburg and Lancaster, at 717-871-7178 or nrninfo@millersville.edu.

Professional Development for Educators

In addition to our graduate degree programs, Millersville University offers graduate-level professional development opportunities for educators. Through Summer Institutes for educators, certificate programs, and other customized learning opportunities and partnerships, Millersville University faculty provide timely, convenient, professional development options of the highest quality for Pennsylvania educators. Our offerings, grounded in the 21st-century pedagogical principles, meet educators' needs by integrating a theoretical foundation and research-based practical strategies to apply in classrooms. Professional development is offered on campus, on-site in district and intermediate units, and via technology—either all online or a blend of in-class meetings and online. For more information about professional development opportunities for educators, please contact the College of Graduate Studies and Adult

Learning at 717-871-4723 or at profdev@millersville.edu, or visit the website at www.millersville.edu/graduate/programs/educators (<https://www.millersville.edu/graduate/programs/educators/>).

Supervisory Certification Program Program Coordinators

Art Education

- Leslie Gates, Ph.D.

Curriculum and Instruction (K-12)

- Tiffany Wright, Ed.D.

Music Education

- Mícheál Houlahan

Ph.D. Reading Education

- Aileen P. Hower

Ed.D. School Guidance Services

- Nadine Garner, Ed.D.

School Health Services

- Dawn Lambert, Ph.D.

School Psychological Services

- Lauren Kaiser, Ph.D.

Special Education

- Richard Mehrenberg, Ph.D.

A post-master's program in educational supervision is offered for the experienced educator in the areas of art, communication (English), curriculum and instruction, elementary education, world languages, mathematics, music, reading, school guidance services, school health services, school psychological services, science, social studies and special education.

The supervisory certification program prepares experienced school personnel to assume leadership roles in an educational setting. This program, offered on a post-master's level, complies with the Commonwealth's certification mandate for educational supervisors and meets Supervisory I certification requirements.

Admission Requirements

Eligible applicants should contact the appropriate coordinator at the time they apply to the program.

The standard degree application must be completed: three letters of recommendation, a professional goals statement and an official transcript of undergraduate and graduate work. Miller Analogies Test and Graduate Record Exam scores do not need to be submitted.

The application materials will be evaluated by the appropriate department, and an admission recommendation will be forwarded to the College of Graduate Studies and Adult Learning.

Applicants must hold *Instructional II* certification in the subject area in which the supervisory certification is sought and have earned a master's degree (or be pursuing one concurrently).

Applicants for School Health Services must hold a "Specialist II" in school nursing certification and have earned a master's degree.

Note: Before supervisory certification is granted, five years of appropriate experience is required. For supervisory certification in reading, five years of instruction in a literacy setting is required.

The Program

The program consists of 15 credits, including three core courses and a six-credit field experience. In exceptional cases, an approved substitution may be made for one of the core courses.

Code	Title	Hours
Required Courses		
EDSU 700	Functions Supervision	3
EDSU 701	Administrative Supervision	3
EDSU 703	Curriculum and Supervision	3
EDSU 799	Applied Practicum ¹	6
Total Hours		15

¹ *These courses do not need to be taken in order; however, EDSU 700 Functions Supervision, EDSU 701 Administrative Supervision and EDSU 703 Curriculum and Supervision should be completed before beginning EDSU 799 Applied Practicum.*

The field experience demands a high degree of cooperation between the University and the school where the student is employed or assigned. The student is supervised by a faculty member from the department/area in which the certificate is sought. It is important that the candidate give due consideration to this aspect of the program, since in some cases it may be necessary for the student to take a sabbatical or leave of absence in order to meet the requirement of the field experience.

Consult the appropriate department section in this catalog for a description of field experience. Field experiences vary, but generic competencies apply to all program areas. These include:

1. Knowledge of recent research and application of basic research tools and techniques to problems encountered in supervisory positions.
2. The ability to work with paraprofessionals, teachers, student teachers and the auxiliary staff.
3. Skill in curriculum planning and evaluation.
4. Ability to coordinate supporting services to the major curriculum components, such as speech therapy, dental hygienist, and home and school visitors.
5. Ability to review and assess various curriculum needs and recommend changes as deemed necessary.

Course Descriptions

EDSU 700 Functions of Supervision (3) Interpersonal processing, data gathering in analysis of classroom teaching, simulation, microteaching, staff development, in-service program development and staff selection.

EDSU 701 Administrative Aspects of Supervision (3) Administrative theory, budget development and school finance, certification, teachers'

and students' rights and responsibilities, school law, tenure and collective bargaining.

EDSU 703 Curriculum and Supervision (3) Describe and analyze a curriculum plan, formulate a set of criteria for evaluating a curriculum plan, study roles of various persons in curriculum planning. Identify and evaluate characteristics, features and trends of education programs on levels K-12.

(*) 799 Applied Supervision (6) A one- or two-semester arrangement for a total of six credits for any of the content areas listed as follows:

(*) ART 799 Applied Supervision: Art Education (6) A field-based experience to develop the candidate's leadership abilities, articulation of philosophy of art education, and supervisory competencies. Activities may include curriculum and staff development, budgeting and the public relations function, among others. Prereq: EDSU 700, 701 and 703. Offered as needed.

(*) SCCN 799 Applied Supervision: Guidance Services (6) A field-based experience designed to develop the candidate's leadership abilities in the implementation and supervision of comprehensive developmental guidance programs. The American School Counselor Association National Model provides guidelines for supervision. Prereq: EDSU 700, 701 and 703.

(*) EDCI 799 Applied Supervision: Curriculum and Instruction K-12 (6) A field-based experience designed to develop the candidate's leadership abilities K-12. Comprehensive involvement in on-site activities, including classroom observations K-12, required research, policy and skill competencies. Specific activities include the demonstration of effective communication, staff development, budgeting and the ability to integrate curriculum across disciplines K-12, in addition to other activities at the elementary and secondary levels. The field experience demands a high degree of cooperation between the University and the school where the student is employed or assigned. Prereq: EDSU 700, 701 and 703. (*) EDSU 799

Applied Supervision: Single Subject Area (6) Required field experience for those seeking supervisory certification in English, world languages, mathematics, science or social studies. The student submits a work/study proposal which must include a unit of work involving the observation and supervision of teachers and selected other units of work from such areas as scheduling, budget preparation, staff development, curriculum, community relations, etc. All proposals must be approved by the Department of Educational Foundations and sanctioned by the administration of the school where the field experience is to occur. Prereq: EDSU 700, 701 and 703.

(*) ELED 799 Applied Supervision: Elementary Education (6) Internship in supervision to take place in schools or educational situations under the direction of the graduate faculty of the Department of Early, Middle and Exceptional Education. Prereq: EDSU 700, 701 and 703. (*) MUSI 799 Applied Supervision: Music Education (6) A clinical field experience through which candidates demonstrate a variety of competencies under practical clinical conditions. Prereq: EDSU 700, 701 and 703.

(*) NURS 799 Applied Supervision in School Health Services (6) Provides field experiences in a school setting, with emphasis on the comprehensive role of school health services supervision—in particular, methods for personnel evaluation, observing and supervising school health personnel budget, staff in-service development, health curriculum

evaluation and school health program assessment/revision, and community relations. Prereq: EDSU 700, 701 and 703.

(* PSYC 799 Applied Supervision: Psychological Services (6) Provides a field experience in the various activities performed by the supervisor of psychological services. The student is placed with a supervisor of psychological services who, in cooperation with University personnel, plans a relevant program of practical experiences for the intern, based on the comprehensive role of the supervisor of psychological services. Prereq: permission of director of school psychology and EDSU 700, 701 and 703.

(* RDED 798 Advanced Theoretical Pedagogy of Reading (3) Advanced theoretical pedagogy of reading and the supervision of literacy instruction. Principles of supervision and progressive discipline; principles of staff development; evaluation of staff development and curriculum auditing practices. Site-based supervision of staff development and coaching. Prereq: EDSU 700, 701 and 703. Offered periodically.

(* RDED 799 Applied Supervision: Reading Clinic (3) Supervision of teachers working in a classroom and in a reading clinic, complete with observations and follow-up conferences. Written case reports on teachers supervised will be required. Prereq: EDSU 700, 701 and 703. Offered periodically.

(* SPED 681 Administration and Supervision of Special Education Programs (3) Current issues and practices of special education curriculum and instruction, school law, budget process, staff development, teacher supervision, family collaboration and public relations are analyzed. Discussions are geared to effecting change to meet standards, student needs and best practices for students with special needs. Prereq: acceptance into department supervisory program; may be taken concurrently with EDSU 700, 701, 703; must be taken prior to SPED 799. Offered periodically

(* SPED 799 Applied Supervision: Special Education (6) Provides prospective supervisors with field experience and problems encountered in the schools. Emphasis is upon defining and identifying pupils in all areas of exceptional ability, planning and operating a comprehensive special education program, and on techniques in assisting teachers in evaluating and improving their curricula and their teaching techniques. Prereq: EDSU 700, 701, 703 and SPED 681.

University Calendar

2023-2024

Fall Term 2023

Date	Event
THU AUG 17	Move-in for first-time-in-college residential students begins
SUN AUG 20	Move-in for returning students
MON AUG 21	Fall classes begin
MON SEP 04	Holiday (no classes)
FRI TBD	Marauder Family Weekend
SAT TBD	Marauder Family Weekend
FRI OCT 08	Fall recess begins after last class
WED OCT 11	Fall recess ends at 7:00 a.m.
FRI OCT 13	Homecoming Weekend
SAT OCT 14	Homecoming Weekend

TUE NOV 21	Thanksgiving recess begins after last class
MON NOV 27	Thanksgiving recess ends at 7:00 a.m.
MON DEC 04	Last day of classes
TUE DEC 05 Through SAT DEC 09	Evaluation period (special class schedule)
SAT DEC 09	Commencement; End of Fall Term

Winter Term 2024 (5 weeks)

Date	Event
MON DEC 11	Winter classes begin
SUN JAN 14	Winter classes end after last final examination
MON JAN 15	Holiday (no classes)

Spring Term 2024

Date	Event
TUE JAN 16	Spring classes begin
MON MAR 04	Spring recess begins at 7:00 a.m.
MON MAR 11	Spring recess ends at 7:00 a.m.
MON APR 29	Last day of classes
TUE APR 30 Through FRI MAY 03	Evaluation period (special class schedule)
SAT MAY 04	Spring Commencement; End of Spring Term

Summer Term 2024 (14 weeks)

Date	Event
MON MAY 06	Summer 1 classes begin
MON MAY 27	Holiday (no classes)
WED JUN 19	Holiday (no classes)
JUL 04	Holiday (no classes)
FRI AUG 09	Summer classes end

Fall Term 2024

Date	Event
MON AUG 26	Fall classes begin

2023-2024

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Fall Term 2024

Date	Event
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Academic Policies

Student Rights and Responsibilities

Upon admission to a graduate studies program, the student assumes responsibility for knowing program requirements and following established procedures. Conversely, the student has the right to expect that all program requirements will be made clear and that all course requirements, including grading criteria and procedures, will be made known. The student has the right to instruction that encourages the free and open discussion of ideas and which respects reasonable student needs and aspirations. It is the student's responsibility to contribute to classroom decorum and an atmosphere that encourages maximum learning. Further, each student is entitled to academic advisement but must initiate the advisement process by scheduling appointments with either the graduate program coordinator in the case of degree admission, or with the dean of the College of Graduate Studies and Adult Learning in the case of nondegree admission status.

Advisement

Each student is assigned a faculty advisor upon admission to a graduate program. It is the student's responsibility to initiate contact with that advisor to develop an initial program of study and to meet with him/her

prior to each registration period. It is the responsibility of the advisor to provide academic counseling in light of program requirements and the student's personal and professional goals.

Academic Standing

Graduate degree students are required to maintain a 3.0 grade-point average. A student who fails to meet the scholarship standards may be dismissed from a graduate degree program. If a student falls below a 3.0 average, he/she will be placed on probation. Failure to raise the grade-point average to a minimum of 3.0 during the next semester in which the student is enrolled will result in dismissal from graduate studies at Millersville University. (Summer is considered a semester.)

Graduate students who earn two grades of C+, C or C-, or any combination thereof, will receive an academic warning, regardless of GPA. Earning a third grade of C+, C or C- will result in academic dismissal, regardless of GPA. This includes any courses which have been repeated and replaced with a higher grade. A C+, C or C- grade earned at Millersville University may not be made up at another institution of higher learning for the same course.

A graduate student earning an F grade in any course will be dismissed from graduate study at Millersville University. An F grade earned at Millersville University may not be made up at another institution of higher learning for the same course.

Individual departments may have scholarship requirements beyond this minimum level; students should consult their advisor and the *Academic Programs* section of the catalog.

Academic Dismissal and Appeal

Students may appeal dismissal to the Graduate Academic Appeals Committee (GAAC). Students who have been dismissed and believe specific, unusual circumstances affected their academic performance may request a review by writing a letter of appeal to the GAAC. For the appeal to be considered before the next semester, it must be received by the committee by the date specified in the notice of dismissal. Information and forms regarding graduate appeals may be found at www.millersville.edu/graduate (<https://www.millersville.edu/graduate/>) or by calling 717-871-4723. After GAAC's decision, if an appellant believes the appeal process was not administered as prescribed herein, the appellant may pursue an appeal of the process, but not the academic decision, in writing, to the dean of the College of Graduate Studies and Adult Learning. Such an appeal must be made within 10 business days from the date of the decision letter from the chairperson of the GAAC. The appellant is advised to provide as much written documentation as possible, describing why the process was not administered as prescribed herein, and any supporting materials. The decision of the dean of the College of Graduate Studies and Adult Learning regarding the process appeal is final and not subject to further review.

Any student who is dismissed from the University for poor academic performance may apply to be readmitted to their academic program one calendar year from the date of the dismissal, provided it is their first dismissal. A student may only appeal for reinstatement one time. Upon the second dismissal the student may not appeal and is no longer eligible for admission to any Millersville University graduate program.

Graduate Grading Policies

Regular Graduate Courses

Graduate-level courses are those regular courses taught at the 500, 600, 700 and 800 levels. Undergraduate courses (100-400 level) may not be counted for credit in a graduate degree program.

Each instructor establishes his or her own grading policy and states it clearly and in writing at the beginning of the course. Appropriate learning outcomes and measurement systems are built into each course structure to evaluate each graduate student's achievement. Instructors in dual-numbered courses (courses that have cross-listed undergraduate and graduate sections) will clearly differentiate the undergraduate assignments, grading systems and other relevant instructional methods in writing at the beginning of the semester.

The grade-point average (GPA) is a comprehensive evaluation of a student's academic standing. The letter grades used in graduate-level courses and their associated grade-point values are as follows: A (4.0), A- (3.7), B+ (3.3), B (3.0), B- (2.7), C+ (2.3), C (2.0), C- (1.7) and F (0.0). In addition, grades of H (Honors), P (Pass), W (Withdrawal), I (Incomplete) and AU (Audit) may also be used. Grades of H, P, W, I and AU are not used in computing the grade-point average. Grade-point average will be rounded to two places.

University policy accepts a C as minimum earned credit. Individual departments may have scholarship requirements beyond this minimum level; students should consult their advisor.

The *semester GPA* is the number of grade points earned in Millersville courses in a semester divided by the number of credits in the semester for which grades calculated in the GPA were earned. Grade points for each course are calculated by multiplying the grade-point value by the number of credits for the course.

The *cumulative GPA* (CGPA) is the total number of grade points earned in Millersville courses divided by the number of Millersville GPA credits. Credits from audited courses, subsequently repeated courses and transfer credits are not included in the CGPA.

Incomplete Grades

A student, upon consultation with the instructor, may receive a grade of Incomplete. The student has the responsibility to complete the appropriate work as outlined by the instructor by the end of the following regular term. In the case of research reports and theses, the grade of Incomplete must be resolved within one calendar year. If a change of grade is not made by the instructor to indicate completion of requirements in the appropriate time span, the grade will be changed to an F. Under extenuating circumstances, the student may petition the dean of the College of Graduate Studies and Adult Learning, with the recommendation of the instructor, for an extension of time to complete the course or research requirements.

Dissertations, Theses, Research Reports/Projects and Practicum Courses

These are evaluated on the basis of H (Honors), P (Pass), F (Fail) or I (Incomplete).

Graduate Records Policies

Change of Curriculum or Degree Status

Students wishing to change admission status or curriculum must initiate the process by completing the appropriate forms available at www.millersville.edu/graduate/currentstudents/forms-center (<https://www.millersville.edu/graduate/currentstudents/forms-center/>) or in the

College of Graduate Studies and Adult Learning, Lyle Hall. Additional admission requirements may apply to these changes; further, curriculum and degree status changes must be approved by both the dean of the College of Graduate Studies and Adult Learning and the student's department(s).

For post-baccalaureate certification students, a new application must be submitted for students to be reevaluated in a new area of certification.

Change of Name and Address

It is the responsibility of each student to provide accurate and current information for all University records. Address changes may be completed by students online through their MAX account, or by sending notice to the College of Graduate Studies and Adult Learning. Students must submit official documentation (copy of marriage license, divorce decree, etc.) to the College of Graduate Studies and Adult Learning for a name change to be made.

Transcripts

A student or graduate wishing to obtain an official copy of her/his academic record must request a transcript using the online Credentials Service accessible through the Millersville website or complete the form available in the registrar's office, Lyle Hall. Forms are also available on the Millersville University website, Student Forms Center. If the requester wishes to obtain an official copy for a third party, the requested transcript must be sent directly to the designated third party or requested in a signed, sealed envelope. There is a \$10 fee per transcript when ordered directly from the University's registrar's office.

Graduation

Students who plan to graduate at the end of any semester must make application for graduation by the deadline published. A \$30 graduation fee is charged. A student who applies for graduation but does not complete degree requirements by the anticipated date must reapply in the semester when he/she does expect to graduate. Students are billed by the bursar for the graduation fee. Additional details and appropriate forms are available on the Millersville commencement web page at www.millersville.edu/commencement (<https://www.millersville.edu/commencement/>).

Common Policy for Comprehensive Exams

Comprehensive exams are a common method for assessing students' mastery of core learning objectives in graduate programs. At Millersville, graduate programs have the option of using graduate comprehensive examinations, so students should be aware of their own graduate program's policy and timeline. Several graduate programs use the comprehensive exam as a means to advance to degree candidacy early in their program, while others use the exam as a culminating evaluation at the end of the program.

For those programs that require an exam as a method of comprehensive evaluation, the following guidelines have been developed by the Graduate Curriculum and Program Review Committee.

Registration and Administration

Comprehensive exams are generally administered on or about the 12th week of the fall and spring terms (November and March) and in the third summer session (July-August). Some programs may not offer their comprehensive exam all three times a year, so it is important to check with the program coordinator. Registration is generally required six weeks prior to the test date; students should check with individual programs for forms and specific dates.

Grading

A committee and/or faculty member from the appropriate program will grade comprehensive exams on a pass/fail (P/F) basis. There is also the opportunity for a grade of passing with honors (H) to be awarded.

Failure and Reattempts

If a student fails a comprehensive exam, or any part thereof, they must retake the exam, or the sections they failed, per their graduate program's policy. If a student fails to successfully pass the exam a second time, a third attempt may be permitted upon approval of the program coordinator and/or department graduate committee. Prior to the third attempt, the student should examine, with the assistance of an advisor or coordinator, their preparation for the exam and any measures that could be taken to improve performance. The third attempt at a comprehensive exam is considered final, and failure to pass will result in dismissal from the graduate program.

Policies Governing Graduate Courses

<https://www.millersville.edu/finaid/grantsscholarship/scholarships.php>

Academic Petition

Students who believe that an academic injustice has occurred must try to resolve the problem at the lowest appropriate level of authority. The levels of authority from lowest to highest are as follows: individual faculty member; department graduate coordinator and department graduate committee (if existing); department chairperson; dean of the College of Graduate Studies and Adult Learning; and lastly, the Provost/Vice President for Academic Affairs. The case should be presented to progressively higher levels of authority until resolved.

Academic Honesty Policy

Students of the University are expected to be honest and forthright in their academic endeavors. To falsify the results of one's research; to steal the words or ideas of another; to cheat on an examination; or to allow another person to commit, or assist another in committing, an act of academic dishonesty corrupts the essential process by which knowledge is advanced.

Actions that Violate the Academic Honesty Policy

The below lists are for illustration only. They should not be construed as restrictive or exhaustive enumeration of the various forms of conduct that constitute violation of the Academic Honesty Policy.

Plagiarism

Plagiarism is the inclusion of someone else's words, ideas or data as one's own work. When an individual submits work that includes the words, ideas or data of others, the source of that information must be acknowledged through complete, accurate and specific references, and if verbatim statements are included, through quotation marks or other accepted citation practices. By placing his/her name on a scholarly product, the student certifies the originality of all work not otherwise identified by appropriate acknowledgments. Plagiarism would thus include representing as one's own any academic exercise (e.g., written work, computer program, sculpture, etc.) prepared totally or in part by another. An individual will avoid being charged with plagiarism if there is an acknowledgment of indebtedness whenever one:

1. quotes another person's actual words;
2. uses another person's ideas, opinions or theories, even if they are completely paraphrased in one's own words;

3. borrows facts, statistics or other illustrative materials, unless the information is common knowledge.

These guidelines should be followed for all source types, including books, newspapers, pamphlets, journal articles, websites and other online resources. The above lists are for illustration only.

Fabrication

Fabrication is the falsification of research or other findings. The below lists are for illustration only:

1. Citation of information not taken from the source indicated.
2. Listing in a bibliography sources not actually consulted.
3. Inventing data or other information for research or other academic projects.

Cheating

Cheating is the act or attempted act of deception by which an individual tries to misrepresent that he/she has mastered subject matter in an academic project or the attempt to gain an advantage by the use of illegal or illegitimate means. The below lists are for illustration only:

1. Copying from another student's test paper.
2. Allowing another student to copy from one's test paper.
3. Using the course textbook, or other material such as a notebook, brought to class meetings but unauthorized for use during a test.
4. Collaborating during a test with another person by receiving or providing information without the permission of the instructor.
5. Using or possessing specifically prepared, unauthorized materials during a test (e.g., notes, formula lists, formulas programmed into calculators, notes written on the student's clothing or person).

Academic Misconduct

Academic misconduct is the violation of University policies by tampering with grades or participating in the distribution of any part of a test before its administration. The below lists are for illustration only:

1. Stealing, buying or otherwise obtaining all or part of an unadministered test.
2. Selling or giving away all or part of an unadministered test, including answers to an unadministered test.
3. Bribing, or attempting to bribe, any other person to obtain an unadministered test or any information about the test.
4. Buying, or otherwise acquiring, another's course paper and submitting it as one's own work, whether altered or not.
5. Entering a building, office or computer for the purpose of changing a grade in a grade book, on a test or on other work for which a grade is given.
6. Changing, altering or being an accessory to changing and/or altering a grade in a grade book, on a test, on a "Change of Grade" form or other official academic University record which relates to grades.
7. Entering a building, office or computer for the purpose of obtaining an unadministered test.
8. Continuing to work on an examination or project after the specified allotted time has elapsed.
9. Taking a test or course for someone else or permitting someone else to take a test or course in one's place.
10. Giving or taking unauthorized aid on a take-home exam or paper.

- Submitting work for a class that was already submitted for another class, when unauthorized, or allowing another student to submit or copy from your previously submitted class work.

What Can Students Do to Protect Themselves from Being Charged with Violations of the Academic Honesty Policy?

- Prepare thoroughly for examinations and assignments; this also implies attending class on a regular basis.
- Take the initiative to prevent other students from copying your exams or assignments (e.g., shield your answer sheet during examinations; don't lend assignments to other students for them to copy and turn in).
- Check your instructor's course syllabus for a section dealing with academic dishonesty for that course and information on what style sheets or standards manuals to use, and so forth. If you can't find such a section, ask the instructor about expectations in this area. Instructors should issue clear guidelines at the beginning of a course as to what constitutes dishonesty; ultimately, however, it is the student's responsibility to clear up any uncertainties ahead of time.
- Don't look in the direction of other students' papers during examinations.
- Use a recognized handbook for instruction on citing source materials in papers. Consult with individual instructors or academic departments when in doubt.
- Make use of tutorial services, or other services that may be available, to assist in preparing papers and completing other course assignments properly.
- Discourage dishonesty among other students.
- Refuse to assist students who cheat.

Actions Which May Be Taken for Violation of the Academic Honesty Policy

When a faculty member suspects that an act of academic dishonesty has occurred, he/she will meet with the student to:

- discuss the alleged act;
- hear any defense the student may have;
- discuss any proposed academic sanctions;
- inform the student of his/her right to appeal faculty-imposed sanctions to the department chair and/or dean of the College. Academic sanctions that may be imposed by the faculty member include:
 - a verbal reprimand;
 - a written reprimand;
 - requiring the student to redo/resubmit the assignment, test or project;
 - lowering the grade for the assignment, test or project.

Academic sanctions that require a formal charge to be filed with the associate provost for Academic Administration include:

- any sanction in excess of lowering the grade for an assignment, test or project;
- failing the student for the course;
- recommending temporary or permanent suspension from the academic major or University.

Faculty members are encouraged to submit a report for each violation of the Academic Honesty Policy to the associate provost for Academic Administration regardless of the academic sanction imposed or requested. If more than one such report is filed for a student, even in the case of sanctions imposed only by the faculty member, then the associate provost for Academic Administration will meet with the student to discuss these occurrences and possibly impose additional academic sanctions.

Confidentiality

In accordance with the provisions of the Family Educational Rights and Privacy Act of 1974, any information relating to an alleged violation of the University's Student Code of Conduct or to the outcome of a judicial hearing must be treated as strictly confidential by members of the faculty.

Auditing

Students who audit must be officially admitted to the University. With the consent of the dean of the College of Graduate Studies and Adult Learning and the instructor, a student may be permitted to register for any course as an auditor if space is available. An auditor is registered and required to attend at least half of the sessions but is not required to participate in any of the work of the course. No credit toward a degree is issued for an audited course. A student enrolled as an auditor may be dropped from the course when in the judgment of the instructor and the dean of the College of Graduate Studies and Adult Learning such action is justified. A student shall pay the regular graduate course tuition and fees for the privilege of auditing. To register to audit a course, contact the registrar's office, Lyle Hall, for information and a permission form, and submit it by the end of the add period. Audit privilege may not be changed to credit status. Audit privileges are ordinarily limited to one course per semester. A student who has audited a course may, with the advisor's and the appropriate graduate program coordinator's permission, repeat that course for credit. The student must register again for the course and remit the appropriate tuition and fees.

Graduate-level Courses for Undergraduates

Well-qualified Millersville University undergraduates may enroll in graduate courses for undergraduate or graduate credit. Specified conditions apply to each of these two credit alternatives:

- Undergraduates may enroll in 500-level graduate courses for undergraduate credit with permission of the instructor and advisor. The credits earned count toward baccalaureate degree requirements and cannot be converted to graduate credits.
- An undergraduate with an overall 3.0 GPA or higher may enroll in 500- and 600-level graduate courses for graduate credit. The student must have a maximum of 15 semester hours to be completed in the baccalaureate degree program. Written permission must be acquired from the advisor, the course instructor, the graduate program coordinator and/or chair of the department offering the course, and the dean of the College of Graduate Studies and Adult Learning. The undergraduate will also need to be admitted as a nondegree graduate student. A maximum of nine graduate credits may be earned by an undergraduate. These credits may not count toward the completion of the student's baccalaureate degree.

Graduate Coursework Outside Major Field

A student may elect up to, but not more than, six semester hours of work in a discipline outside the major field, provided the courses elected are approved by the advisor and graduate program coordinator. Required professional core courses (M.Ed. programs) are not included in this limit.

Repeating a Graduate Course

Graduate students may repeat an individual course only once for grade improvement. Transcripts will reflect grades each time the course is taken. Only the most recent grade and credits will be counted in the cumulative GPA.

Graduate students may repeat an individual course not designed to be repeatable only once for grade improvement.

Withdrawal From a Course

A student may withdraw from a course, provided he/she conferred with both the course instructor and his/her advisor and has filed a course withdrawal form, which is available at the registrar's office.

The notation made on a student's record about a withdrawn course depends on when the student withdraws. Students who "drop" a course by the end of the first week of classes in spring or fall semesters have all references to that course deleted from their records. Drop periods for summer and winter courses will be determined by the registrar's office.

Students will be permitted to withdraw from a course and receive a grade of "W" up until the end of the 10th week of the semester. The W grade does not carry any grade points and will not be calculated in the student's GPA. There will be no limit on the number of courses from which the student may withdraw. After the 10th week of the semester and through the last day of classes, students who withdraw will receive a non-W grade, which will be determined by the instructor consistent with University policy.

The official date of withdrawal is the date the withdrawal form is submitted with proper signatures to the registrar's office. Deadlines for returning the form are strictly enforced. It is the student's responsibility to obtain all required signatures (both course instructor and advisor) in time to meet the deadline.

Failure to withdraw from a course properly may result in additional tuition fees as well as a failing grade. For example, a student who does not attend a class but only submits a withdrawal form during the second week of class may be subject to additional tuition for that two-week period.

Withdrawal periods will be determined by the registrar's office and be prorated for summer, winter and out-of-term courses. To withdraw from a course, contact the registrar's office, Lyle Hall, for an appropriate form, or obtain a form on the web in the Student Forms Center.

Drop/Add Policy Schedule Adjustment

- Students may drop or add courses by web from the early registration period until the start of the term. Prior to the first day of classes, faculty signatures are not required to drop or add a course.
- It is the student's responsibility to make official changes to his/her class schedule. There is no automatic drop policy for nonattendance.

- For fall and spring terms, students may drop or add courses online from the early-registration period until 11:59 p.m. EST the day before the second week of classes begins.
- For courses that meet for portions of the fall and spring terms, the registrar will determine equivalent dates for the no-grade, W-grade and regular-grade periods.
- During the summer and winter sessions, the registrar will determine equivalent dates for the no-grade, W-grade and regular-grade periods.

Frequency of Course Offerings

- When a course is always offered in fall, spring and summer, no notation is shown.
- When a course is listed as "Offered in...", it is offered only in the semesters noted.
- When a course is listed as "Offered periodically," it is offered on an irregular or as-needed basis.
- When a course is listed as "Offered infrequently," the course has not been offered for two years and will not be offered for two more years.
- When a course is listed as "Offered annually," the course is taught in either spring or fall.

Transfer-of-Credit Policy Credits Prior to Admission at Millersville

Students must request approval from their department and the dean of the College of Graduate Studies and Adult Learning for the transfer of graduate credit completed at a regionally accredited institution prior to admission to Millersville. Forms for the approval of transfer credits are available in the College of Graduate Studies and Adult Learning, Lyle Hall, or at www.millersville.edu/graduate/current-student-resources/forms-center.php (<https://www.millersville.edu/graduate/current-student-resources/forms-center.php>). The student must arrange for this office to receive official transcripts directly from the institution at which the graduate work was taken. Transfer credit may amount to a maximum of nine credit hours from other accredited institutions, subject to completion of the residency requirement, and is subject to the time limit for the completion of all degree requirements. Except in the most extenuating circumstances, no transfer credit will be allowed for work completed more than five years prior to admission to Millersville University. All work recommended by the department for transfer credit must be taken in a regular program of studies offered by a four-year, regionally accredited institution on its main campus, at an established center or by the institution's distance-education program. Grades of B- or higher (or documented equivalency) must be achieved in these courses. (Documented equivalency is confirmed with the originating institution by the graduate coordinator of the program of the degree-seeking graduate student.) Requested transfer course grades must come from an accredited graduate program, some of which only give grades of P/F; these exceptions to the transfer-of-credit policy can only be requested in writing by the graduate coordinator of the student's program. Extension work and courses offered in a nonacademic institutional setting are not considered appropriate for transfer. Credits used for degree completion at another institution may not be transferred to a Millersville degree program. CLEP credits are not accepted for graduate programs and will not be listed on graduate transcripts. Some departments, however, request or allow CLEP credits for program competencies.

Permission to Complete Credits in Transfer Following Admission to a Degree Program

Following acceptance into a graduate degree program, students desiring to pursue graduate work at another institution for transfer purposes must receive the prior recommendation of their advisor and graduate coordinator, and the prior approval of the dean of the College of Graduate Studies and Adult Learning. Approval forms are available at www.millersville.edu/graduate/current-student-resources/forms-center.php (<https://www.millersville.edu/graduate/current-student-resources/forms-center.php>) or in the College of Graduate Studies and Adult Learning, Lyle Hall.

Degree Candidacy Review

Degree candidacy is a screening and advising process that is used by some graduate programs. If used in their academic program, students are expected to apply to their respective departments for admission to degree candidacy at the earliest possible time. It is the student's responsibility to initiate the candidacy review process within the required semester-hour limitation. See the *Academic Programs* section for specific degree candidacy requirements.

The effectiveness of the candidacy process is diminished if a student continues beyond the required semester-hour limitation without undertaking the candidacy evaluation. One of the functions of the evaluation is to identify areas of study that may need to be strengthened through specific courses or projects during the remainder of the degree program. If a student does not schedule the evaluation within the stated limit, more semester hours may be required in order to strengthen competency(ies) identified in the review process.

Thesis and Dissertation

Thesis

A master's thesis is an approved creative project or an interpretive, analytical work that offers evidence of an original point of view, supported by original research and the results of that research. In completing a thesis, the student demonstrates a capacity for independent research, an ability to organize and present empirical evidence logically, and proficiency in the use of scholarly language. The final written thesis demonstrates originality, critical and independent thinking, appropriate format, organization and thorough documentation. In certain circumstances, a thesis may be a literary review. A thesis will result in a publishable paper which is submitted to the MU Institutional Repository and the academic department.

If students are planning to pursue a doctoral program, they may want to strongly consider completing a thesis as part of their master's degree requirements. Many doctoral programs look to this as a requirement for admission.

The Graduate Course and Program Review Committee has adopted thesis guidelines to aid in the preparation and completion of theses. A full copy of the Thesis and Dissertation Guidelines is available on the College of Graduate Studies and Adult Learning website at www.millersville.edu/admissions/graduate/files/thesis_dissertation_guidelines_june_2018.pdf (https://www.millersville.edu/admissions/graduate/files/thesis_dissertation_guidelines_june_2018.pdf).

Dissertation

In order to achieve a doctorate degree, a doctoral student is required to complete the theory, research and presentation of a dissertation. Writing a dissertation requires an ability to do competent research, organize

materials effectively, write clearly, and make sound interpretations and conclusions from facts presented. The essence of a dissertation is the demonstration of critical-thinking skills, not merely presenting experimental data. Dissertations are expected to make a new and creative contribution to a field of study. A dissertation will result in a publishable paper which is submitted to the MU Institutional Repository and the academic department.

The Graduate Course and Program Review Committee has adopted dissertation guidelines to aid in the preparation and completion of dissertations. A full copy of the Thesis and Dissertation Guidelines is available on the College of Graduate Studies and Adult Learning website.

Tuition and Expenses

Tuition

Tuition charges are set in July by the Board of Governors of the State System of Higher Education. All rates are to be used as estimates. Current information is available at www.millersville.edu/osa (<https://www.millersville.edu/osa/>).

2024-2025 Tuition: Students admitted as master's or post-baccalaureate or certificate or doctoral graduate pay the per-credit graduate tuition rate for all courses. The tuition rate for 2024-2025 master's/post-baccalaureate/certificate programs is \$516 per credit for Pennsylvania residents and \$774 for nonresidents. The tuition rate for 2024-2025 doctoral programs is \$568-\$671 per credit for Pennsylvania residents and \$851-\$1006 for nonresidents. The 2024-2025 rates are subject to change.

General Fee

The general fee is a mandatory fee used to support a variety of ongoing student services and activities, such as student government, student organizations, health services and wellness programs, and Student Center debt service, expansion, capital replacement and maintenance.

This fee is charged to ALL students (undergraduate and graduate, full-time and part-time, residential and commuting/off-campus) during all University sessions (including winter session and summer sessions) and at all course locations.

The 2024-2025 fee is \$119.25 per credit (12-credit maximum of \$1431.00) for fall and spring semesters. During summer and winter sessions, the fee is \$38.75 per credit for all students.

Refunds: A student who withdraws from the University is entitled to a prorated refund of the general fee in the same proportion as refunds of tuition.

Technology Fee

The technology fee is a mandatory fee collected to support instructional technology.

The 2024-2025 fee is \$28 per credit for Pennsylvania residents, and \$40 per credit for nonresidents.

Housing and Meal Plan Fees

The College of Graduate Studies and Adult Learning, in conjunction with the Department of Housing and Residential Programs, offers on-campus housing on a case-by-case basis. This is a great option for graduate students new to the area as it is an excellent way to learn the campus and to meet other Millersville students. Please note that requests to obtain housing on-campus will be considered on a first-come, first-serve

basis as space permits. If you are interested in on-campus graduate student housing, please contact Housing at 717-871-4200.

Benefits of on-campus housing include:

- Clean and safe suite-style living
- Single and double bedroom configurations
- Private bathrooms
- Free cable TV and Internet access
- All utilities included
- Laundry room in each residence hall
- Recreation room and common areas
- Convenient access to classes and student amenities, such as the Fitness Center and Dining Facilities.
- Housing charges billed directly to the student's university account

Please note that alcohol is not permitted in the on-campus suites due to undergraduate students also residing in the same building. Several establishments that serve food and adult beverages are available within walking distance.

More information on housing options and pricing can be found at <https://www.millersville.edu/housing/>

Additionally, information on dining options and pricing can be found at <https://www.millersville.edu/dining/general-information/options.php>

Other Fees

Application Fee. Students applying for admission to Millersville University pay a \$40 nonrefundable application fee when submitting their application.

Late-Payment Fee. Students who do not clear their bill or make full settlement of their account by the due date are charged \$100.

Late-Registration Fee. Students who register after the start of the semester/session are charged \$50, except when permission for late registration has been granted by the registrar.

Special Handling Fee. Anyone who gives the University a paper or e-check that is not honored by the bank on which it is drawn is charged \$35.

Replacement Fee. The fee for replacement of a Millersville student identification card is \$25.

Damage Fee. Students are responsible for damages, breakages, and loss or delayed return of University property.

Degree Fee. Each candidate for a degree must pay \$30 to cover the cost of the diploma.

Infirmity Supplies Fee. The cost of supplies used to treat a patient at the infirmary may be charged to the patient.

Library Fees. Overdue fines and other charges may be assessed for library materials not returned on time. The overdue policy is available on the library website at www.library.millersville.edu/policies/fines-and-replacements/.

Payment of Tuition and Fees

Students enrolling for classes during the early-registration period are not required to pay immediately. Notification of e-bill availability is sent to the students' Millersville email four to six weeks before the beginning of

each semester. Full payment is due approximately two to three weeks prior to the beginning of the semester. Billing and due dates for current and future semesters are available at www.millersville.edu/osa (<https://www.millersville.edu/osa/>) by scrolling to Important Dates.

Students enrolling after early registration may be required to make full payment at the time of registration.

Electronic check (no associated fee) and debit/credit card (processing fee applies) payment options are available via myville at www.millersville.edu (<https://www.millersville.edu>).

Questions about fees and payments should be directed to the Office of Student Accounts, 2nd floor of Lyle Hall.

Installment Payment Plan

Millersville University offers an installment payment plan to help students meet educational costs during the fall and spring semesters. View information online at millersville.afford.com (<http://millersville.afford.com>) or by calling 1-800-722-4867. The plan is only available in the fall and spring semesters.

University Refund Policy

A student who wishes to cancel registration and obtain a refund must complete the cancellation process and officially drop the course/courses with the registrar. The effective date for refunds is determined by the date the completed drop/add form is filed in the registrar's office. Application and graduation fees are not refundable.

Students who register are responsible to drop any class they do not plan to attend. Failure to drop the class before the semester begins may result in charges and/or grades being posted to a student's records. Do not rely on the "drop for nonpayment" policy to remove these classes.

Stopping payment on checks written to cover fees does not constitute withdrawal from the University, nor does it relieve the student from financial responsibility for fees owed. Students whose fees are to be paid by scholarship or other sources and who lose the financial assistance because of withdrawal, or for other reasons, will be held personally responsible for all charges.

Students who have made payment for a course are entitled to a full refund of University tuition and fees in the event the University cancels a course.

Fall/Spring Refunds

Refund of Tuition

The following timetable applies to refunds for tuition and the general fee:

1. Withdrawal through the drop period, first week of class: 100% refund.
2. Semester withdrawal during second week: 80% refund.¹
3. Semester withdrawal during third week: 60% refund.¹
4. Semester withdrawal during fourth week: 50% refund.¹
5. Semester withdrawal during fifth week: 40% refund.¹
6. Withdrawal after fifth week: no refund.

¹ After the drop period, refunds shall be made only for full-semester withdrawal.

Housing Fee

A prorated refund on housing fees will be made only when a student withdraws from the University. For students who move out of housing but remain enrolled, there is no refund.

Meal Plan

All students who leave the University will be entitled to a prorated refund of meal plan fees.

Summer/Winter Session Refunds

Winter session, first summer session, second summer session and third summer session are each considered to be separate entities and are treated as such for refund purposes.

See the appropriate session course listing for the applicable refund schedule on the Millersville website, www.millersville.edu/osa (<https://www.millersville.edu/osa/>). Rates and refund amounts are subject to change.

Financial Assistance

Financial assistance is available to graduate students via graduate assistantships, student loans and campus employment.

To be eligible for federal and state aid, students must be enrolled in credits counting towards their Course Program of Study (CPOS). More information regarding CPOS can be found on the Financial Aid section of Millersville's website: <https://www.millersville.edu/finaid/maintaining-eligibility/course-program-of-study-cpos.php>

Assistantships

Graduate assistantships are awarded on a competitive basis for a nine-month period to students admitted into a master's degree program and are renewable for one year. Remuneration for graduate assistants includes a stipend and waiver of tuition only, up to a maximum of 18 graduate credits per calendar year. Full-time graduate assistants receive \$6,000/year (\$3,000/semester). Full-time graduate assistants work 300 hours per semester in their assignment. Current assistantship assignments include most of the departments offering graduate degree programs. Other academic and administrative support assignments are available. Graduate assistantship assignments, which are awarded for fall and spring semesters only, vary but may include research, counseling and administrative responsibilities. Interested students should visit the College of Graduate Studies and Adult Learning website at www.millersville.edu/graduate (<https://www.millersville.edu/graduate/>) for information and access to the application. In order to receive full consideration, applications should be received no later than February 15 for the following fall semester.

Loans

Federal Direct Loans

A graduate student may borrow up to \$20,500 per academic year via the Federal Direct Unsubsidized Loan Program. Certification students may borrow up to \$12,500 per academic year via the Federal Direct Loan Program. Loans may not exceed educational costs or the maximum loan limits, whichever is less. Effective with the 2023-2024 academic year, degree-seeking graduate students must be enrolled at least half-time (3 Credits) to be eligible for Federal Direct Loans. The applicant is required to complete the Free Application for Federal Student Aid (FAFSA) in order to apply for the loan. This form is available online at studentaid.gov (<http://studentaid.gov>). **Please note:** *If you are receiving a graduate assistantship, the amount of the tuition waiver is included in*

calculating Federal Direct Loan eligibility. As a result, your loan may be adjusted.

Campus Employment

Campus jobs other than graduate assistantships are available. Information regarding job opportunities can be obtained from the Office of Career Services and Office of Student Payroll.

Scholarships

A scholarship is a financial grant for a student's tuition. There are many scholarships available at Millersville University, including both annual scholarships and permanent scholarship endowments offered through the Millersville University Foundation. Scholarship eligibility varies, but can be based on financial need, academic merit, athletic excellence, and more. Scholarship searches can be found, along with a complete listing of scholarships, including application criteria and deadlines to apply, please visit <https://millersville.scholarshipuniverse.com/>

ACADEMIC PROGRESS POLICY

This policy became effective with the 2016-2017 academic year. The policy is cumulative and includes all students and all periods of enrollment, whether or not aid was received for that period. This policy refers only to **Federal** financial aid. For additional information, please visit: <https://www.millersville.edu/finaid/maintaining-eligibility/sap.php>

Satisfactory Academic Progress (SAP) is defined as earning at least 67 percent of all attempted credits. Graduate students must **also** maintain a minimum, cumulative GPA of 3.0. The progress percentage is determined by dividing the total credits earned by the total number of credits attempted. Since the total attempted credits include withdrawals and "F" grades, future aid may be affected. Only credits earned from a course in which the student was actually enrolled are counted in calculation of SAP. Advanced Placement credits, CLEP credits and credits earned from challenge exams, proficiency exams or life experience are not used in calculating SAP.

Students who are ineligible to receive aid due to academic progress will receive a notification to their Millersville University email at the conclusion of the spring semester, after grades have been posted. Students will have the opportunity to appeal the decision based on extraordinary circumstances, or he/she may make up credits without financial aid until the percentage is met.

College of Arts, Humanities and Social Sciences

Our College is known for its broad range of majors and interdisciplinary programs. We invite you to explore these exciting possibilities! Our faculty pride themselves on high quality teaching and deep commitment to student success. AHSS' programs are built on a strong foundation of liberal arts education, which we believe prepares our students for a wide variety of successful career paths.

We offer a transformative curriculum (<https://www.millersville.edu/hss/departments.php>) that enables our graduates to reason effectively, write clearly, speak persuasively, think critically and ethically, express themselves creatively, work collaboratively and have a broad perspective on diverse cultures and contexts. Many of our programs offer unique opportunities for hands-on learning in our state-of-the-art facilities, for example, art studios, music recording facilities, performance spaces, TV studio, language labs and others. All of our programs

incorporate numerous opportunities for internships with regional companies, research with faculty, service learning projects, participation in professional conferences and competitions, and study abroad. Our graduates leave equipped with a wide array of transferrable skills as well as breadth and depth of knowledge that will allow them to adapt and evolve as life-long learners.

We are looking forward to discussing your learning goals and career aspirations!

The Departments

- Art Education (p. 391)
- English and World Languages (p. 397)
- History (p. 407)

The Programs

- Art Education, M.Ed. (p. 394)
- Art Education, Post-Baccalaureate Certification (p. 395)
- English, M.A. (p. 402)
- English, M.Ed. (p. 403)
- English, Post-Baccalaureate Certification (p. 404)
- Graduate Writing Certificate (p. 405)
- History, M.A. (p. 408)
- Social Studies Post-Baccalaureate Certification (p. 408)
- Spanish Post-Baccalaureate Certification (<https://catalog.millersville.edu/graduate/college-arts-humanities-social-sciences/languages-cultures/spanish-post-baccalaureate-certification/>)

Art Education

The Master of Education degree program in art education allows the graduate student to integrate art education, studio, art history and related academic areas (e.g., psychology, special education, technology and innovation, and languages and cultures). Graduate students are encouraged to experiment and explore in a variety of areas.

The Department of Art is housed in a well-designed and spacious art building, Breidenstine Hall. The 56,000-square-foot facility includes uniquely designed studios for ceramics, design, drawing, metalsmithing, painting, photography, printmaking and sculpture. It also houses two art galleries, a digital fabrication lab, and a large art history lecture room. Up-to-date tools and equipment offer students the opportunity to explore a wide variety of art processes.

The Programs

- Art Education, M.Ed. (p. 394)
- Art Education, Post-Baccalaureate Certification (p. 395)

Bruntse, Line; Associate Professor

College of Arts, Humanities and Social Sciences
B.F.A., Indiana University of Pennsylvania, 1995; M.F.A., University of Massachusetts, 1999

Filippone, Christine; Professor

College of Arts, Humanities and Social Sciences
B.S., The Pennsylvania State University, 1989; M.A., *Ibid.*, 1994; Ph.D., Rutgers University, 2009

Frey, Dorothy; Assistant Professor

College of Arts, Humanities and Social Sciences
B.F.A., Millersville University; M.F.A., American University, 2002

Frischkorn, Shauna; Professor

College of Arts, Humanities and Social Sciences
B.A., Millersville University, 1983; M.A., Regent University, 1986; M.F.A., SUNY-Buffalo, 1998

Gates, Leslie; Professor

College of Arts, Humanities and Social Sciences
B.S.Ed., Millersville University, 2003; M.A., Shepherd University, 2006; Ph.D., University of Maryland, 2011

Leitzke, Heidi; Associate Professor

College of Arts, Humanities and Social Sciences
B.A., American University, 2000; B.A., Chautauqua School of Art, 2002; B.A., Anderson University, 2002; M.F.A., Western Carolina University, 2006

Mata, Nancy; Associate Professor

College of Arts, Humanities and Social Sciences
B.F.A., West Chester University, 1992; M.A., Syracuse University, 2000; M.F.A., Temple University/ Tyler School of Art, 2002

McDonah, Becky; Professor

College of Arts, Humanities and Social Sciences
B.A., University of Wisconsin-Lacrosse, 1995; M.F.A., Arizona State University, 2000

Pannafino, James; Professor

College of Arts, Humanities and Social Sciences
B.F.A., Kutztown University, 1998; M.F.A., Rochester Institute of Technology, 2004

Robinson-Lawrence, Jeri; Professor

College of Arts, Humanities and Social Sciences
B.F.A., SUNY At Purchase, 1986; M.F.A., The School of the Art Institute of Chicago, 1988

Schuller, Brant; Professor

College of Arts, Humanities and Social Sciences
B.F.A., Cleveland Institute of Art, 1990; M.F.A., The Pennsylvania State University, 1992

Sigel, Deborah; Professor

College of Arts, Humanities and Social Sciences
B.A., Carleton College, 1986; M.F.A., Cranbrook Academy of Art, 1991

ART 500: 3-12 s.h.

Co-Op Ed Experience in Art

Co-Op Ed Experience in Art

ART 522: 3 s.h.

Art Education Methods I

Designed for post-baccalaureate certification students. An overview of art education, with particular emphasis on historical and contemporary rationales for teaching art, the observation of art instruction, and alternative career options through a variety of field experiences.

ART 523: 3 s.h.

Art Curriculum Seminar/Wkshp

Survey of theories, problems and methods in developing curriculum in art education. Offered every other year.

ART 524: 3 s.h.**Art Education Methods II**

Designed for post-baccalaureate certification students. Build on the rationales for art education addressed in Art Education Methods 1 with an investigation into designing meaningful art education experiences for PreK-12 students. Design art education experiences and consider how policies at the state and local levels influence how teachers enact curriculum in their classrooms.

ART 525: 3 s.h.**Art Education Methods III**

Designed for post-baccalaureate certification students. An examination of classroom strategies, materials and technologies used in teaching art to develop creative and critical thinking in all students. An emphasis on self-reflection and professionalism through team teaching and service learning in an intensive field experience.

ART 526: 3 s.h.**Trends Art Ed:**

Seminar course designed to address current trends, theories, concepts and strategies in art education. Offered every other year.

ART 533: 3 s.h.**Drawing**

Independent investigation of advanced drawing techniques. Prereq: 9 s.h. of drawing.

ART 534: 3 s.h.**Drawing**

Independent investigation of advanced drawing techniques. Prereq: 9 s.h. of drawing.

ART 552: 3 s.h.**Painting**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 553: 3 s.h.**Watercolor**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 554: 3 s.h.**Painting**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 555: 3 s.h.**Water Color and Related Media**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 563: 3 s.h.**Printmaking**

Exploration of experimental printmaking techniques, development of individual style and critique skills. 9 s.h. of printmaking.

ART 564: 3 s.h.**Printmaking**

Exploration of experimental printmaking techniques, development of individual style and critique skills. 9 s.h. of printmaking.

ART 566: 3 s.h.**Collage**

This course offers an advanced historical look at the last 100 years of collage as a media for fine art. Highlights of collage history will be discussed and followed by a progressive hands-on application of the ideas and methods.

ART 567: 3 s.h.**Advanced Photography 2**

Advanced photography course with an emphasis on fine art, self-expression and creating a professional portfolio of work, including color techniques, black and white techniques, studio lighting techniques, digital techniques, making enlargements and presenting prints for display. Covers criticism, history and analysis. Students must have a 35mm single-lens reflex film or digital camera. Offered fall, spring. Permission of instructor.

ART 579: 3 s.h.**Experimental**

Experimental

ART 581: 3 s.h.**Sp Topics in Art Education**

Graduate Art Education Special Topics Course that focuses on one or more topics of current interest not addressed in current curriculum. Topics will vary according to the needs of students and the faculty involved.

ART 582: 3 s.h.**Sculpture**

Exploration of experimental techniques in sculpture, development of individual style, and critique skills.

ART 583: 3 s.h.**Sculpture**

Exploration of experimental techniques in sculpture, development of individual style, and critique skills.

ART 584: 3 s.h.**Intro Studio Art:**

Fine Art intro level studio topics course designed for the Post Baccalaureate or Graduate Student. Topics will vary each semester.

ART 585: 3 s.h.**Intro Studio Art:**

Fine Art intro level studio topics course designed for the Post Baccalaureate or Graduate Student. Topics will vary each semester.

ART 586: 3-6 s.h.**Topics In Art Education**

Independent investigation of topic(s) in art education. Prereq: Graduate standing or permission of the instructor.

ART 587: 3-6 s.h.**Topics In Art Education**

Independent investigation of topic(s) in art education. Prereq: Graduate standing or permission of the instructor.

ART 588: 3-6 s.h.**Art Hist Top:**

Independent investigation of topic(s) in art history. Prereq: Graduate standing or permission of the instructor.

ART 589: 3-6 s.h.**Topics In Art History**

Independent investigation of topic(s) in art history. Prereq: Graduate standing or permission of the instructor.

ART 591: 3 s.h.**Fine Art Metals**

Independent investigation of metalsmith development of individual style, and critique skill. Prereq: 9 s.h. of metalsmithing.

ART 592: 3 s.h.**Fine Art Metals**

Independent investigation of metalsmith development of individual style, and critique skill. Prereq: 9 s.h. of metalsmithing.

ART 596: 3 s.h.**Ceramics**

Independent investigation of ceramics, development of individual style, and critique skills. Prereq: 9 s.h. of ceramics.

ART 596H: 3 s.h.**Hon: Ceramics****ART 597: 3 s.h.****Ceramics**

Independent investigation of ceramics, development of individual style, and critique skills. Prereq: 9 s.h. of ceramics.

ART 602: 3 s.h.**Qualitative & Arts-Based Research Methods**

For graduate students from across the university community whose research questions may best be answered through qualitative research and/or arts-based research methods. This course provides students an opportunity to investigate and consider the applications of a number of qualitative and arts-based research methods to their emerging ideas and designs for conducting research in their respective fields. The emphasis will be on identifying and evaluating prospective research problems and questions, examination of related research literature, and development of a research project proposal. This course is an intermediate level methods class with a prerequisite of EDFN 601 or enrollment in the Expressive Arts certificate program.

ART 603: 3 s.h.**Assessment in Art Education**

Examine various theories and methods of assessment of why, what, and how to assess art. Students will work together to identify assessment dilemmas present in their classrooms and using texts, each other, and their own experiences, work together to create potential solutions. The aims of this course are to help students build relevant and immediately applicable tools to use in K-12 classrooms and to build a learning community for art educators in which they can explore assessment issues particularly relevant for their subject matter.

ART 633: 3 s.h.**Drawing**

Independent investigation of advanced drawing techniques. Prereq: 9 s.h. of drawing.

ART 634: 3 s.h.**Drawing**

Independent investigation of advanced drawing techniques. Prereq: 9 s.h. of drawing.

ART 635: 3 s.h.**Drawing**

Independent investigation of advanced drawing techniques. Prereq: 9 s.h. of drawing.

ART 641: 3 s.h.**Design**

Independent investigation of design. Prereq: 9 s.h. of design.

ART 642: 3 s.h.**Design**

Independent investigation of design. Prereq: 9 s.h. of design.

ART 643: 3 s.h.**Design**

Independent investigation of design. Prereq: 9 s.h. of design.

ART 652: 3 s.h.**Painting**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 654: 3 s.h.**Painting**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 656: 3 s.h.**Painting**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 663: 3 s.h.**Printmaking**

Exploration of experimental printmaking techniques, development of individual style and critique skills. 9 s.h. of printmaking.

ART 664: 3 s.h.**Printmaking**

Exploration of experimental printmaking techniques, development of individual style and critique skills. 9 s.h. of printmaking.

ART 665: 3 s.h.**Printmaking**

Exploration of experimental printmaking techniques, development of individual style and critique skills. 9 s.h. of printmaking.

ART 666: 3 s.h.**Fine Art Photography**

Exploration of experimental fine art photography techniques, development of individual style and critique skills. Prereq: 9 s.h. of photography

ART 667: 3 s.h.**Fine Art Photography**

Fine Art Photography

ART 668: 3 s.h.**Fine Art Photography**

Exploration of experimental fine art photography techniques, development of individual style and critique skills. Prereq: 9 s.h. of photography

ART 678: 3-6 s.h.**Documented Study**

In-depth investigation of an issue in art education under the direction of appropriate faculty.

ART 682: 3 s.h.**Sculpture**

Exploration of experimental techniques in sculpture, development of individual style, and critique skills.

ART 683: 3 s.h.**Sculpture**

Exploration of experimental techniques in sculpture, development of individual style, and critique skills.

ART 684: 3 s.h.**Sculpture**

Exploration of experimental techniques in sculpture, development of individual style, and critique skills.

ART 686: 3-6 s.h.**Topics in Studio Art**

Independent investigation of topic(s) in an art studio.

ART 687: 3-6 s.h.**Topics in Studio Art**

Independent investigation of topic(s) in an art studio.

ART 688: 3 s.h.**Topics in Art Hist**

Independent investigation of topic(s) in art history. Prereq: Graduate standing or permission of the instructor.

ART 691: 3 s.h.**Fine Art Metals**

Independent investigation of metalsmith development of individual style, and critique skill. Prereq: 9 s.h. of metalsmithing.

ART 692: 3 s.h.**Fine Art Metals**

Independent investigation of metalsmith development of individual style, and critique skill. Prereq: 9 s.h. of metalsmithing.

ART 693: 3 s.h.**Fine Art Metals**

Independent investigation of metalsmith development of individual style, and critique skill. Prereq: 9 s.h. of metalsmithing.

ART 695: 3 s.h.**Ceramics**

Independent investigation of ceramics, development of individual style, and critique skills. Prereq: 9 s.h. of ceramics.

ART 696: 3 s.h.**Ceramics**

Independent investigation of ceramics, development of individual style, and critique skills. Prereq: 9 s.h. of ceramics.

ART 697: 3 s.h.**Ceramics**

Independent investigation of ceramics, development of individual style, and critique skills. Prereq: 9 s.h. of ceramics.

ART 699: 3,6 s.h.**Thesis**

In-depth investigation of a topic relevant to art education within a recognized research format under the direction of appropriate faculty.

ART 799: 3,6 s.h.**Applied Supv: Art Education**

Field-based experience to develop candidate's leadership abilities, articulation of philosophy of art education, and supervisory competencies. Activities may include curriculum and staff development, budgeting and the public relations function, among others. Prereq: ART 524 and EDSU 700, 701 and 703. A student may petition the Department of Art for a waiver of the 9 s.h. prerequisite.

Art Education, M.Ed.

Graduate study in art education is designed to meet the specific needs of art education graduates, practicing art teachers who need graduate credits to meet state mandates, and art teachers who wish to conduct advanced independent study or research in art, art education, art history or related fields.

In addition to the M.Ed., the art department offers a certification program in Supervision of Art Education; see the *Supervisory Certification Program* section for requirements.

Admission Requirements

Those persons applying for admission to the graduate studies program of Millersville University who wish to pursue a program leading to a master's degree in art education must possess Pennsylvania Instructional I Certification in art education or be enrolled simultaneously as a post-baccalaureate certification student.

Applicants who meet the requirements for admission through the Office of Graduate Studies, as specified in the *Admission Requirements* section, will be reviewed by the art department graduate admission committee, which will use the following to formulate a recommendation of probational admission, regular admission or admission denied:

1. Undergraduate and post-baccalaureate grades and grade averages (minimum: 3.0 cumulative; 3.25 in art and art education courses);
2. Three letters of recommendation from persons familiar with the applicant's education and teaching experience (including the applicant's immediate supervisor);
3. Evidence of artistic expression (portfolio review); applicants who completed an undergraduate degree in art at Millersville University are not required to submit a portfolio for review;
4. Professional goals as stated by the applicant; and,
5. If the department recommends probational admission, the conditions shall be clearly stipulated (e.g., the successful completion of a designated course (or courses) either at the graduate or undergraduate level).

Degree Requirements

A program of study will be developed for each student based upon the individual's specific academic background, skills and educational aspirations.

Each student is required to complete the professional studies core, the art education core, the comprehensive studies program and either a thesis or a documented study that represents original investigation relating to art education.

Each student will select work in this program in conjunction with the other M.Ed. requirements. The comprehensive studies courses should provide a direction to the student's professional career.

The concepts and skills necessary for teaching are emphasized, as required for the elementary or secondary art classroom, or in other art programs such as special education and adult education.

As part of the comprehensive studies program, the student, in conference with an advisor, may select studies in art studio and art history as well as other graduate studies (e.g., special education, psychology, professional education, literature, technology and innovation, and languages and cultures).

Degree Candidacy

See the *Degree Candidacy Review* section.

After the student has completed no fewer than 6 and no more than 15 s.h. in the art department, an evaluation shall be conducted by the student's graduate committee to determine his or her qualifications to become a degree candidate. This evaluation shall be based on:

1. Student's performance in graduate study.
2. Recommendation of the art department graduate faculty.
3. Interview with the graduate program coordinator.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
Psychological Core Requirement - Choose 1 of the following:		3
EDFN 545	Advanced Educational Psychology	
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
PSYC 625	Human Growth and Development	
Philosophical Core Requirement - Choose 1 of the following:		3
EDFN 511	Comparative Education	
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Total Hours		9

Major in Art Education - MED

Code	Title	Hours
ART EDUCATION CORE		
Art Curriculum Seminar/Workshop		3
ART 523	Art Curriculum Seminar/Wkshp	
Current Trends in Art Education		3
ART 526	Trends Art Ed:	
ART 603	Assessment in Art Education	3
COMPREHENSIVE STUDY PROGRAM		
Comprehensive Study Electives - Choose 9 hours from:		9
Any 5-level ART course(s)		
Any 6-level ART course(s)		
Note: This requirement may not be satisfied with ART 523, ART 603, ART 678, or ART 699.		
RESEARCH OR THESIS OPTION		
undefined - Choose 1 of the following options 1-2:		3-6
Option 1. Thesis Option - Choose 3 hours from:		
ART 699	Thesis	
Option 2. Non-thesis Research Option - See Appendix 1		6
Total Hours		27-30

Appendix 1. Non-thesis Research Option

Code	Title	Hours
Research Project - Choose 3 hours from:		3
ART 678	Documented Study	
Additional Art Elective - Choose 3 hours from:		3
Any 5-level ART course(s)		
Any 6-level ART course(s)		
AENG 586	Special Topics:	

Art Education, Post-Baccalaureate Certification

For post-baccalaureate information please see the "Certification" section of the Graduate Course Catalog.

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		

COURSE REQUIREMENTS FOR APS

FOUNDATIONS COURSES - Choose 1 of the following options 1-2:		6
Option 1. Foundations Graduate Level		
EDFN 590	Social Foundation of Educ	
EDFN 545	Advanced Educational Psychology	
Option 2. Foundations Undergraduate Level		
EDFN 211	Foundations Modern Education	
EDFN 241	Psychological Foundations of Teaching	

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)

3.0 Minimum Cert GPA

undefined - See separate block

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

Application for APS status

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours		6
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Art Education, Post-Baccalaureate Certification

Code	Title	Hours
REQUIRED ART COURSES		
ART 133	Drawing 1	3
ART 233	Drawing 2	3
ART 142	2D Design	3
ART 242	3D Design	3
Ceramics: Handbuilding or Ceramics: Wheel Throwing - Choose 1 of the following:		3
ART 295	Ceramics:Hand Building	
ART 296	Ceramics:Wheel Throwing	
Painting I - Choose 1 of the following:		3
ART 352	Painting 1	

ART 584	Intro Studio Art: (Intro Studio Art: Painting)	
Survey Printmaking - Choose 1 of the following:		3
ART 361	Survey Printmaking 1	
ART 584	Intro Studio Art: (Intro Studio Art: Printmaking)	
Sculpture I or Fine Art Metals I - Choose 1 of the following:		3
ART 282	Sculpture 1	
ART 291	Intro: Fine Art Metals/Jewelry	
REQUIRED ART HISTORY COURSES		
undefined - Choose 12 hours from:		12
ART 202	Survey of Art History 1: Prehistoric to c 1400	
ART 203	Survey Art History 2: 1400 through 20th Century	
ART 301	The Ancient World	
ART 302	The Italian Renaissance	
ART 303	The 19th Century	
ART 304	The 20th Century	
ART 305	Women in Art	
ART 313	Art in America	
ART 403	Northern Renaissance	
ART 404	Contemporary Movements in Art	
ART 588	Art Hist Top:	
ART 589	Topics In Art History	
DESN 307	Visual Communication Design History	
ADDITIONAL STUDIO COURSES - 15 CREDITS MINIMUM		
undefined - Choose 15 hours from:		15
ART 333	Drawing 3	
ART 433	Drawing 4	
ART 533	Drawing	
ART 534	Drawing	
ART 345	Introduction to Computer Art	
ART 445	Advanced Computer Art	
DESN 240	Typography I	
DESN 244	Typography 2	
DESN 344	Visual Communication and Graphics Design 1	
DESN 346	Intro to Computers in Design	
DESN 375	Illustration	
DESN 444	Vis Comm and Graphcs Design 2	
DESN 446	Advanced Computers In Design	
ART 354	Painting 2	
ART 452	Painting 3	
ART 454	Painting 4	
ART 552	Painting	
ART 554	Painting	
ART 353	Watercolor 1	
ART 355	Watercolor 2	
ART 363	Lithography Printmaking 1	
ART 364	Relief Printmaking 1	
ART 365	Intaglio Printmaking 1	
ART 367	Water Based Silkscreen 1	
ART 464	Relief Printmaking 2	
ART 465	Intaglio Printmaking 2	
ART 467	Water Based Silkscreen 2	
ART 468	Mixed Media Printmaking	

ART 282	Sculpture 1	
ART 382	Sculpture 2	
ART 482	Sculpture 3	
ART 167	Experimental Photography	
ART 306	Intro Photography: Darkroom	
ART 406	Interm Photography: Darkroom	
ART 295	Ceramics:Hand Building	
ART 296	Ceramics:Wheel Throwing	
ART 297	Ceramics 2	
ART 396	Ceramics 3	
ART 497	Ceramics 4	
ART 596	Ceramics	
ART 597	Ceramics	
ART 291	Intro: Fine Art Metals/Jewelry	
ART 391	Fine Art Metals: Casting	
ART 491	Fine Art Metals: Form Emphasis	
ART 492	Advancd Fine Art Metal/Jewelry	
ART 591	Fine Art Metals	
ART 592	Fine Art Metals	
ART 486	Sp Topics:	

Select an additional 15 credits of studio courses from any of the studio areas: Drawing; Graphic Interactive Design; Painting Watercolor; Printmaking; Sculpture; Photography; Ceramics; Fine Art Metals or Topics in Art Studio Courses in excess of the 15 credit minimum will apply as additional studio courses and will count toward major credits and major GPA. Speak to your advisor about options and click here to access the web schedule of courses in the ART department.

REQUIRED ART EDUCATION COURSES

Introduction to Art Education - Choose 1 of the following:		3
ART 221	Introduction to Art Education	
ART 522	Art Education Methods I	
Meaningful Art Education - Choose 1 of the following:		3
ART 324	Designing Meaningful Art Education Experiences	
ART 524	Art Education Methods II	
Methodology and Pedagogy of Art - Choose 1 of the following:		3
ART 325	Methodology and Pedagogy of Art	
ART 525	Art Education Methods III	

Total Hours **60**

Professional Education - Certification

Code	Title	Hours
FOUNDATIONS BLOC		
We recommend 590 and 545 for Post-Bacc students. These courses each require 35 hours field placement at an urban school. Offered in the evenings Fall and Spring. Also offered in Summer Session. If enrolling in EDFN 211/241, please register for both courses in the same block.		
Introduction to Art Education - Choose 1 of the following:		3
ART 221	Introduction to Art Education	
ART 522	Art Education Methods I	
Meaningful Art Education - Choose 1 of the following:		3
ART 324	Designing Meaningful Art Education Experiences	
ART 524	Art Education Methods II	

Foundations of Modern Education - Choose 1 of the following: 3

EDFN 590 Social Foundation of Educ

EDFN 211 Foundations Modern Education

Psychological Foundations of Teaching - Choose 1 of the following: 3

EDFN 545 Advanced Educational Psychology

EDFN 241 Psychological Foundations of Teaching

APS - PROFESSIONAL BLOC

Students must meet APS eligibility requirements prior to registering.

Course Appropriate PRAXIS II Exam should be taken after

Professional Bloc, but prior to Student Teaching.

Content Area Literacy for Diverse Classrooms - Choose 1 of the following: 3

EDSE 340 Content Area Literacy for Diverse Classrooms

EDSE 540 Cntnt Area Litrcy Divers Class

Secondary Students w/Disabilities in Inclusive Settings - Choose 1 of the following: 3

SPED 346 Secondary Students w/Disabilities in Inclusive Settings

SPED 546 Sec Stdnts w Disab Inclu Sttgs

Methodology and Pedagogy for Art - Choose 1 of the following: 3

ART 325 Methodology and Pedagogy of Art

ART 525 Art Education Methods III

STUDENT TEACHING SEMINAR

File your Intent to Student Teach Card one year prior to the beginning of the semester in which you wish to Student Teach. Click here to access the Student Teaching Website

EDSE 471 Student Teaching Seminar 3

STUDENT TEACHING SEMESTER

Students must meet APS eligibility requirements prior to registering. Submit your Teacher Certification Packet 90 days prior to completion of your certification program. Click here to access the packet on the Certification Website.

Student Teaching 9

EDAR 461 Elem Stu Tch: Art

EDAR 462 Secon Stu Tch: Art

Total Hours 33

English and World Languages

English

We educate graduate students whose refined research, analytical, and writing skills enable them to advance into doctoral programs or other professional endeavors. We offer two graduate degrees, the Master of Arts and the Masters of Education. In addition, the department provides curriculum that leads to Certification for students who wish to become teachers, but who do not have a degree in education or in English. We also offer a Graduate Certificate in Writing to hone advanced writing skills that enhance career trajectories.

Language & Culture Studies

Millersville University's Post-Baccalaureate Certification Program (<https://www.millersville.edu/graduate/admissions/apply/post-baccalaureate-certification.php>) is designed for those applicants who already have a bachelor's degree and would like to be certified to teach

in the State of Pennsylvania. It is not necessary to complete a second degree in order to be certified.

Offerings include Spanish (K-12).

the programs

- English, M.A. (p. 402)
- English, M.Ed. (p. 403)
- English, Post-Baccalaureate Certification (p. 404)
- Graduate Writing Certificate (p. 405)
- Spanish Post-Baccalaureate Certification (p. 406)

the faculty

Anderson, Joyce; Instructor

College of Arts, Humanities and Social Sciences

B.A., Eastern College, 1978; M.A., Millersville University, 1984

Antolin, Marco; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., University of Valladolid (Spain), 1996; M.A., Ibid., 2000; Ph.D., Ibid., 2002

Baldys, Emily; Assistant Professor

College of Arts, Humanities and Social Sciences

B.A., Bryn Mawr College, 2005; M.A., The Pennsylvania State University, 2009; Ph.D., Ibid., 2017

Corkery, Caleb; Professor

College of Arts, Humanities and Social Sciences

B.A., Carnegie Mellon University, 1985; M.F.A., Brooklyn College, 1994; M.A., University of Maryland, 1999; Ph.D., Ibid., 2004

Craven, Roberta; Professor

College of Arts, Humanities and Social Sciences

B.S., University of North Carolina-Chapel Hill, 1984; Ph.D., Ibid., 1999.

Farkas, Kerrie; Professor

College of Arts, Humanities and Social Sciences

B.A., The College of New Jersey, 1992; M.A., Ibid., 1994; Ph.D., Ken State University, 2003

Jakubiak, Katarzyna; Associate Professor

College of Arts, Humanities and Social Sciences

M.A., Jagiellonian University (Poland), 1997; M.A., University of Northern Iowa, 1999; Ph.D., Illinois State University, 2006

Mando, Justin; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., University of Vermont, 2004; M.A., Carnegie Mellon University, 2011; Ph.D. Ibid., 2016

Mayers, Timothy; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., University of Scranton, 1988.; M.A., SUNY at Binghamton, 1990; Ph.D., University of Rhode Island, 1998

McCullum-Clark, Kim; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Guilford College, 1988; M.A., The Pennsylvania State University, 1992; Ph.D., Ibid., 1995

Miller, Timothy; Professor

College of Arts, Humanities and Social Sciences

B.A., State University of New York at Binghamton, 1976; M.A., *Ibid.*, 1979; Ph.D., *Ibid.*, 1982

Mondello, Kaitlin; Assistant Professor
College of Arts, Humanities and Social Sciences
B.A., Stetson University, 2004; M.A., *Ibid.*, 2008; Ph.D., The Graduate Center, CUNY, 2018

Ording, Dominic; Assistant Professor
College of Arts, Humanities and Social Sciences
B.A., Michigan State University, 1985; M.A., *Ibid.*, 1989; M.A., *Ibid.*, 1997; Ph.D., *Ibid.*, 2003

Pfannenstiel, A Nicole; Associate Professor
College of Arts, Humanities and Social Sciences
B.S., Northern Arizona University, 2003; M.A., Arizona State University (2008); Ph.D., *Ibid.*, 2013

Rea, Joshua; Assistant Professor
College of Arts, Humanities and Social Sciences
B.A., University of Mount Union, 2012; M.A., University of Louisville, 2015; Ph.D., University of South Florida, 2020

Shin, Duckhee; Assistant Professor
College of Arts, Humanities and Social Sciences
B.A., Sogang University (South Korea), 1978; M.A., *Ibid.*, 1981; Ph.D., Indiana University, 1991

Zhang, Yufeng; Associate Professor
College of Arts, Humanities and Social Sciences
B.A., Shanghai International Studies University (China), 1994; M.A., University of Toledo, 2001; Ph.D., Purdue University

the courses

ENGLISH

ENGL 500: 3-12 s.h.

Co-Op Ed Experience in English

Co-Op Ed Experience in English

ENGL 579: 1-3 s.h.

Experimental

Experimental

ENGL 581: 3 s.h.

Genres in Poetry Writing

An immersion in poetry writing, often in workshop format, with special attention to the theories and practices of poetry's construction, for example how and why verse is generated in distinctive ways. Instructors will choose the genre that will be the focus of each section.

ENGL 586: 3 s.h.

Special Topics in English

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 587: 3 s.h.

Special Topics in English

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 588: 3 s.h.

Special Topics in English

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 589: 3 s.h.

Special Topics in English

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 601: 3 s.h.

Old English Language and Lit

An introduction to the structure of Old English and reading in Old English prose and poetry. Offered periodically.

ENGL 602: 3 s.h.

Middle English

Language and literature of England from 1100 to 1500, exclusive of Chaucer, with attention to changes in the language, literature and culture, especially between 1066 and 1509. Offered periodically.

ENGL 603: 3 s.h.

Chaucer

Important works by Chaucer, with attention to the religious, philosophical, political and literary characteristics of his time; study of the language, pronunciation and versification; and important criticism. Offered annually.

ENGL 604: 3 s.h.

Renaissance in English

Renaissance spirit in England, demonstrated by nondramatic literature. Offered biennially.

ENGL 605: 3 s.h.

Shakespeare

Critical and historical examination of Shakespeare's plays and poetry, and introduction to major critics and sources. Offered every semester.

ENGL 606: 3 s.h.

Eng Lit in the Early 17th Cent

Major English works, with attention to prose style, forms and style in verse; political events and developments in religious thought; intellectual climate of period 1600-1660. Offered biennially.

ENGL 607: 3 s.h.

Milton

Milton's poetry and prose, in relation to religious, philosophical and critical tendencies of the Puritan period. Offered annually.

ENGL 609: 3 s.h.

English Novel of the 18th Cent

Emphasis on the rise of the English novel as an art form. Reading list varies. Offered periodically.

ENGL 610: 3 s.h.

British Novel of the 19th Cent

Study of the Victorian novel as an art form and as expression of the general culture of a period. Reading list varies. Offered periodically.

ENGL 611: 3 s.h.

Romantic Movement in England

Main currents in the literature of the Romantic Age. Emphasis on Wordsworth, Coleridge, Byron, Shelley and Keats. Attention paid to Burns, Blake and major prose writers of the period. Offered periodically.

ENGL 612: 3 s.h.**Literature of Victorian England**

Victorian culture as interpreted by leading poets and prose writers who came to prominence between 1830 and 1900. Emphasis will be placed on such figures as Carlyle, Mill, Newman, Tennyson, Browning, Arnold, Ruskin, the Rossettis, Swinburne, Carroll, Hopkins, Hardy and Wilde. Offered periodically.

ENGL 613: 3 s.h.**Modern British Fiction**

Examination of the novel and story since 1900. Focus on experimental narrative techniques in the fiction of Conrad, Joyce, Lawrence, Forster, Woolf and Ford. Offered periodically.

ENGL 614: 3 s.h.**The Profession of Engl Studies**

"English studies" represents a wide range of scholarly and pedagogical interests and practices. This course will focus on the history and present state of English studies as an academic discipline or field.

ENGL 615: 3 s.h.**Sem Sel Brit Writ:**

Intensive study of selected figures; investigation of primary and secondary sources; special problems in scholarly research. Writers studied will vary. Offered periodically.

ENGL 616: 3 s.h.**The Documentary**

This course examines the art of interpreting, understanding, appreciating, and analyzing nonfiction film. It examines both rhetorical and narrative devices in nonfiction film as well as ethical considerations and ways to interpret a range of nonfiction cinematic genres. Auteur studies as well as film theories contribute to participants' understanding of this important medium.

ENGL 621: 3 s.h.**Early American Lit to 1830**

Examination of Colonial and Federal literature, with some discussion of the beginnings of Romanticism. Special attention to Bradstreet, Taylor, Edwards, Franklin, Wheatley, Brockden, Brown, Irving and Cooper. Offered annually.

ENGL 622: 3 s.h.**The Amer Renaissance: 1830-85**

Focus on Transcendentalism and such figures as Hawthorne, Poe, Thoreau, Melville, Emerson, Whitman and Dickinson. Offered annually.

ENGL 623: 3 s.h.**Dev of the Amer Novel: 19th C**

Narrative fiction from early and middle parts of 19th century to "fin de siècle"; emphasis on the Romance, the Gothic tale, and the rise of the novel. Offered periodically.

ENGL 624: 3 s.h.**Realism and Naturalism to 1920**

A study of stylistic, thematic and philosophic issues relating to literary realism and naturalism. Selections from writers such as Twain, Howells, Wharton, James, Crane, Norris, London and Dreiser. Offered periodically.

ENGL 625: 3 s.h.**Modern Amer Fiction, 1920-1945**

Important American fiction writers of the 20th century, with emphasis on major developments in ideas and techniques. Special attention to Anderson, Cather, Wright, Hurston, Fitzgerald, Hemingway, Faulkner, Steinbeck and others. Offered annually.

ENGL 626: 3 s.h.**Modern American Drama**

American drama from World War I to the present, with emphasis on significant developments in the styles and techniques explored by such dramatists as O'Neill, Hellman, Williams, Miller, Albee, Hansberry and others. Offered annually.

ENGL 627: 3 s.h.**Modern American Poetry**

In-depth study of several major American poets, including Eliot, Pound, Millay, Moore, Hughes, Frost, Stevens, Williams and others. Offered periodically.

ENGL 628: 3 s.h.**Contemporary Amer Lit: 1945-Pr**

Major trends in poetry, fiction and drama since World War II, with emphasis on such prominent figures as Barth, Bellow, Mailer, Oates, Updike, Plath, Olson, Shepard, Mamet and others. Offered annually.

ENGL 629: 3 s.h.**Smnr Sel Am Auth:**

Intensive study of the works of selected American authors. May be taken more than once for credit. Offered periodically.

ENGL 630: 3 s.h.**American Ethnic Literature**

A study of the representative literary works of various ethnic groups in contemporary America. Designed to develop an appreciation for and a critical understanding of multiculturalism, the course will examine the cultural plurality and social tension reflected in contemporary ethnic literature and discuss complex issues, such as race, ethnicity, power, gender, and identity that are involved in the process of Americanization.

ENGL 631: 3 s.h.**Comparative Literature 1**

Foundations of modernism in world literature. Symbolism, Aestheticism, Decadence. Comparative approach to the study of literature, from Poe to Baudelaire to Pater, Sartre, Tolstoy, T.S. Eliot, Lorca, Unamuno and others. Offered periodically.

ENGL 641: 3 s.h.**Poetry**

The nature of poetry as genre: content as an extension of form; form as an extension of content; work in prosody; intensive reading in verse of all types and periods; projects in bibliography and explication. Offered annually.

ENGL 642: 3 s.h.**Drama**

Drama as a literary genre; detailed study of specimens of drama of all types and periods; emphasis on masterpieces of drama from Aeschylus to Pinter; dramatic theory and criticism. Offered annually.

ENGL 643: 3 s.h.**Fiction**

Fiction as a literary genre; in-depth study of specific works of various types and periods; emphasis on specimens of fiction from around the world. Fiction theory and criticism. Offered annually.

ENGL 644: 3 s.h.**Modern British Poetry**

Forms, techniques and schools of 20th-century British poetry. Emphasis on the major poets and representative contemporary poets. Offered periodically.

ENGL 645: 3 s.h.**Short Story: Hist, Devel, Genres**

The rise and development of the short story as a literary genre. Offered periodically.

ENGL 651: 3 s.h.**Literary Criticism**

Origin and development of literary criticism; the splintering of critical approaches and methodologies (e.g., psychological, sociological, linguistic, archetypal and mythopoeic approaches); current developments such as phenomenology and structuralism; deconstruction; feminist criticism, etc. Offered annually.

ENGL 660: 3 s.h.**Tchg ESL Listening and Speaking**

Gain a deeper understanding of the nature of spoken English and investigate current approaches to the teaching of ESL listening and speaking skills. Learn effective techniques and teaching ideas for ESL listening and speaking. Also learn the integration of listening and speaking with other language skills in ESL teaching. Note: This course counts toward the M.A. or M.Ed. degree in English, but not toward the ESL certification or the BSE Chapter 49-2 ESL requirement. Prereq: ENGL 110. Offered annually.

ENGL 661: 3 s.h.**Semnr in Transformational Ling**

An introduction to the transformational-generative approach to language analysis. The primary focus of the course is syntax, although the semantic and phonological components of grammar are also examined. Offered periodically.

ENGL 662: 3 s.h.**Dialects of American English**

An investigation of the nature of dialectal and stylistic variation in American English, focusing on selected problems and issues of recent research in linguistic geography and sociolinguistics. Offered periodically.

ENGL 663: 3 s.h.**Applied Linguistics**

Applications of current linguistic theory to the study and teaching of a variety of language-related subject matters, including grammar, composition, spelling, second language acquisition, reading and literature. Offered periodically.

ENGL 664: 3 s.h.**Teaching of Eng as Sec Lang**

Examination of leading theoretical approaches to second language learning. Methods and techniques useful in developing listening, speaking, reading and writing skills. Opportunities for peer teaching and related application projects. Offered periodically.

ENGL 666: 3 s.h.**Semnr in Tchng Lit to Adolesc**

Study of a considerable body of literature suitable for adolescents of varying abilities and backgrounds, and of techniques useful in improving reading skills and developing positive attitudes toward reading. For M.Ed. majors. Offered annually.

ENGL 667: 3 s.h.**Seminar in Eng Curriculum**

Principles and processes of curriculum development and a study of exemplary curricula for English in the middle and secondary schools. For M.Ed. majors. Offered periodically.

ENGL 668: 3 s.h.**Sem Eng Ed:**

Recent research and new directions in English education. Individualized research and study. Seminar presentation of independent investigation. For M.Ed. majors. Offered periodically.

ENGL 670: 3 s.h.**Film and Media in Sec Classrm**

Examination of structures, genres and purposes of both fiction and nonfiction film, television and advertising in the context of the secondary classroom and the ways viewers should read and interpret those media. Students will learn how the effective understanding and analysis of these forms can assist them in a deeper comprehension and construction of print texts. Emphasis will be placed on interpreting these texts as a means of developing 21st-century literacies. Offered in summer.

ENGL 677: 3 s.h.**Writing Pedagogy**

Participants learn about writing instruction by engaging in a writers' workshop, via discussions, by studying adolescent writers, by exploring new teaching processes in a case study, and by reading about writing instruction. The purpose is to provide the opportunity for students to become thoughtful and effective teachers of writing, whether in a secondary context, a college or university context or an adult education context. Students work toward this goal by situating themselves in a flexible vantage point: that of the teacher-writer-researcher.

ENGL 678: 3 s.h.**The Teacher as Writer**

This course is designed for teachers K-12 who would like to grow as writers. It consists of structured participation in an on-going writing workshop where participants become increasingly sophisticated in their use of writing process strategies, conference and response skills, various genres and styles. The course includes mini-workshops from local writers and is a place where we form a community of writers as we share, listen and grow. Participants experiment with new genres and submit at least one of their pieces for publication.

ENGL 679: 1-4 s.h.**Experimental**

Experimental

ENGL 680: 3 s.h.**Digital Portfolio Workshop**

The Digital Portfolio Workshop requires students to create a professional portfolio using writing and coursework. Students will craft a portfolio that meets their individual and career goals. The workshop includes content strategies that maximize the efficacy of the Digital Portfolio schema.

ENGL 686: 3 s.h.**Topics In English**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 687: 3 s.h.**Topics In English**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 688: 3 s.h.

Special Topics in English

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 689: 3 s.h.

Special Topics In English

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 691: 1-3 s.h.

Independent Studies

Intensive study of a particular field, curriculum area, or problem in English or English education. Student must petition the chairperson of the English department in writing for permission to take this course and may register for it only twice. Offered periodically.

ENGL 692: 3 s.h.

Writing Institute

ENGL 693: 3 s.h.

Writing Institute

ENGL 694: 3 s.h.

Writing Institute

ENGL 695: 3 s.h.

Writing Institute

ENGL 698: 3-6 s.h.

Research Report

Research Report

ENGL 699: 3-6 s.h.

Thesis:

Thesis

world languages

SPAN 500: 3-12 s.h.

Co-Op Ed Experience in Spanish

Co-Op Ed Experience in Spanish

SPAN 509: 1,3 s.h.

Applied Linguistics

Analysis of the language as behavior and emphasis on the priority of the spoken language in a systematic study of its structure. Comparison with English to explain and avoid errors of pronunciation and syntax resulting from intrusion of one's native language. Required for degree.

SPAN 512: 1-3 s.h.

Introductory Phonetics

A combination of theoretical lessons with practical exercises aimed at imparting native or near-native accents. Includes study of diction and intonation. Students are required to give readings and dramatic presentations in class and before the student body. Required for M.A.degree.

SPAN 522: 1-3 s.h.

Composition

Systematic practice in the language designed to hone students' grammar and written skills to a level of proficiency that enables students to write with accuracy and fluency.

SPAN 523: 1-3 s.h.

Composition and Stylistics

Designed to give students a feeling for Spanish style in writing, a sense of shades of meaning, and a mastery of certain difficulties of Spanish grammar and syntax. Writing of original compositions, précis writing and translation from English to Spanish. Required for degree.

SPAN 524: 1-3 s.h.

Translation and Interpretation

Intended for students who already have a firm oral and written command of Spanish, but need expert guidance in learning to avoid the pitfalls inherent in transposing thought from one language to another. Emphasis on the importance of style, exactness of expression and use of the dictionary. Practical exercises in technical, scientific, commercial, journalistic and political language.

SPAN 525: 1,3 s.h.

Advanced Oral Practice

For advanced students who already possess fluency, but need practice in acquiring the habit-forming processes and spontaneous assimilation of spoken-language patterns necessary for mature self-expression. Oral reports and guided discussion. Students in the course will be expected to assume leadership roles in activities of the school, such as public speaking, dramatics, newspaper, etc.

SPAN 530: 3 s.h.

Spanish Linguistics

An introduction to basic concepts and major divisions of modern linguistics as it pertains to the description of modern Spanish, including phonetics, phonology, morphology, syntax and semantics.

SPAN 531: 1,3 s.h.

Evolution of Spanish Language

Historical survey of the development of the Spanish language from its Latin beginnings and its later influences to the languages of today. Particularly recommended for students within a summer or two of their comprehensive examinations.

SPAN 532: 3 s.h.

Spanish Pragmatics

Application of philosophical, sociological, and linguistic theory to the use of language in the professional workplace. Interdisciplinary analyses of how and why Spanish speakers choose to use particular language forms that convey different linguistic possibilities and different meanings in different cultural contexts.

SPAN 541: 1-3 s.h.

History Spanish Civilization 1

A study of Spain, with special emphasis on the historical development of its intellectual, social and cultural life.

SPAN 542: 1-3 s.h.

Hist Spanish-American Civil

Traces the main currents of Latin American civilization from its prehistoric beginnings to the present.

SPAN 551: 1,3 s.h.

Geography of Spain

Emphasizes the role of Spain's geography in her economic and cultural development.

SPAN 561: 1-3 s.h.

History of Hispanic Art

Broad treatment of the contributions to civilization made by the Spanish-speaking peoples in the domains of art, music and architecture. Considerable use of visual materials and recordings.

SPAN 571: 1-3 s.h.**Contemporary Spain**

Presents a selected view of current developments in Spain of significance to its inhabitants. May include internal politics, foreign affairs, economy, educational system, sociological changes, arts and sciences.

SPAN 572: 1-3 s.h.**Contemporary Latin America**

Selected view of significant, current developments in a number of Latin American countries. May include internal politics, foreign affairs, economy, educational system, sociological changes, arts and sciences.

SPAN 579: 1-3 s.h.**Experimental**

Experimental

SPAN 581: 1-3 s.h.**Medieval Spanish Literature**

CR. Seminar in Medieval Spanish Literature

SPAN 582: 1-3 s.h.**Renaiss Lit:**

CR. Seminar in Renaissance Literature

SPAN 583: 1,3 s.h.**Golden Age Literature**

CR. Seminar in Golden-Age Literature

SPAN 584: 1-3 s.h.**18th Century Literature**

CR. Seminar in Eighteenth-Century Literature

SPAN 585: 1,3 s.h.**19th Century Literature**

CR. Seminar in Nineteenth-Century Literature

SPAN 586: 1-3 s.h.**20th Century Literature**

CR. Seminar in Twentieth-Century Literature

SPAN 587: 1,3 s.h.**Spanish-American Literature**

In-depth study of the literature of twentieth century Spanish American poetry, novel and drama through reading, analysis and commentary of works from each of the most prestigious authors and more influential texts.

SPAN 589: 1,3 s.h.**Current Topics**

In-depth investigation and development of a topic of current interest not normally covered in regular courses. Special topics to be covered will vary to meet the challenge of timeliness and appropriateness.

SPAN 698: 1-3 s.h.**Research Report****SPAN 699: 3 s.h.****Thesis**

Thesis

English, M.A.

The Master of Arts degree program in English is designed to strengthen professional skills for all fields and prepare students for continuing graduate study. The English M.A. enhances the student's intellectual and aesthetic life through the intense study of literature, writing studies, literary theory, film studies and linguistics. The Master of Arts degree program may be completed fully face-to-face, fully online, or a combination of both face-to-face and online.

Earning a Master of Arts degree in English at Millersville University can hone your writing skills, strengthen your analytic abilities and sharpen your investigation skills. Earning a Master of Arts degree can help you change careers or enhance your current career. The English M.A. cultivates curiosity, openness and creativity as mindset approaches to support you as you develop skills and content knowledge. These mindset values, along with the skills obtained throughout a master's degree, strengthen your impact in the workplace.

Admission Requirements

Admission to the program is open to those applicants who possess a baccalaureate degree from an accredited college with an undergraduate major in English, or by special permission. Applicants must submit supporting documents as required for general admission to a graduate program (see *Admission Requirements* section). Applicants must submit a sample of scholarly work (an 8-15-page critical or research paper recently prepared).

An admissions decision is based upon an evaluation of all application documents by the graduate program coordinator. If probational admission is granted, the graduate program coordinator will stipulate the conditions to be met by the applicant before full admission is granted (e.g., satisfactory completion of prescribed undergraduate courses or completion of a certain number of graduate English courses with a satisfactory GPA).

Degree Candidacy

Admission to degree candidacy requires successful completion of 9-18 s.h. of departmentally approved graduate coursework with an overall B average and satisfaction of the foreign language requirement. This coursework should include at least 9 s.h. at Millersville University. Students need to complete both ENGL 614 The Profession of Engl Studies and ENGL 651 Literary Criticism to achieve degree candidacy. A student who accumulates a maximum of 21 s.h. of graduate coursework and whose grade average falls below a B will be dropped from the degree program.

Upon completion of 18 s.h. of graduate coursework, a student must apply and be admitted to degree candidacy, after which he/she should, in consultation with the graduate program coordinator, develop a program which lists the requirements needed to complete the degree program. Once a student has completed 18 credits of graduate coursework, they may not proceed with their program until they have been approved by the department for degree candidacy.

Major in English, MA

Code	Title	Hours
GRADUATE CORE		
The Profession of English Studies		3
ENGL 614	The Profession of Engl Studies	
ENGL 651	Literary Criticism	3
Literature Course - Choose 1 class from:		
Any ENGL 601-645 course(s)		
Note: This requirement may not be satisfied with ENGL 614.		
Linguistics Course - Choose 1 of the following:		3
ENGL 601	Old English Language and Lit	
ENGL 602	Middle English	
ENGL 660	Tchg ESL Listening and Speakng	
ENGL 661	Semnr in Transformational Ling	

ENGL 662	Dialects of American English	
ENGL 663	Applied Linguistics	
ENGL 664	Teaching of Eng as Sec Lang	
Writing Course - Choose 1 class from:		
Any WRIT 670-675 course(s)		
WRIT 682	Genres in Nonfiction Writing	
Any WRIT 692-695 course(s)		
English Focus		
undefined - Choose 15 hours from:		15
Any 5-level ENGL course(s)		
Any 6-level ENGL course(s)		
Any 5-level WRIT course(s)		
Any 6-level WRIT course(s)		
Note: This requirement may not be satisfied with ENGL 698 or ENGL 699.		
Students are encouraged to focus 9 s.h. on one area from: Writing Studies, Linguistics, British, American or World Lit.		
CAPSTONE PROJECT		
undefined - Choose 1 of the following:		3
Upon completion of the capstone project, the student will meet with a committee for an oral exam of the project. Options include: Traditional or Creative Thesis, Curriculum Artifact, or successful completion (B or better) of ENGL 680 Digital Portfolio.		
Thesis Option - See Appendix 1		
Curriculum Artifact - See Appendix 2		
ENGL 680 with a C or better - See Appendix 3		
FOREIGN LANGUAGE COMPETENCY		
undefined - Choose 1 of the following:		
Reading competency in one foreign language is required for the MA in English. Discuss options for completing this with your advisor.		
Non-course Foreign Language Competency - See Appendix 4		
Foreign Language Course (B or Higher) - See Appendix 5		
Total Hours		27

Appendix 1. Thesis Option

Code	Title	Hours
undefined - Choose 3 hours from:		3
ENGL 699	Thesis:	

Appendix 2. Curriculum Artifact

Code	Title	Hours
ENGL 691	Independent Studies (Ind Study:Curriculum Artifact)	3

Appendix 3. ENGL 680 with a C or better

Code	Title	Hours
ENGL 680	Digital Portfolio Workshop (with Grade >= 3.0)	3

Appendix 4. Non-course Foreign Language Competency

Code	Title	Hours
Foreign Language competency may be demonstrated with a reading exam. Offered Fall and Spring only. Contact the graduate director in English to schedule the exam at least one month prior to desired date. No exams in the last two weeks of the semester		

Appendix 5. Foreign Language Course (B or Higher)

Code	Title	Hours
Earn a B or higher in a foreign language course (FREN,GERM, SPAN, etc.) numbered 201 or higher, HUMN 210/586 French Literature in English, ENGL 587 Special Topics in Translation, ENGL 601, or ENGL 602		

English, M.Ed.

The Master of Education degree in English is designed to prepare students for continuing graduate study in English or related fields and to develop in students a substantial understanding of the subject matter of English (language, literature and composition) and related educational theory (philosophy, psychology and research). These understandings are intended to lead toward increased competence in teaching and curriculum development.

Admission Requirements

Admission to the program is open to those applicants who possess a baccalaureate degree from an accredited college with an undergrad major in English, or by special permission. Applicants must submit a sample of scholarly work (an 8-15-page critical or research paper recently prepared).

After reviewing all application documents, the graduate program coordinator may recommend unqualified admission or probational admission. If the department recommends probational admission, the conditions shall be clearly stipulated (e.g., the successful completion of a designated course (or courses) either at the graduate or undergraduate level).

Students applying for admission to the M.Ed. degree must be aware that the M.Ed. degree does not confer teaching certification. Hence, students who do not already have English certification when they apply to this program may have to complete various undergraduate courses if they wish to receive that certification. Students with this degree are qualified to teach English at community colleges. The M.Ed. serves as a complement to secondary English teachers' professional development.

Degree Candidacy

Admission to degree candidacy requires successful completion of 12-15 s.h. of departmentally approved graduate coursework with an overall B average. This coursework should include at least 9 s.h. at Millersville University. Students need to complete ENGL 614 The Profession of Engl Studies and the M.Ed. professional core in order to achieve degree candidacy. A student who accumulates a maximum of 21 s.h. of graduate coursework and whose grade average falls below a B will be dropped from the degree program.

Upon completion of 18 s.h. of graduate coursework, a student must apply and be admitted to degree candidacy, after which he/she should, in consultation with the graduate program coordinator, develop a program which lists the requirements needed to complete the degree program.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
Psychological Core Requirement - Choose 1 of the following:		
EDFN 545	Advanced Educational Psychology	3
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
PSYC 625	Human Growth and Development	
Philosophical Core Requirement - Choose 1 of the following:		
EDFN 511	Comparative Education	3
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Total Hours		9

Major in English Education, MED

Code	Title	Hours
Students must take at least six courses that are offered either as graduate only or graduate mostly course level.		
ENGLISH CORE		
Profession of English Studies		
ENGL 614	The Profession of Engl Studies	3
English Electives		
15 credits of any Graduate level English courses (ENGL) except for English Education Courses		
ENGLISH EDUCATION		
undefined - Choose 2 classes from:		
ENGL 660	Tchg ESL Listening and Speakng	
ENGL 664	Teaching of Eng as Sec Lang	
ENGL 666	Semnr in Tchng Lit to Adolesc	
ENGL 667	Seminar in Eng Curriculum	
ENGL 668	Sem Eng Ed:	
ENGL 670	Film and Media in Sec Classrm	
WRIT 672	Sem: Rhetoric/Composition	
Any ENGL 692-695 course(s)		
CAPSTONE PROJECT - DIGITAL PORTFOLIO		
ENGL 680	Digital Portfolio Workshop	3
Students will complete ENGL 680 Digital Portfolio with a B or better.		
Total Hours		6

English, Post-Baccalaureate Certification

For post-baccalaureate information please see the "Certification" section of the Graduate Course Catalog.

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		
COURSE REQUIREMENTS FOR APS		

FOUNDATIONS COURSES - Choose 1 of the following options 1-2:		6
Option 1. Foundations Graduate Level		
EDFN 590	Social Foundation of Educ	
EDFN 545	Advanced Educational Psychology	
Option 2. Foundations Undergraduate Level		
EDFN 211	Foundations Modern Education	
EDFN 241	Psychological Foundations of Teaching	

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)

3.0 Minimum Cert GPA

undefined - See separate block

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

Application for APS status

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours		6
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Major in English, Post-Bacc Certification

Code	Title	Hours
ENGL 220	Introduction to Language Study	3
Intro to Film or History of Film - Choose 1 of the following:		
ENGL 240	The Art of Film	3
ENGL 481	History Of Film	
ENGL 237	Literary Research and Analysis	3
ENGL 242	Reading Our World:	3
EARLY, LATE and WORLD LITERATURE		
One World Literature Course is required. It may be shared with the Early or Late Literature requirement as appropriate.		
Early Literature Course - Choose 1 of the following:		
ENGL 231	World Literature 1	3
ENGL 233	Early British Literature	
ENGL 235	American Literary Tradition I	
Late Literature Course - Choose 1 of the following:		
ENGL 232	World Literature 2	3
ENGL 234	Later British Literature	
ENGL 236	American Literary Tradition II	
World Literature Course - Choose 1 of the following:		
ENGL 231	World Literature 1	3
ENGL 232	World Literature 2	
Modern Syntax		
ENGL 321	Modern Syntax	3
New Dimensions to World Lit		

ENGL 336	New Dimensions to World Lit	3
Shakespeare		
ENGL 405	Shakespeare	3
American Literature		
undefined - Choose 1 of the following:		3
ENGL 421	Early American Literature	
ENGL 422	The American Renaissance	
ENGL 423	Development of the Amer Novel	
ENGL 424	Realism and Naturalism to 1920	
ENGL 425	Modern Amer Fiction, 1920-1945	
ENGL 426	Modern American Drama	
ENGL 427	Modern American Poetry	
ENGL 428	Contemporary Amer Lit: 1945-P	
ENGL 429	Smnr Sel Am Auth:	
ENGL 430	Ethnic American Lit Since 1945	
Teaching Reading Literature to Young Adults		
ENGL 486	Teaching Reading & Literature to Young Adults	3
Seminar in Teaching Writing		
ENGL 487	Seminar in Teaching Writing	3
ENGL 486 and ENGL 487 must be taken before APS-Professional Bloc		
ELECTIVES		
Generally, non-ENGL courses do not count for certification, exceptions/ equivalents may be some Journalism, Film Studies or Comparative Lit		
English Perspectives Elective		
Select an ENGL elective with the Perspectives (P) Attribute.		
English Elective 400 Level		
Choose one 4-level ENGL course		
English Electives - Choose 6 hours from:		6
Any ENGL course(s)		
Total Hours		45

Professional Education - Certification

Code	Title	Hours
FOUNDATIONS BLOC		
We recommend 590 and 545 for Post-Bacc students. These courses each require 35 hours field placement at an urban school. Offered in the evenings Fall and Spring. Also offered in Summer Session. If enrolling in EDFN 211/241, please register for both courses in the same block.		
Foundations of Modern Education - Choose 1 of the following:		3
EDFN 590	Social Foundation of Educ	
EDFN 211	Foundations Modern Education	
Psychological Foundations of Teaching - Choose 1 of the following:		3
EDFN 545	Advanced Educational Psychology	
EDFN 241	Psychological Foundations of Teaching	
APS - PROFESSIONAL BLOC		
Students must meet APS eligibility requirements prior to registering. Course Appropriate PRAXIS II Exam should be taken after Professional Bloc, but prior to Student Teaching.		
Instructional Technology, Design Assessment - Choose 1 of the following:		3
EDFN 530	Instructional Technology, Design and Assessment	
EDFN 330	Instructional Technology, Design & Assessment	

Issues in Secondary Education - Choose 1 of the following:		3
EDSE 521	Issues in Second Education	
EDSE 321	Issues in Secondary Education	
Content Area Literacy for Diverse Classrooms - Choose 1 of the following:		3
EDSE 340	Content Area Literacy for Diverse Classrooms	
EDSE 540	Cntnt Area Litrcy Divers Class	
Secondary Students w/Disabilities in Inclusive Settings - Choose 1 of the following:		3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	
SPED 546	Sec Stdnts w Disab Inclu Sttgs	
ENGL 488	Teaching Secondary School English	3
STUDENT TEACHING SEMINAR		
File your Intent to Student Teach Card one year prior to the beginning of the semester in which you wish to Student Teach. Click here to access the Student Teaching Website		
EDSE 471	Student Teaching Seminar	3
STUDENT TEACHING SEMESTER		
Students must meet APS eligibility requirements prior to registering. Submit your Teacher Certification Packet 90 days prior to completion of your certification program. Click here to access the packet on the Certification Website.		
Student Teaching - Choose 9 hours from:		9
EDEN 461	Student Teaching in English	
EDEN 462	Student Teaching in English	

Total Hours 33

Graduate Writing Certificate

This is an 18-credit program of study designed for postgraduate students or community members seeking advanced coursework to better conceptualize and effectively compose diverse genres of writing, with particular attention to *professional writing*—business and technical communication, digital communication, grant writing, writing for publication in various venues, including portfolio preparation—and *creative writing*, or producing poetry, memoirs, various kinds of fiction, drama and screenplays. In addition, committed to the professionalization of writing pedagogy, this graduate certificate will offer advanced coursework in the *teaching of writing*. The Graduate Certificate in Writing can be completed as a stand-alone program for any interested student with a bachelor's degree from an accredited four-year college or university. The degree need *not* be in English. This certificate program can also provide a specialization for Millersville University graduate students seeking an M.A. or M.Ed. in English; its requirements complement the demands of both degrees.

Graduate Certificate in Writing

Code	Title	Hours
Select 15 credits (5 courses) of advanced writing coursework from the sub-fields below (Professional, Teaching or Creative).		
Professional Writing Courses		0
Teaching of Writing Courses		0
Creative Writing Courses		0
Capstone Writing Workshop		3

ENGL 680	Digital Portfolio Workshop	
Total Hours		3

Spanish Post-Baccalaureate Certification

For post-baccalaureate information please see the "Certification" section of the Graduate Course Catalog.

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		

COURSE REQUIREMENTS FOR APS

FOUNDATIONS COURSES - Choose 1 of the following options 1-2:		6
Option 1. Foundations Graduate Level		
EDFN 590	Social Foundation of Educ	
EDFN 545	Advanced Educational Psychology	
Option 2. Foundations Undergraduate Level		
EDFN 211	Foundations Modern Education	
EDFN 241	Psychological Foundations of Teaching	

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)

3.0 Minimum Cert GPA

undefined - See separate block

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

Application for APS status

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours		6
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Major in Spanish, Post-Bacc Certification

Code	Title	Hours
SPAN 201	Intermediate Spanish 1	3
SPAN 202	Intermediate Spanish 2	3
Spanish Literature - Choose 2 of the following:		6
SPAN 311	Survey of Literature 1	
SPAN 312	Survey of Literature 2	
SPAN 313	Survey of Span American Lit 1	
SPAN 314	Srvy of Span-Amer Lit 2	
Comp/Oral Express I		3

SPAN 351	Composition and Oral Expression 1	
Comp/Oral Express II		3
SPAN 352	Composition and Oral Expression 2	
Spanish Linguistics (B- minimum grade) - Choose 1 of the following:		3
SPAN 470	Spanish Linguistics	
SPAN 409	Applied Linguistics	
SPAN 509	Applied Linguistics	
SPAN 462	Evolution of Spanish Language	
SPAN 531	Evolution of Spanish Language	
Spanish Literature Course (400-level) - Choose 1 class from:		
Any SPAN 411-433 course(s)		
Any SPAN 481-487 course(s)		
Any SPAN 581-587 course(s)		
Civilization Course - Choose 1 of the following:		3
SPAN 331	Spanish Civilization 1	
SPAN 332	Spanish Civilizatn & Culture 2	
SPAN 333	Spanish Am Civilization 1	
SPAN 334	Spanish Amer Civilization 2	
Spanish Electives - Choose 9 hours from:		9
Any SPAN course(s)		
Foreign Language Testing Requirement		
Written Proficiency Interview (WPT)		
ACTFL OPI/OPIc must be taken prior to admission to the CERTIF Program. An Intermediate High rating or higher on the written proficiency interview is required. See advisor for details.		
Oral Proficiency Interview (OPI)		
ACTFL OPI/OPIc must be taken prior to admission to the CERTIF Program. An Advanced Low level or higher on the oral proficiency interview is recommended. An Intermediate High rating or higher is required. See advisor for details.		
Total Hours		33

Req Related for Spanish, Post-Bacc Certification

Code	Title	Hours
ENGL 220	Introduction to Language Study	3
Anthropology, History, Geography or Latino/a Studies - Choose 1 of the following:		3
ANTH 223	People and Cultures Of Mediter	
GEOG 343	Latin America & the Caribbean	
HIST 283	Colonial Latin America	
HIST 284	Modern Latin America	
HIST 401	Cultural Interactions across the Atlantic World, 1450-1820	
LATS 201	Introduction to Latino Studies	
Total Hours		6

Professional Education - Certification

Code	Title	Hours
FOUNDATIONS BLOC		
We recommend 590 and 545 for Post-Bacc students. These courses each require 35 hours field placement at an urban school. Offered in the evenings Fall and Spring. Also offered in Summer Session. If enrolling in EDFN 211/241, please register for both courses in the same block.		

Foundations of Modern Education - Choose 1 of the following: 3

EDFN 590 Social Foundation of Educ

EDFN 211 Foundations Modern Education

Psychological Foundations of Teaching - Choose 1 of the following: 3

EDFN 545 Advanced Educational Psychology

EDFN 241 Psychological Foundations of Teaching

APS - PROFESSIONAL BLOC

Students must meet APS eligibility requirements prior to registering. Course Appropriate PRAXIS II Exam should be taken after Professional Bloc, but prior to Student Teaching.

Instructional Technology, Design Assessment - Choose 1 of the following: 3

EDFN 530 Instructional Technology, Design and Assessment

EDFN 330 Instructional Technology, Design & Assessment

Issues in Secondary Education - Choose 1 of the following: 3

EDSE 521 Issues in Second Education

EDSE 321 Issues in Secondary Education

Secondary Students w/Disabilities in Inclusive Settings - Choose 1 of the following: 3

SPED 346 Secondary Students w/Disabilities in Inclusive Settings

SPED 546 Sec Stdnts w Disab Inclu Sttgs

Teaching of Foreign Languages 3

FORL 480 Tchg For Lang in Sec School

STUDENT TEACHING SEMINAR

File your Intent to Student Teach Card one year prior to the beginning of the semester in which you wish to Student Teach. Click here to access the Student Teaching Website

EDSE 471 Student Teaching Seminar 3

STUDENT TEACHING SEMESTER

Students must meet APS eligibility requirements prior to registering. Submit your Teacher Certification Packet 90 days prior to completion of your certification program. Click here to access the packet on the Certification Website.

Student Teaching - Choose 9 hours from: 9

EDFL 461 Student Teaching Forgn Lang

EDFL 462 Student Teaching Forgn Lang

Total Hours 30

History

The Program

The Department of History offers:

- History, M.A. (p. 408)
- Social Studies Post-Baccalaureate Certification (p. 408)

Davis, Robyn; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Columbia University, 1993; M.A., University of Oklahoma, 2001; Ph.D., Ibid., 2009

Frankum, Ronald; Professor

College of Arts, Humanities and Social Sciences

B.A., Syracuse University, 1988, M.A., University of Kentucky, 1991; Ph.D., Syracuse University, 1997

Kevorkian, Tanya; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Mount Holyoke College, 1987; M.A., Johns Hopkins University, 1993; Ph.D., Ibid., 1997

Khiterer, Victoria; Professor

College of Arts, Humanities and Social Sciences

B.S., Kiev State Pedagogical Institute (Ukraine), 1992; M.A., Russian State University for Humanities, 1996; Ph.D., Ibid., 1996; Brandeis University, 2008

Maxwell, Clarence; Assistant Professor

College of Arts, Humanities and Social Sciences

B.A., St. Leo University (United Kingdom), 1985; B. A., University of Keele (United Kingdom), 1990; M.A., University of Hull (United Kingdom), 1995; Ph.D., University of Warwick (United Kingdom), 1999

Onek, Curthberth; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Makerere University (Uganda), 1985/ M.A., University of Toronto (Canada), 1991; M.S., York University (Toronto), 1997; M.A., The Royal Military College of Canada, 2005; Ph.D., University of Connecticut, 2009

Shelor, Erin; Associate Professor

College of Arts, Humanities and Social Sciences

B.A., Furman University, 1992; M.A., East Tennessee State University, 1996; Ph.D., University of Kentucky, 2003

Sommar, Mary; Assistant Professor

College of Arts, Humanities and Social Sciences

B.A., Temple University, 1975; M.Div., Yale University, 1990; Ph.D., Syracuse University, 1998

HIST 500: 3-12 s.h.

Co-Op Ed Experience in History

Co-Op Ed Experience in History

HIST 501: 3 s.h.

U.S. History, Beginnings-1815

An intensive readings and discussion course focusing on the major issues and interpretations of early American history. Offered every third semester.

HIST 502: 3 s.h.

U.S. History 1815-1919

An intensive readings and discussion course focusing on the major issues and interpretations for the period 1815-1919. Offered every third semester.

HIST 503: 3 s.h.

U.S. History, 1919 to present

An intensive readings and discussion course focusing on the major issues and interpretations for the period since World War I. Offered every third semester.

HIST 505: 3 s.h.

Early Modern Europe, 1500-1789

An intensive readings and discussion course focusing on the major issues and interpretations of early modern Europe. Offered every third semester.

HIST 506: 3 s.h.

Age of Revolution, 1789-1914

An intensive readings and discussion course focusing on the major issues and interpretations of European history from the French Revolution to the First World War. Offered every third semester.

HIST 507: 3 s.h.**Modern Europe, 1914-Present**

An intensive readings and discussion course focusing on the major issues and interpretations of recent European history. Offered periodically.

HIST 510: 3 s.h.**Tpc in US Hist:**

A topical readings course devoted to selected issues and problems in the history of the United States. Offered annually.

HIST 511: 3 s.h.**Tpc in Eur Hist:**

A topical readings course devoted to selected issues and problems in European history. Offered annually.

HIST 512: 3 s.h.**Topics in Regional History**

A topical readings course devoted to selected issues and problems in regional and comparative history. Offered periodically.

HIST 520: 3 s.h.**Historiography and Historical Research**

Essential to the practice of history are the ability to think historically, familiarity with its basic sources and an understanding of past historiographical traditions. This course seeks to offer instruction in the traditions of history writing that shaped and contextualized the present historiographical tradition, as well as provide training in the execution of various methods of historical research and writing. Offered annually.

HIST 610: 3 s.h.**Smnr in US Hist:**

A research seminar devoted to selected issues and problems in United States history. Offered annually.

HIST 611: 3 s.h.**Seminar in European History**

A research seminar devoted to selected issues and problems in European history. Offered annually.

HIST 612: 3 s.h.**Seminar in Regional History**

A research seminar devoted to selected issues and problems in regional and comparative history. Offered periodically.

HIST 691: 1-3 s.h.**Independent Study**

Independent Study

HIST 699: 3 s.h.**Thesis:**

Thesis:

History, M.A.

Admission Requirements

The Master of Arts in history is available to all qualified candidates. Applicants should have a 3.0 GPA in history and an overall GPA of 2.8. Applicants must submit a writing sample of between five and 10 pages, preferably showing use of primary and secondary sources and a grasp of historical thinking. Applicants without academic training in history may be admitted probationally and may be asked to complete the sequence of introductory surveys in U.S. and European history. The Graduate Record Exam is required for applicants whose undergraduate CGPA is below 2.8. For additional admission information, refer to the *Admission Requirements* section.

Degree Requirements

The Department of History requires that all students enrolled in the M.A. program maintain the level of academic progress described in the *Academic Policies* section. In addition to University requirements, any student entering the history graduate program who receives a second C in his/her degree program is automatically suspended from the program. A student suspended on this basis must petition the department's chairperson and graduate faculty for reinstatement.

Major in History, MA

Code	Title	Hours
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If you have courses at the bottom of your audit under 'Not Counted Towards Degree Requirements', they may be excluded due to the date of your admission to your degree program. To have these courses evaluated for inclusion in your program you need to complete a Transcript Review, which you can access online by clicking here.

HISTORY REQUIRED COURSES		
HIST 520	Historiography and Historical Research	3
Choose six 500-level seminars - Choose 6 of the following:		18
HIST 501	U.S. History, Beginnings-1815	
HIST 502	U.S. History 1815-1919	
HIST 503	U.S. History, 1919 to present	
HIST 505	Early Modern Europe, 1500-1789	
HIST 506	Age of Revolution, 1789-1914	
HIST 507	Modern Europe, 1914-Present	
HIST 508		
HIST 510	Tpc in US Hist:	
HIST 511	Tpc in Eur Hist:	
HIST 512	Topics in Regional History	
Choose two 600-level seminars - Choose 2 of the following:		6
HIST 610	Smnr in US Hist:	
HIST 611	Seminar in European History	
HIST 612	Seminar in Regional History	
HIST 691	Independent Study	
THESIS OR NON-THESIS OPTION		
Thesis or Additional 600-Level History Seminar - Choose 1 of the following:		3
HIST 610	Smnr in US Hist:	
HIST 611	Seminar in European History	
HIST 612	Seminar in Regional History	
HIST 691	Independent Study	
HIST 699	Thesis:	

Total Hours **30**

Social Studies Post-Baccalaureate Certification

For post-baccalaureate information please see the "Certification" section of the Graduate Course Catalog.

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
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*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.

COURSE REQUIREMENTS FOR APS

FOUNDATIONS COURSES - Choose 1 of the following options 1-2: 6

Option 1. Foundations Graduate Level

EDFN 590 Social Foundation of Educ

EDFN 545 Advanced Educational Psychology

Option 2. Foundations Undergraduate Level

EDFN 211 Foundations Modern Education

EDFN 241 Psychological Foundations of Teaching

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)

3.0 Minimum Cert GPA

undefined - See separate block

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

Application for APS status

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours 6

Major in Social Studies, Certification

Code	Title	Hours
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MAJOR REQUIRED CORE FOUNDATION

ECON 100	Introductory Economics	3
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ECON 203	Introduction to World Economy	3
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GEOG 120	Human Geography	3
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Geography Course - Choose 1 of the following:		3
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GEOG 141	World Regional Geography	
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GEOG 226	Political Geography	
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GEOG 248	Geography of Africa	
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GEOG 342	Europe	
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GEOG 343	Latin America & the Caribbean	
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GEOG 344	North America	
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GEOG 281	Maps and GIS	3
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GOVT 111	Introduction to American Government	3
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GOVT 221	Introduction to Comparative Political Systems	3
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GOVT 251	Introduction to Global Politics	3
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History Electives - Choose 2 of the following:		6
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HIST 101	Europe and the World 1350-1789	
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HIST 102	Europe and World 1789-Present	
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HIST 206	World Culture & Religion to 1500	
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HIST 280	Pre-Colonial Africa	
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HIST 105	History Matters	3
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HIST 106	Contours of US History	3
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The Art Craft of History or Historiography Hist Research - Choose 1 of the following: 3

HIST 205	The Art & Craft of History	
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HIST 520	Historiography and Historical Research	
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PSYC 100	General Psychology	3
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SOCY 210	Sociology of the Family	3
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Total Hours 45

Social Studies Concentration Courses

Code	Title	Hours
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Due to the interdisciplinary nature of the social studies major, please work closely with your advisor to select courses appropriate to your plan. You must take 15 total credits to complete the concentration.

Geography		0
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You may take up to 9 credits of Geography (GEOG) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Government		0
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You may take up to 9 credits of Government (GOVT) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

History		0
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You may take up to 9 credits of History (HIST) at the 200-level or higher. toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Anthropology		0
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You may take up to 6 credits of Anthropology (ANTH) courses toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Psychology		0
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You may take up to 6 credits of Psychology (PSYC) at the 200-level or higher toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Sociology		0
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You may take up to 6 credits of Sociology (SOCY) courses toward your 15 credit SST Concentration. You have taken 0 credits. Speak to your advisor about course options and click here to access the web schedule.

Total Hours 0

Professional Education - Certification

Code	Title	Hours
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FOUNDATIONS BLOC

We recommend 590 and 545 for Post-Bacc students. These courses each require 35 hours field placement at an urban school. Offered in the evenings Fall and Spring. Also offered in Summer Session. If enrolling in EDFN 211/241, please register for both courses in the same block.

Foundations of Modern Education - Choose 1 of the following:		3
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EDFN 590	Social Foundation of Educ	
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EDFN 211	Foundations Modern Education	
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Psychological Foundations of Teaching - Choose 1 of the following:	3
EDFN 545 Advanced Educational Psychology	
EDFN 241 Psychological Foundations of Teaching	

APS - PROFESSIONAL BLOC

Students must meet APS eligibility requirements prior to registering. Course Appropriate PRAXIS II Exam should be taken after Professional Bloc, but prior to Student Teaching.

Instructional Technology, Design Assessment - Choose 1 of the following:	3
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EDFN 530 Instructional Technology, Design and Assessment	
EDFN 330 Instructional Technology, Design & Assessment	

Issues in Secondary Education - Choose 1 of the following:	3
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EDSE 521 Issues in Second Education	
EDSE 321 Issues in Secondary Education	

Content Area Literacy for Diverse Classrooms - Choose 1 of the following:	3
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EDSE 340 Content Area Literacy for Diverse Classrooms	
EDSE 540 Cntnt Area Litrcy Divers Class	

Secondary Students w/Disabilities in Inclusive Settings - Choose 1 of the following:	3
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SPED 346 Secondary Students w/Disabilities in Inclusive Settings	
SPED 546 Sec Stdnts w Disab Inclu Sttgs	

EDSE 433 Teaching of Secondary Social Studies	3
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STUDENT TEACHING SEMINAR

File your Intent to Student Teach Card one year prior to the beginning of the semester in which you wish to Student Teach. Click here to access the Student Teaching Website

EDSE 471 Student Teaching Seminar	3
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STUDENT TEACHING SEMESTER

Students must meet APS eligibility requirements prior to registering. Submit your Teacher Certification Packet 90 days prior to completion of your certification program. Click here to access the packet on the Certification Website.

Student Teaching - Choose 9 hours from:	9
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EDSS 461 Student Teaching in Soc Sci	
EDSS 462 Student Teaching in Soc Sci	

Total Hours	33
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College of Education and Human Services

Welcome to the College of Education and Human Services where we inspire students to fulfill their dreams of becoming teachers, school leaders, psychologists, coaches, social workers and more.

Together we partner with students to provide them with the knowledge and skills needed to become strong, independent professionals in their fields.

Since 1855, when Millersville University became Pennsylvania's first Normal School, our education programs have been at the forefront in the region. Education and educator preparation have certainly evolved since then, so we have integrated 21st century approaches to teaching and learning into our early childhood, middle level, secondary and special education programs.

Our psychology faculty take undergraduate students on a journey through human behavior. We also prepare graduate students for careers in clinical psychology, school psychology and school counseling.

If you have a commitment to greatness and are interested in sports journalism, sports management, athletic training or coaching, Wellness and Sports Sciences is the place for you.

Our School of Social Work offers bachelor's, master's and doctoral programs to begin or continue your career to be a positive agent of social change.

In the classroom, in the community and abroad, together we will achieve the remarkable. Your passion will be guided by some of the nation's top professors leading to a 95 percent employment rate.

the departments

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- Educational Foundations (p. 418)
- Psychology (p. 427)
- Social Work (p. 435)
- Special Education (p. 445)
- Wellness and Sport Sciences (p. 452)

the programs

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- Assessment, Curriculum and Teaching, M.Ed. - Certification (p. 420)
- Assessment, Curriculum and Teaching, M.Ed. - Inclusive Practices (p. 420)
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Early, Middle and Exceptional Education

The Programs

The Department of Early, Middle and Exceptional Education offers:

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Burke, Jennifer; Associate Professor
College of Education and Human Services
B.S., Seton Hall University, 2004; M.A., Ibid., 2008; Ph.D., Rutgers University, 2016

Colabucci, Lesley; Associate Professor
College of Education and Human Services
B.A., University of Maryland, 1992; M.S., University of Wisconsin-Madison, 1994; Ph.D., The Ohio State University, 2004

Heilshorn, Kimberly; Associate Professor

College of Education and Human Services
B.A., Boston College, 1990; M.Ed., Millersville University, 1992; Ed.D., Widener University, 2003

Himmele, William; Professor
College of Education and Human Services
B.S., State University of New York at Buffalo, 1988; M.A., Biola University, 1994; Ph.D., Ibid., 2001

Himmele, Persida; Professor
College of Education and Human Services
B.A., State University of New York at Buffalo, 1988; Ed.M., Ibid., 1991; Ph.D., Biola University, 2001

Hossain, Kazi; Associate Professor
College of Education and Human Services
B.S., Dhaka University (Bangladesh), 1984; M.Ed., Edinboro University of Pennsylvania, 1991; Ed.D., Indiana University of Pennsylvania, 2000

Hower, Aileen; Associate Professor
College of Education and Human Services
B.A., Bloomsburg University, 1992; M.A., University of Wyoming, 1994; M.A., The College of New Jersey, 1997; Ed.D., Widener University, 2013

Jackson, Sarah; Assistant Professor
College of Education and Human Services
B.A., University of Puget Sound, 2007; M.F.A., Savannah College of Art and Design, 2011; M.A., Hollins University, 2014; Ph.D., The Ohio State University., A.B.D.

Petula, Jason; Associate Professor
College of Education and Human Services
B.S., The Pennsylvania State University, 1995; M.Ed., Temple University, 1999; M.S., Wilkes University, 2001; Ph.D., The Pennsylvania State University, 2007

Powers-Costello, Elizabeth; Associate Professor
College of Education and Human Services
B.S., Bloomsburg University of Pennsylvania, 1989; M.Ed., Ibid., 1993; M.Ed., Antioch New England University, 1997; Ph.D., University of North Carolina, 2007

Shettel, Jennifer; Professor
College of Education and Human Services
B.S.Ed., Millersville University, 1992; M.Ed., The Pennsylvania State University, 1997; Ed.D., Widener University, 2009

Wolfgang, Charlton; Associate Professor
College of Education and Human Services
B.S., Messiah College, 1993; M.S.Ed., Lebanon Valley College, 2002; Ph.D., Drexel University, 2013

ECHD 511: 3 s.h.**Early Childhood Education in Today's Society**

An overview of the field of early childhood education. Historical and philosophical influences on past and current approaches to teaching young children are traced and analyzed. The developmental needs and characteristics of the young child, with emphasis on the pre-primary level, are related to current curriculum programs and practices. Emphasis is placed on the necessity of using developmentally appropriate learning materials and teaching strategies. Topical study includes concepts, definitions, child developmental theories and skills needed by today's classroom professionals. In lieu of field experiences, appropriate teaching behavior is modeled by the instructor, and actual classroom occurrences are examined through Teacher Work Sample (TWS).

ECHD 519: 3 s.h.**Seminar in Early Childhood Education**

Investigation of contemporary goals of early childhood education. Provides analysis of organizational plans, classroom environment, teaching strategies and resources, and noteworthy trends and innovations. Application to individual situations is stressed. Focus will vary. Offered periodically.

ECHD 610: 3 s.h.**Advanced Curriculum, Instruction and Assessment**

This course is designed to prepare students in the areas of curriculum, instruction, and assessment young learners (i.e., PreK – 4th Grade). The course will focus on curricular philosophy and theory, approaches to early childhood education, pedagogical content knowledge, child development, and assessment of young learners. Current research, practice, and trends in early childhood education will be considered.

ECHD 611: 3 s.h.**Affective and Psychmtr Emphasis**

Investigation of contemporary practices and research pertaining to the affective and psychomotor development of children, birth to age 8. Primarily covers emotional growth, socialization, self-concept, aesthetic awareness, physical growth and perception. Offered annually.

ECHD 613: 3 s.h.**Home, School, and Community**

Examination of current programs and recommended procedures for developing communication between home and school. Acquaints students with community resources and services available to families and teachers. Opportunities to develop a practical parent-teacher communication program for an individual teaching situation. Offered annually.

ECHD 614: 3 s.h.**Advanced Curriculum in ECHD**

Extension of basic curriculum theory and practice as it applies to programs for young children. Sources of influence on early childhood curriculum—such as professional organizations, learning theorists and historical practice—will be examined. Students analyze and revise or refine curriculum content and practices in their individual learning situations. Offered annually.

ECHD 615: 3 s.h.**Adm and Suprv of Echd Pgrms**

The role of the early childhood program administrator as an educational leader. Topics include educational decision making; program development; effective staff supervisory skills; facility management; funding sources and procedures; advocacy; and health, safety and nutrition issues. Offered periodically.

ECHD 690: 4.5-9 s.h.**Graduate Student Teaching**

This course is the student teaching experience for our Early Childhood Post Baccalaureate teacher candidates. The successful completion of this student teaching experience is required for all teacher candidates in order to be certified in the state of Pennsylvania.

ECHD 699: 3-6 s.h.**Thesis:**

Each student writes and orally defends an individual thesis of some significance in the field of early childhood education. Prereq: 24 graduate s.h.

Advanced Children, Youth & Families Certificate

Adv Children, Youth and Families Certificate

Code	Title	Hours
If you have courses at the bottom of your audit under 'Other Electives' or 'Not Counted Toward Degree', they may be excluded due to the date of your admission to the ACYF program. To have these courses evaluated for inclusion in your program You will need to work with the Social Work admissions committee to determine your eligible exemptions per your prior coursework.		
SOWK 605	Child Welfare	3
SOWK 608	Administration and Supervision	3
SOWK 611	Children and Youth At-Risk	3
Electives for ACYF Certificate - Choose 2 of the following:		6
SOWK 602	Behavioral Health	
SOWK 603	Gender Issues	
SOWK 604	Health Care	
SOWK 607	Emergency Mentl Hlth and Trauma	
SOWK 617	Addictions in Field of SOWK	
SOWK 619	Global Perspectives in SOWK	

Total Hours**15**

Early Childhood & Elementary Education, M.Ed.

The Master of Education degree program in early childhood & elementary education prepares professionals for teaching and administrative positions in child-care and preschool settings, elementary schools, early-intervention special education programs, and colleges. The program is based on knowledge and developmentally appropriate practices for the teaching and learning of young children (birth through 8 years of age). An interdisciplinary program, it focuses on the connections of children, family, educational settings and community so essential to a young child's total development and individual, diverse needs. The program addresses early-childhood issues using sound research practices and principles, and includes a focus on the graduate student's individual professional needs. Courses are taught by graduate faculty members from the

1. Early, Middle and Exceptional Education,
2. Educational Foundations, and
3. Psychology Departments.

Students may also take electives in a variety of related disciplines including but not limited to Art, Applied Engineering, History, Safety and Technology, Social Work, Social Work etc. Students may elect to pursue an endorsement or certificate to fulfill elective requirements (I.E. ESL Online Learning, STEM, etc.).

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
Psychological Core Requirement - Choose 1 of the following:		3
EDFN 545	Advanced Educational Psychology	
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
PSYC 625	Human Growth and Development	
Philosophical Core Requirement - Choose 1 of the following:		3
EDFN 511	Comparative Education	
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Total Hours		9

Major-Early Childhood & Elementary Education - MED

Code	Title	Hours
REQUIRED COURSES		
MED Early Childhood students may elect to complete a Thesis option or Non-Thesis Option. The Non-Thesis requirements appear until you have registered for ECHD 699, at which time the thesis option will be noted.		
Affective Psychomotor Emphasis		3
ECHD 611	Affective and Psychmtr Emphasis	
Cognitive Emphasis in ECHD Or Seminar: Diverse Learners - Choose 1 of the following:		3
ECHD 612		
ECHD 519	Seminar in Early Childhood Education	
ECHD 613	Home, School, and Community	3
ECHD 614	Advanced Curriculum in ECHD	3
Early Intervention for Developmental Delays		3
SPED 618	Advanced Topics in Early Intervention	
NON-THESIS ELECTIVES OPTION		
Electives approved in cooperation with your graduate coordinator may be applied here. Please have your graduate coordinator email approved courses to lucie.lehr@millersville.edu.		
Written Comprehensive Exam		
Written Comprehensive Exam		
Total Hours		15

Early Childhood Education Post-Baccalaureate Certification

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		
NO SPECIFIED COURSE REQUIREMENTS FOR APS		
ACT 126 - Educator Ethics Training		
You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)		
3.0 Minimum Cert GPA - See separate block		
If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.		
No dispositions-related holds		
If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.		
APS registration status		
You ARE NOT eligible to register for courses requiring APS status.		
Application for APS status		
When all requirements are met, you must submit application for admission to APS status. Click here for the application.		
Total Hours		0

Major Early Childhood Education - Post-Bacc Cert

Code	Title	Hours
You MUST contact your Early Childhood Education Advisor and schedule an appointment to map out your program prior to registration for ANY coursework. Failure to meet with your advisor may cause you to take unnecessary coursework or extend your program due to timing or courses offered.		
EDUCATION CORE FOR EARLY CHILDHOOD (PK-4)		
EDUC 580	Methods for Teaching English Language Learners	3
EDUC 535	Children's Literature and Creative Experiences for Young Children and Adolescents	3
SPED 618	Advanced Topics in Early Intervention	3
Curriculum, Instruction, Assessment: Engaging Young Children		3
ECHD 610	Advanced Curriculum, Instruction and Assessment	
ECHD 613	Home, School, and Community	3
Total Hours		15

Professional Education- Early Childhood Cert

Code	Title	Hours
PROFESSIONAL EDUCATION		
EDUC 651	Math in the School Program	3
EDUC 643	Curriculum Trends in Social Studies	3
EDUC 661	Science in the School Program	3
RDED 620	Current Practices in Literacy Education	3

STUDENT TEACHING

Student Teaching - Choose 6 hours from:	6
ECHD 690 Graduate Student Teaching	
Total Hours	18

For post-baccalaureate information please see the "Certification" section of the Graduate Course Catalog.

ESL Program Specialist Certificate

Millersville University is an approved provider of an English as a Second Language Program Specialist certificate program. Persons who have a valid Pennsylvania Instructional I or Instructional II certificate and have enrolled in and completed the Millersville University ESL coursework are eligible to receive ESL add-on certification from the Pennsylvania Department of Education.

ESL Certification Required Clearances:

- ACT 114 - FBI Fingerprint Needed
 - You must submit your FBI Fingerprint Clearance
- ACT 34 - Criminal Record Check Needed
 - You must submit your Criminal Record Check
- ACT 151 - Child Abuse Clearance Needed
 - You must submit your Child Abuse Clearance
- Negative TB Test of Chest X-ray Needed
 - You must submit your Negative TB Test or Chest X-ray

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		
NO SPECIFIED COURSE REQUIREMENTS FOR APS		
ACT 126 - Educator Ethics Training		
You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)		
3.0 Minimum Cert GPA - See separate block		
If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.		
No dispositions-related holds		
If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.		
APS registration status		
You ARE NOT eligible to register for courses requiring APS status.		
Application for APS status		
When all requirements are met, you must submit application for admission to APS status. Click here for the application.		
Total Hours		0

English as a Second Language - Certification

Code	Title	Hours
REQUIRED COURSES		
EDUC 561	Second Language Acquisition: Theory, Programs & Assessment	3
EDUC 562	Methods for Teaching English Language Learners	3
EDUC 563	Linguistic and Cultural Diversity in the Classroom	3
EDUC 564	Assessment, Policies & Practice in Teaching of English Language Learners	3
EDUC 565	Language & Literacy Interventions: Clinical Practicum	6
Total Hours		18

Gifted Education, M.Ed.

The Master of Education degree in gifted education is designed to provide the specialized knowledge needed by teachers and other educational personnel who work with gifted and talented students (K-12). The curriculum is appropriate for teachers and other education professionals whether they provide instruction in special programs for the gifted or teach in inclusive settings. The M.Ed. degree in gifted education does not confer teacher certification.

The Department of Early, Middle and Exceptional Education is responsible for the gifted education program, although the program itself is multidisciplinary. Courses in the gifted education program are taught by graduate faculty members from the early childhood education, educational foundations, special education and psychology departments.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
Psychological Core Requirement - Choose 1 of the following:		
EDFN 545	Advanced Educational Psychology	
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
PSYC 625	Human Growth and Development	
Philosophical Core Requirement - Choose 1 of the following:		
EDFN 511	Comparative Education	3
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Total Hours		9

Major in Gifted Education - MED

Code	Title	Hours
REQUIRED COURSES		
GFED 670	Psychology of the Gifted	3
GFED 674	Program for the Gifted	3
Evaluating Instruct. Effectiveness: App for the Gifted		
GFED 675	Eval Instructionl Effectivness	3
Teaching Gifted Learners: Inst. Strat. or Topics - Choose 1 of the following:		
GFED 676	Tchg Gftd Lnrs:Instruct Strat	
GFED 686	Topics in Gifted Education	

GFED 687	Topics in Gifted Education	
GFED 688	Topics in Gifted Education	
GFED 690	Clinical Practicum	6
Advisor Approved Area of Specialization		
A minimum of 9 credits in an area of specialization must be selected with the approval of your advisor. You have 0 credits. You need 9 credits. The specialization areas can include, but are not limited to, Elementary Ed, Early Childhood Ed, Language and Literacy, English as a Second Language, English, Fine Arts, Foreign Languages, Mathematics, Educational Leadership, Sciences, Social Sciences, Psychology, Special Education, or Technology Education		9
Total Hours		27

Gifted Education, Post-Baccalaureate Certificate

The certificate program can be completed in four semesters, with offerings year-round (fall, spring and summer). The completed certificate (18 s.h.) can be applied to its entirety towards the requirements for the Master of Education degree in Gifted Education.

Post-Baccalaureate Gifted Education Certificate

Code	Title	Hours
Credits Required for Major		

	true	
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REQUIRED COURSES

Upon completion of the first four courses students are eligible to apply for the Gifted Education Endorsement through the PA Dept of Education.

GFED 670	Psychology of the Gifted	3
GFED 674	Program for the Gifted	3
Evaluating Instruct. Effectiveness: App for the Gifted		3
GFED 675	Eval Instructionl Effectivness	
Teaching Gifted Learners Instructional Strategies		3
GFED 676	Tchg Gftd Lnrs:Instruct Strat	
GFED 690	Clinical Practicum	6
Total Hours		18

Language & Literacy, M.Ed. - English as a Second Language

The Department of Early, Middle and Exceptional Education offers a master's in language and literacy education in which students choose one of two concentrations: a literacy concentration leading to reading specialist certification, or an ESL concentration leading to ESL certification. Both concentrations are available for elementary and secondary teachers who possess an Instructional Certificate in Pennsylvania. A Master of Education in language and literacy education offers the student the opportunity to participate in original research and experiential programs in this field.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
Psychological Core Requirement - Choose 1 of the following:		3
EDFN 545	Advanced Educational Psychology	
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
PSYC 625	Human Growth and Development	
Philosophical Core Requirement - Choose 1 of the following:		3
EDFN 511	Comparative Education	
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Total Hours		9

Major in Language and Literacy ESL Conc - MED

Code	Title	Hours
LANGUAGE AND LITERACY REQUIREMENTS		
RDED 622	Reading and Writing in the Content Areas	3
Language or Literature Requirement - Choose 1 of the following:		3
EDUC 535	Children's Literature and Creative Experiences for Young Children and Adolescents	
EDUC 636	Literature and Response	
ENGL 661	Semnr in Transformational Ling	
ENGL 663	Applied Linguistics	
RDED 621	Foundations of Reading and Writing	3
ESL REQUIREMENTS		
Second Language Acq: Theory, Programs Assessment		3
EDUC 561	Second Language Acquisition: Theory, Programs & Assessment	
Methods for Teaching English Lang Learners		3
EDUC 562	Methods for Teaching English Language Learners	
EDUC 563	Linguistic and Cultural Diversity in the Classroom	3
Assess, Policies Pract in Teach of Eng Lang Learners		3
EDUC 564	Assessment, Policies & Practice in Teaching of English Language Learners	
Lang Literacy Interventions: Clinical Practicum		6
EDUC 565	Language & Literacy Interventions: Clinical Practicum	
Total Hours		27

Language and Literacy Education, M.Ed. - Reading Concentration

The Department of Early, Middle and Exceptional Education offers a master's in language and literacy education in which students choose one of two concentrations: a literacy concentration leading to reading specialist certification, or an ESL concentration leading to ESL certification. Both concentrations are available for elementary and secondary teachers who possess an Instructional Certificate in Pennsylvania. A Master of Education in language and literacy education

offers the student the opportunity to participate in original research and experiential programs in this field.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
Psychological Core Requirement - Choose 1 of the following:		3
EDFN 545	Advanced Educational Psychology	
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
PSYC 625	Human Growth and Development	
Philosophical Core Requirement - Choose 1 of the following:		3
EDFN 511	Comparative Education	
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Total Hours		9

Major in Language & Literacy - Reading Specialist

Code	Title	Hours
REQUIRED COURSES		27
EDUC 562	Methods for Teaching English Language Learners	
EDUC 636	Literature and Response	
RDED 621	Foundations of Reading and Writing	
RDED 622	Reading and Writing in the Content Areas	
RDED 623	Diag. of Reading & Writing Disabilities: Practicum	
RDED 624	Diag and Correction of Reading and Writing Diff	
RDED 625	Psych & Social Factors in Reading & Writing Ability	
RDED 626	Literacy Leadership	
Literacy Course or Summer Institute - Choose 3 hours from:		3
RDED 627	Sp Top:	
RDED 628	Sp Topics:	
RDED 629	Special Topics in Reading	
RDED 630	Sp Top:	
Any ADVAPPROVED course(s)		
If RDED 627, 628, 629 or 630 is not taken as your Literacy Course or Summer Institute, your advisor will need to email goffasst@millersville.edu with the approved course. In addition to the required credits above, students may choose to complete an optional thesis, RDED 699.		
Total Hours		30

Literacy Coaching Endorsement

The fundamental goal of the Literacy Coaching Endorsement is to prepare teachers who will be effective in helping improve the knowledge, skills, and practices of teachers, thus enhancing student achievement. A literacy coach is one who helps teachers to recognize what they know and can do, assists teachers as they strengthen their ability to make more effective use of what they know and do, and supports teachers as they learn more and do more. The Instructional Coaching Endorsement is available for reading specialists who desire to strengthen their professional knowledge, build skills in instructional coaching, and stand out in their field.

This is an endorsement to be added to an existing reading specialist certification.

PDE Endorsement

Code	Title	Hours
ENDORSEMENT IN LITERACY/INSTRUCTIONAL COACHING PK-12 - See separate block		
Total Hours		0

Concentration in Literacy/Instructional Coaching

Code	Title	Hours
LITERACY/INSTRUCTIONAL COACH ENDORSEMENT		
RDED 626	Literacy Leadership	3
EDSU 703	Curriculum and Supervision	3
RDED 798	Advanced Theories Pedagogy of Reading	3
Applied Supervision: Clinical Practicum - Choose 3 hours from:		3
RDED 799	Applied Supervision: Clinical Practicum	
Total Hours		12

Online Teaching Endorsement

This program is among the first in the state approved to deliver the PDE endorsement in Online Teaching and consists of twelve (12) graduate credits offered by the Educational Foundations department in a fully online format. Faculty members for this program are among state and national leaders in online pedagogy and instruction, and are also affiliated with Millersville's graduate degree programs in Leadership for Teaching and Learning, Special Education and other education degrees.

This program is for:

- K-12 Educators who want to develop Online Teaching Expertise
- Classroom Teachers Already Using Flipped and Hybrid Instruction
- Curriculum Supervisors and Technology Coordinators
- Current and Prospective Teachers Seeking an Edge in the Job Market
- Educational Administrators and School Leaders
- Community college faculty in online and hybrid programs

Program Specialist-ESL Post-Baccalaureate Certification

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		

NO SPECIFIED COURSE REQUIREMENTS FOR APS

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)

3.0 Minimum Cert GPA - See separate block

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

Application for APS status

When all requirements are met, you must submit application for admission to APS status. [Click here for the application.](#)

Total Hours 0

English as a Second Language - Certification

Code	Title	Hours
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REQUIRED COURSES

EDUC 561	Second Language Acquisition: Theory, Programs & Assessment	3
EDUC 562	Methods for Teaching English Language Learners	3
EDUC 563	Linguistic and Cultural Diversity in the Classroom	3
EDUC 564	Assessment, Policies & Practice in Teaching of English Language Learners	3
EDUC 565	Language & Literacy Interventions: Clinical Practicum	6

Total Hours 18

Reading Specialist Certification

Millersville University is an approved provider of a Reading Specialist Certification. Persons who have a valid Pennsylvania Instructional I or Instructional II certificate and have enrolled in and completed the Millersville University Reading Specialist courses are eligible to receive reading specialist certification from the Pennsylvania Department of Education.

Required Clearances:

- ACT 114 - FBI Fingerprint Needed
- ACT 34 - Criminal Record Check Needed
- ACT 151 - Child Abuse Clearance Needed
- Negative TB Test or Chest X-ray Needed

Reading Specialist, Post-Bacc Certification

Code	Title	Hours
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REQUIRED CLEARANCES

ACT 114 - FBI Fingerprint Needed		
You must submit your FBI Fingerprint Clearance		
ACT 34 - Criminal Record Check Needed		
You must submit your Criminal Record Check		
ACT 151 - Child Abuse Clearance Needed		
You must submit your Child Abuse Clearance		
Negative TB Test or Chest X-ray Needed		
You must submit your Negative TB Test or Chest X-ray		

REQUIRED COURSES

EDUC 562	Methods for Teaching English Language Learners	3
Literature and Response - Choose 1 of the following:		
EDUC 636	Literature and Response	3

EDUC 533	Nonfiction Lit and Literacy	
RDED 621	Foundations of Reading and Writing	3
RDED 622	Reading and Writing in the Content Areas	3
RDED 623	Diag. of Reading & Writing Disabilities: Practicum	3
RDED 624	Diag and Correction of Reading and Writing Diff	6
RDED 625	Psych & Social Factors in Reading & Writing Ability	3
RDED 626	Literacy Leadership	3

Literacy Course or Summer Institute

undefined - Choose 3 hours from:		
RDED 627	Sp Top:	
RDED 628	Sp Topics:	
RDED 629	Special Topics in Reading	
RDED 630	Sp Top:	
Any ADVAPPROVED course(s)		

If RDED 627, 628, 629 or 630 is not taken as your Literacy Course or Summer Institute, your advisor will need to email goffasst@millersville.edu with the approved course. In addition to the required credits above, students may choose to complete an optional thesis, RDED 699.

Total Hours 30

Reading Specialist Post-Baccalaureate Certification

Reading Specialist, Post-Bacc Certification

Code	Title	Hours
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REQUIRED CLEARANCES

ACT 114 - FBI Fingerprint Needed		
You must submit your FBI Fingerprint Clearance		
ACT 34 - Criminal Record Check Needed		
You must submit your Criminal Record Check		
ACT 151 - Child Abuse Clearance Needed		
You must submit your Child Abuse Clearance		
Negative TB Test or Chest X-ray Needed		
You must submit your Negative TB Test or Chest X-ray		

REQUIRED COURSES

EDUC 562	Methods for Teaching English Language Learners	3
Literature and Response - Choose 1 of the following:		
EDUC 636	Literature and Response	
EDUC 533	Nonfiction Lit and Literacy	
RDED 621	Foundations of Reading and Writing	3
RDED 622	Reading and Writing in the Content Areas	3
RDED 623	Diag. of Reading & Writing Disabilities: Practicum	3
RDED 624	Diag and Correction of Reading and Writing Diff	6
RDED 625	Psych & Social Factors in Reading & Writing Ability	3
RDED 626	Literacy Leadership	3

Literacy Course or Summer Institute

undefined - Choose 3 hours from:		
RDED 627	Sp Top:	
RDED 628	Sp Topics:	
RDED 629	Special Topics in Reading	
RDED 630	Sp Top:	
Any ADVAPPROVED course(s)		

If RDED 627, 628, 629 or 630 is not taken as your Literacy Course or Summer Institute, your advisor will need to email goffasst@millersville.edu with the approved course. In addition to the required credits above, students may choose to complete an optional thesis, RDED 699.

Total Hours 30

Stem Education Endorsement

The STEM program endorsement is intended to improve a teacher's skills in dealing with complex classroom settings. The STEM endorsement is designed to provide additional knowledge and promote skills related to more integrative ways to deliver content in these areas. While the endorsement does not lead to state licensure, it may be added to an existing Level I or Level II Certificate. Millersville's STEM endorsement courses can also be applied to the Assessment, Curriculum and Teaching Masters in Education Program with the addition of five more courses.

STEM education creates opportunities to integrate student-centered learning approaches to improve the quality of K-12 education and interaction with the larger community. This program incorporates active project-based learning, where you will develop and use skills in analysis, problem solving and critical thinking.

Program Highlights:

- 12-Credit, four-course Program
- Adds a STEM endorsement to an existing PA teaching license
- Can be completed 100% online
- All 12 credits count towards Millersville's M.Ed. program in Assessment, Curriculum and Teaching
- Affordable tuition rates
- Credits meet ACT 48 requirements
- Interdisciplinary faculty from three departments

Who This Program is for:

- Teachers who hold an initial teaching certification in any discipline K-12
(*This program will NOT lead to an initial teaching certification)
- Teachers in STEM subjects: science, technology, engineering and mathematics
- Teachers in non-STEM disciplines who are interested in embracing the ideas associated with STEM education

This program builds upon our existing high-quality science, technology, engineering and math education courses taught by Millersville University's faculty experts.

PDE Endorsement

Code	Title	Hours
ENDORSEMENT IN STEM EDUCATION - See separate block		
Total Hours		0

Concentration in STEM Education

Code	Title	Hours
INTEGRATIVE STEM EDUCATION ENDORSEMENT		
ACTE 651	Science Curriculum and Reform	3
Math in the School Program or Problem Solving Seminar - Choose 1 of the following:		3

EDUC 651	Math in the School Program	
MATH 610	Problem Solving Seminar	
Engineering Principles and Concepts OR Int. STEM Educ - Choose 1 of the following:		3
EDTE 604	Engineering Principles and Concepts for the Non-Engineer	
ACTE 655	Integrative STEM Education	
EDFN 530	Instructional Technology, Design and Assessment	3
Total Hours		12

Educational Foundations

The Programs

- Assessment, Curriculum & Teaching, M.Ed. - Integrative STEM Education (p. 420)
- Assessment, Curriculum and Teaching, M.Ed. - Certification (p. 420)
- Assessment, Curriculum and Teaching, M.Ed. - Inclusive Practices (p. 420)
- Assessment, Curriculum and Teaching, M.Ed. - Online Instruction (p. 420)
- Curriculum & Instruction Supervisory Certification (p. 421)
- Educational Leadership, Ed.D. (p. 421)
- Educational Leadership, Post-Master's Specialist Certificate (p. 422)
- Language and Literacy, M.Ed. (p. 422)
- Leadership for Teaching and Learning, M.Ed. (p. 422)
- Music Education Post-Baccalaureate Certification (p. 423)
- Principal Post-Master's Certification (p. 425)
- Special Education Supervisory Certification (p. 425)
- Technology Education Post-Baccalaureate Certification (p. 425)

Brooks, Sarah; Associate Professor

College of Education and Human Services
B.A., Gordon College, 2002; M.A., University of Connecticut, 2006; Ph.D., University of Virginia, 2010

Deemer, Sandra; Professor

College of Education and Human Services
B.A., Millersville University, 1992; M.A., University of Delaware, 1997; Ph.D., Ibid., 1999

Dietrich, Nanette; Professor

College of Education and Human Services
Ph.D., University of Delaware, 2005

Dreon, Oliver; Professor

College of Education and Human Services
B.S., University of Pittsburgh, 1991; M.A., Ibid., 1992; Ph.D., The Pennsylvania State University, 2008

Gaudino, Ann; Professor

College of Education and Human Services
B.S., University of Michigan, 1989; M.S., Ibid., 1990; Ed.D., University of Pittsburgh, 2008

Hanich, Laurie; Professor

College of Education and Human Services

B.A., Temple University, 1993; M.S., Indiana University of Pennsylvania, 1998; Ph.D., University of Delaware, 2001

Ibrahim, Abdulsalami; Assistant Professor
College of Education and Human Services
B.S.Ed., Usmanu Danfodiyo University (Nigeria), 2007; M.Ed., Ibid., 2012;
D.Ed., Indiana University of Pennsylvania, 2019

Licata, Ann Marie; Assistant Professor
College of Education and Human Services
B.S., Indiana University of Pennsylvania, 1986; M.S., St. Bonaventure University, 1991; Ph.D., Marywood University, 2006

Primus, Nakeiha; Associate Professor
College of Education and Human Services
B.A., Tufts University, 2005; M.A., Duke University, 2008; Ph.D., University of Delaware, 2014

Witmer, Miriam; Associate Professor
College of Education and Human Services
B.S., Millersville University, 1983; M.S., Ibid., 1992; Ph.D., Temple University, 2014

Wright, Tiffany; Professor
College of Education and Human Services
B.A., Gettysburg College, 1997; M.A., Millersville University, 2002; Ed.D., Johns Hopkins University, 2009

EDFN 511: 3 s.h.

Comparative Education

Analyze crucial educational questions and issues using the comparative method. Cross-cultural studies pursued in a multiple-disciplinary format will help participants discover how education serves economic, sociopolitical, ideological and other purposes, and how it reflects the historically derived tensions within national development. Factors underlying similarities and differences in various cultures, nations and contexts are studied. Includes appraisal of educational issues from a global perspective. Offered annually.

EDFN 513: 3 s.h.

Sexual Orientation, Gender Identity and Schooling

Students will study the history of sexual orientation and gender identity, the research on school climate related to sexual orientation and gender identity of students and professionals, knowledge of current laws and policies, and recommended practices for supporting LGBTQ+ youth and educators.

EDFN 520: 3 s.h.

Instructional Technology in Elem Ed

Students use case studies to explore the uses of technology and its application in elementary education. Topics include computer basics, applications software, curriculum integration, evaluation of educational software, telecommunication and multimedia presentation systems. Students are provided a series of hands-on experiences with hardware and software to develop the skills and competencies required of the elementary education teacher. Offered regularly. Students may not receive credit for both EDFN 520 and any of the following courses: EDFN 130, 320, 330, 333, 530, 533 and EDAR 330.

EDFN 530: 3 s.h.

Instructional Technology, Design and Assessment

Instructional design and assessment will be used as a basis for planning and evaluating the use of technology for student-center teaching and learning within specific disciplines. Must be taken as a block with EDSE 321 (or graduate equivalent) and the Teaching of Methods class required in each secondary certification program. Students may not receive credit for both EDFN 530 and any of the following courses: EDFN 130, 320, 330, 333, 520, 533 and EDAR 330.

EDFN 545: 3 s.h.

Advanced Educational Psychology

A review of psychological principles as they relate to human learning in the urban and non-urban setting. Special consideration is given to motivational and developmental factors in the school that influence students' learning. Additional topics include examination of assessment and evaluation practices, classroom management and accommodating individual differences.

EDFN 586: 1-3 s.h.

Topics in Education

Investigation and development of educational topics of current interest not normally covered in regular courses. Special topics and methods will vary according to the needs of students involved. Offered periodically.

EDFN 587: 1-3 s.h.

Topics in Education

Investigation and development of educational topics of current interest not normally covered in regular courses. Special topics and methods will vary according to the needs of students involved. Offered periodically.

EDFN 589: 3 s.h.

Topics in Education

Investigation and development of educational topics of current interest not normally covered in regular courses. Special topics and methods will vary according to the needs of students involved. Offered periodically.

EDFN 590: 3 s.h.

Social Foundation of Educ

An analysis of the K-12 school system of the U.S. philosophical and historical influences, significance of education in society, contemporary problems in schooling, challenges and requirements of the profession. Offered annually.

EDFN 601: 3 s.h.

Research Methods

Introduces methods of empirical educational research. Emphasis on training individuals to be intelligent consumers of educational research. It is strongly recommended that the course be taken early in the student's program.

EDFN 603: 3 s.h.

Philosophy of Education

An analysis of current and perennial education problems using the tools of the philosopher: logic, language analysis and inquiry, and phenomenological description. Students articulate their own beliefs and assumptions about education as well as critically examine and evaluate selected texts. Offered annually.

EDFN 604: 3 s.h.**Education and Public Policy**

An analysis of public policy development in the field of education. Major questions to explore include: (1) Who governs education? (2) What are the processes by which policies are formulated? (3) What values are reflected in specific present policy or proposed reform? (4) What do we know about reforming education? (5) How useful is social science research in the formulation of educational policy? Offered annually.

Assessment, Curriculum & Teaching, M.Ed. - Integrative STEM Education

The Master of Education in Assessment, Curriculum and Teaching (ACTE) is designed for current teachers who are seeking to advance their professional effectiveness. The program builds five outcomes related to assessment, curriculum and teaching in emerging fields and offers two concentrations: one in Online Teaching, one in STEM Education, and one in Certification. All candidates entering the program must meet all Millersville University graduate entrance requirements. Additionally, all candidates must have Instructional I certification and pass both a written essay and oral interview.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
EDFN 545	Advanced Educational Psychology	3
EDFN 604	Education and Public Policy	3
Total Hours		9

Major in Assessment, Curriculum and Teaching - MED

Code	Title	Hours
ACTE CORE COURSES		
ACTE 630	Current Technology for Online Instruction	3
ACTE 625	Technology and Assessment for Learning	3
CONCENTRATION IN STEM EDUCATION - See separate block		
THESIS/CAPSTONE EXPERIENCE		6
ACTE 699	Inquiry for Teaching/Learning	3
Total Hours		12

Concentration in STEM Education

Code	Title	Hours
INTEGRATIVE STEM EDUCATION CONCENTRATION		
ACTE 651	Science Curriculum and Reform	3
Mathematics in the School Program or Problem Solving Seminar - Choose 1 of the following:		3
EDUC 651	Math in the School Program	3
MATH 610	Problem Solving Seminar	3
EDTE 604	Engineering Principles and Concepts for the Non-Engineer	3
ACTE 655	Integrative STEM Education	3
Total Hours		12

Assessment, Curriculum and Teaching, M.Ed. - Certification

The Master of Education in Assessment, Curriculum and Teaching (ACTE) is designed for current teachers who are seeking to advance their professional effectiveness. The program builds five outcomes related to assessment, curriculum and teaching in emerging fields and offers four concentrations: one in Online Teaching, one in STEM Education, one in Inclusive Practices and one in Certification. All candidates entering the program must meet all Millersville University graduate entrance requirements. Additionally, all candidates must have Instructional I certification and pass both a written essay and oral interview.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
EDFN 545	Advanced Educational Psychology	3
EDFN 590	Social Foundation of Educ	3
Total Hours		9

Major in Assessment, Curriculum and Teaching - MED

Code	Title	Hours
ACTE CORE COURSES		
ACTE 630	Current Technology for Online Instruction	3
ACTE 625	Technology and Assessment for Learning	3
Total Hours		6

Assessment, Curriculum and Teaching, M.Ed. - Inclusive Practices

Overview for ACTE, Inclusive Practices needed.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
EDFN 545	Advanced Educational Psychology	3
EDFN 604	Education and Public Policy	3
Total Hours		9

Major in Assessment, Curriculum and Teaching - MED

Code	Title	Hours
ACTE CORE COURSES		
ACTE 630	Current Technology for Online Instruction	3
ACTE 625	Technology and Assessment for Learning	3
Total Hours		6

Assessment, Curriculum and Teaching, M.Ed. - Online Instruction

The Master of Education in Assessment, Curriculum and Teaching (ACTE) is designed for current teachers who are seeking to advance their professional effectiveness. The program builds five outcomes related to assessment, curriculum and teaching in emerging fields and offers

three concentrations: one in Online Teaching, one in STEM Education, and one in Certification. All candidates entering the program must meet all Millersville University graduate entrance requirements. Additionally, all candidates must have Instructional I certification and pass both a written essay and oral interview.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
EDFN 545	Advanced Educational Psychology	3
EDFN 604	Education and Public Policy	3
Total Hours		9

Major in Assessment, Curriculum and Teaching - MED

Code	Title	Hours
ACTE CORE COURSES		
ACTE 630	Current Technology for Online Instruction	6
ACTE 625	Technology and Assessment for Learning	
CONCENTRATION IN ONLINE TEACHING - See separate block		
THESIS/CAPSTONE EXPERIENCE		
ACTE 699	Inquiry for Teaching/Learning	6
Total Hours		12

Concentration in Online Teaching

Code	Title	Hours
ONLINE TEACHING CONCENTRATION		
ACTE 632	Online Learning Environments	3
ACTE 633	Learners in Online Classrooms	3
ACTE 634	Legal and Ethical Issues in Online Education	3
Instructional and Curricular Design for Online, Blended and Customized Instruction - Choose 3 hours from:		
ACTE 635	Instructional and Curricular Design for Online, Blended and Customized Instruction	3
Total Hours		12

Curriculum & Instruction Supervisory Certification

The program consists of 15 credits, including three core courses and a six-credit field experience. In exceptional cases, an approved substitution may be made for one of the core courses.

The field experience demands a high degree of cooperation between the University and the school where the student is employed or assigned. The student is supervised by a faculty member from the department/area in which the certificate is sought. It is important that the candidate give due consideration to this aspect of the program, since in some cases it may be necessary for the student to take a sabbatical or leave of absence in order to meet the requirement of the field experience.

Except for secondary education and music, which do not have master's degree programs, consult the appropriate department section in this catalog for description of field experience.

Field experiences vary, but generic competencies apply to all program areas. These include:

1. Knowledge of recent research and application of basic research tools and techniques to problems encountered in supervisory positions.
2. The ability to work with paraprofessionals, teachers, student teachers and the auxiliary staff.
3. Skill in curriculum planning and evaluation.
4. Ability to coordinate supporting services to the major curriculum components, such as speech therapy, dental hygienist, and home and school visitors.
5. Ability to review and assess various curriculum needs and recommended changes as deemed necessary.

SUPERVISORY CERTIFICATION COURSE OF STUDY

- EDSU 700 Functions Supervision
- EDSU 701 Administrative Supervision
- EDSU 703 Curriculum and Supervision
- EDSU 799 Applied Practicum*

*Applied supervision in the applicable content subject area

Educational Leadership, Ed.D.

The Doctorate in Educational Leadership (Ed.D.) is designed to provide rising school, state, and organizational leaders with the knowledge, skills and dispositions to develop, implement, and lead educational programming in a variety of settings. The program has two focal areas, poverty and technology, which are embedded throughout the program. Superintendent Letter of Eligibility (LOE) courses are designed to provide those with principal certification the opportunity to pursue superintendent coursework. Coursework is delivered in a variety of modalities including face-to-face, hybrid, online and integration of other cyber applications.

Admission Requirements

- Graduate application and application fee.
- Transcripts from all previous colleges and universities, including any additional certification program(s).
- Master's degree in education or a related field is required.
- Certifications.
- Current resume or curriculum vitae.
- 500 word goal statement addressing the applicant's goals and objectives for doctoral study in educational leadership and how this program will assist them in achieving those outcomes.

Ed.D. Program Examinations Candidacy Exam

The purpose of the candidacy examination is for the doctoral student to demonstrate their growth during the first segment of the program which suggests that they are ready to pursue dissertation writing and research. The exam will take place in two parts. The first part is written and allows the student to examine and write about research-based articles as well as their own research interests. The second part is their oral defense of their writing. When doctoral students pass the candidacy exam, they are then referred to as doctoral candidates.

Dissertation Prospectus defense

The purpose of the prospectus defense is for students to demonstrate their writing and ability to present and converse in the introduction, literature review and methodology to be employed in their dissertation.

Students will participate in this defense with their faculty dissertation committee members.

DISSERTATION defense

The purpose of the dissertation defense is for doctoral candidates to demonstrate their writing and ability to present and converse about their entire dissertation project. It takes place after the entire dissertation research and writing are complete. Doctoral candidates will participate in this defense with their faculty dissertation committee members and may open their defense for public attendance.

Educational Leadership, Post-Master's Specialist Certificate

This online Specialist Certificate in Educational Leadership/ Superintendent Letter of Eligibility (LOE) program will be of interest to both school leaders in Pennsylvania and elsewhere wishing to obtain superintendent licensure as well as those seeking a Millersville specialist certificate in educational leadership. All students completing the coursework satisfactorily will be awarded the MU Specialist Certificate in Educational Leadership. For those who are school leaders, this coursework includes necessary curriculum and 360 internship hours to qualify for the LOE in PA as well as prepare to take the School Superintendent Assessment Exam required for the LOE in PA. Each course will prepare the student to take the corresponding section of the School Superintendent Assessment exam without need for additional test prep courses.

See 2024-25 Catalog for approved curriculum.

Language and Literacy, M.Ed.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
Psychological Core Requirement - Choose 1 of the following:		3
EDFN 545	Advanced Educational Psychology	
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
PSYC 625	Human Growth and Development	
Philosophical Core Requirement - Choose 1 of the following:		3
EDFN 511	Comparative Education	
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Total Hours		9

Major in Language & Literacy - Reading Specialist

Code	Title	Hours
REQUIRED COURSES		
EDUC 562	Methods for Teaching English Language Learners	27
EDUC 636	Literature and Response	

RDED 621	Foundations of Reading and Writing	
RDED 622	Reading and Writing in the Content Areas	
RDED 623	Diag. of Reading & Writing Disabilities: Practicum	
RDED 624	Diag and Correction of Reading and Writing Diff	
RDED 625	Psych & Social Factors in Reading & Writing Ability	
RDED 626	Literacy Leadership	
Literacy Course or Summer Institute - Choose 3 hours from:		3
RDED 627	Sp Top:	
RDED 628	Sp Topics:	
RDED 629	Special Topics in Reading	
RDED 630	Sp Top:	
Any ADVAPPROVED course(s)		
If RDED 627, 628, 629 or 630 is not taken as your Literacy Course or Summer Institute, your advisor will need to email goffasst@millersville.edu with the approved course. In addition to the required credits above, students may choose to complete an optional thesis, RDED 699.		

Total Hours **30**

Leadership for Teaching and Learning, M.Ed.

The Master of Education degree in leadership for teaching and learning prepares teachers for roles in basic education as principals, department heads, curriculum directors, supervisors and other leadership positions. The program philosophy is rooted in the literature demonstrating the effectiveness of leaders who facilitate responsible, responsive change through cooperative action. The program utilizes the strengths of cohort groups of students, portfolio assessment, an internship, mentors, technology and case studies. Community relations; respect of the influences of race, class, gender and ethnicity in education; and the liberal arts as a source of knowledge and perspective are acknowledged in the program curriculum.

The Master's degree program includes 36 semester hours of coursework. Candidates who complete the curriculum and degree requirements, and have five years of teaching experience, are eligible to be recommended for the K-12 Principal's Certificate and also for the K-12 Curriculum and Instruction Supervisory Certificate. Those who already hold an appropriate master's degree may apply to pursue only the certificates; a review of their previous coursework will determine what requirements must be satisfied to be eligible for the certificates.

Admissions Requirements

Students who seek admission to the Master of Education degree in leadership for teaching and learning must comply with the University's established admissions criteria and procedures. Admission to the degree program will be on a cohort basis. Twenty students will be admitted to each cohort group, with a new cohort commencing each fall semester. Courses completed prior to the beginning of a cohort may be considered for inclusion in the program.

The following criteria will be used in determining admission to a cohort:

1. Letters of recommendation
2. Official transcripts
3. Academic and Professional Goals Statement

4. Critical thinking exam: Graduate Record Exam or Miller Analogies Test recommended
5. Commonwealth of Pennsylvania Teacher's Certificate, Instructional I. Applicants without Instructional I Certificates must meet with the Graduate Program Coordinator for review and possible acceptance.
6. Structured interview

Assessment

In addition to the normal course requirements and assessment instruments, a portfolio will be utilized as a form of formative and summative assessment. Completion of the program is contingent upon passing the portfolio review and maintaining a 3.0 GPA. Students who fail to maintain the academic scholarship and/or professional standards are subject to dismissal from the program.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
EDFN 545	Advanced Educational Psychology	3
Philosophy of Education - Choose 1 of the following:		3
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Total Hours		9

Major in Leadership for Teaching - MED

Code	Title	Hours
EDUCATION LEADERSHIP CORE		
Leadership Theory Organizational Behavior		3
EDLD 610	Theory and Organizational Behav	
EDLD 614	School Community Relations	3
School Law, Public Policy and the Principal		3
EDLD 620	School Law and Public Policy	
EDLD 667	Leadership Seminar 1	3
& EDLD 668	and Leadership Seminar 2	
& EDLD 669	and Leadership Seminar 3	
EDSU 700	Functions Supervision	3
Introduction to Supervision		3
EDSU 701	Administrative Supervision	
EDSU 703	Curriculum and Supervision	3
EDLD 798	Applied Supervision	3
EDLD 799	Applied Practicum	3
Portfolio Review		
Upon completion of all required courses, students are eligible to schedule the portfolio review. The portfolio is utilized as a form of formative and summative assessment. Completion of the degree requires successful completion of the portfolio review.		
Total Hours		27

Music Education Post-Baccalaureate Certification

The Music unit offers a professional baccalaureate degree – the Bachelor of Science in Education, Music Education – which leads to licensure in Pennsylvania for teaching K-12 instrumental and vocal music.

This degree program offers one of the nation's most comprehensive and integrated Music Education programs of study. With the field of music education changing so rapidly, our world-class faculty, creative environment, future-forward curriculum, and state-of-the-art facilities allow for a truly unique education. Students are given the opportunity to gain real-world experience through professional venues, field experiences, and internship opportunities, including Music for Everyone and Lancaster International Piano Festival. With two Visual & Performing Arts Centers, three performance halls, a professional recording studio, and a one-of-a-kind Yamaha Digital Piano Lab that hosts the latest music technology software, including ProTools and Logic, the options are truly endless. #Graduates receive a Bachelor of Science in Music Education.

Students in the Music Education program are expected to complete a range of courses, including musical analysis, class piano, music history, conducting, and a range of strings, voice, woodwinds, percussion, and brass music classes. These project-based classes blend standard learning with hands-on experiences in and out of the classroom and focus on commercial music and arts administration studies. Students are given the opportunity to pass out of classes coinciding with their vocal/instrumental major, decreasing the required number of program credits. In addition, individuals are also expected to complete seven semesters of ensembles of their choice.

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		
COURSE REQUIREMENTS FOR APS		
FOUNDATIONS COURSES - Choose 1 of the following options 1-2:		6
Option 1. Foundations Graduate Level		
EDFN 590	Social Foundation of Educ	
EDFN 545	Advanced Educational Psychology	
Option 2. Foundations Undergraduate Level		
EDFN 211	Foundations Modern Education	
EDFN 241	Psychological Foundations of Teaching	

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)

3.0 Minimum Cert GPA

undefined - See separate block

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

Application for APS status

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours 6

Major in Music Education, Post-Bacc Certification

Code	Title	Hours
BASIC MUSICIANSHIP		
MUSI 112	Kodaly Solfege, Harmony and Analysis 1	3
MUSI 131	Class Piano 1	2
MUSI 212	Kodaly Solfege, Harmony and Analysis 2	3
MUSI 231	Class Piano 2	2
MUSI 312	Kodaly Solfege, Harmony and Analysis 3	3
MUSI 331	Class Piano 3	2
MUSI 362	Music History and Literature 1	3
MUSI 363	Music History/Literature 2	3
MUSI 381	Conducting 1	2
MUSI 412	Kodaly Solfege, Harmony and Analysis 4	3
MUSI 481	Conducting 2	2
MUSIC EDUCATION COURSES		
Class Voice I		1
MUSI 141	Vocal Techniques	
MUSI 151	Strings Techniques	1
MUSI 152	Woodwind Techniques	1
MUSI 153	Percussion Techniques	1
MUSI 156	Brass Techniques	1
MUSI 350	The Art of Teaching Modern Band	3
MUSI 280	Technology in the Music Classroom	3
MUSI 317	The Art of Teaching Elementary Music Kodaly	3
MUSI 347	The Art of Teaching Choral Techniques	3
The Art of Teaching Middle Level Music Kodaly		3
MUSI 372	The Art of Teaching Secondary Methods	
MUSI 373	The Art of Teaching Instrumental Music Techniques	3
MAJOR PERFORMANCE		
Music Education Major Performance - Choose 7 hours from:		7
MUSI 154	Major Performance 1:	
MUSI 155	Major Performance 2:	
MUSI 254	Major Performance 3:	
MUSI 255	Major Performance 4:	
MUSI 354	Major Performance 5:	
MUSI 355	Major Performance 6:	
MUSI 454	Major Performance 7:	
MUSI 455	Major Performance 8:	
APPLIED MUSICIANSHIP		
Applied Musicianship, Band/Orchestra/Choir		0

MUSIC ELECTIVES

MUSI 251, 294, 369 Recommended Electives	0
MUSI 140, 202, 207, 263, 303, 313, 371, 388, 398 Electives	0
Total Hours	58

Req Related for Music, Post-Bacc Certification

Code	Title	Hours
PHYS 205	Musical Acoustics	3
Total Hours		3

Professional Education - Certification

Code	Title	Hours
FOUNDATIONS BLOC		
We recommend 590 and 545 for Post-Bacc students. These courses each require 35 hours field placement at an urban school. Offered in the evenings Fall and Spring. Also offered in Summer Session. If enrolling in EDFN 211/241, please register for both courses in the same block.		
Foundations of Modern Education - Choose 1 of the following:		3
EDFN 590	Social Foundation of Educ	
EDFN 211	Foundations Modern Education	
Psychological Foundations of Teaching - Choose 1 of the following:		3
EDFN 545	Advanced Educational Psychology	
EDFN 241	Psychological Foundations of Teaching	
APS - PROFESSIONAL BLOC		
Students must meet APS eligibility requirements prior to registering. Course Appropriate PRAXIS II Exam should be taken after Professional Bloc, but prior to Student Teaching.		
Content Area Literacy for Diverse Classrooms - Choose 1 of the following:		3
EDSE 340	Content Area Literacy for Diverse Classrooms	
EDSE 540	Cntnt Area Litrcy Divers Class	
Secondary Students w/Disabilities in Inclusive Settings - Choose 1 of the following:		3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	
SPED 546	Sec Stdnts w Disab Inclu Sttgs	
Intro to Music Education		3
MUSI 171		
Elementary Methods I		3
MUSI 317	The Art of Teaching Elementary Music Kodaly	
Middle/Secondary Methods		3
MUSI 372	The Art of Teaching Secondary Methods	
Instrumental Methods		3
MUSI 373	The Art of Teaching Instrumental Music Techniques	
Technology in the Music Profession		3
MUSI 280	Technology in the Music Classroom	
STUDENT TEACHING SEMINAR		
File your Intent to Student Teach Card one year prior to the beginning of the semester in which you wish to Student Teach. Click here to access the Student Teaching Website		
EDSE 471	Student Teaching Seminar	3
STUDENT TEACHING SEMESTER		

Students must meet APS eligibility requirements prior to registering. Submit your Teacher Certification Packet 90 days prior to completion of your certification program. Click here to access the packet on the Certification Website.

Student Teaching - Choose 9 hours from:	9
EDMU 461 Musi Stu Teaching	
EDMU 462 Musi Stu Teaching	
Total Hours	39

Principal Post-Master's Certification

Progress through a unique course of study catered to your previous education and experiences in pursuit of a Principalship certification based on Pennsylvania Department of Education standards.

Major in Principal Certification - Post-Master's

Code	Title	Hours
EDUCATION LEADERSHIP CORE		
Leadership Theory Organizational Behavior		3
EDLD 610	Theory and Organizational Behav	
EDLD 614	School Community Relations	3
EDLD 620	School Law and Public Policy	3
EDLD 667	Leadership Seminar 1	3
& EDLD 668	and Leadership Seminar 2	
& EDLD 669	and Leadership Seminar 3	
EDSU 700	Functions Supervision	3
Introduction to Supervision		3
EDSU 701	Administrative Supervision	
EDSU 703	Curriculum and Supervision	3
EDLD 798	Applied Supervision	3
EDLD 799	Applied Practicum	3
Portfolio Review		
Upon completion of all required courses, students are eligible to schedule the portfolio review. The portfolio is utilized as a form of formative and summative assessment. Completion of the degree requires successful completion of the portfolio review.		
Total Hours		27

Special Education Supervisory Certification

Post-Master's PDE Certification

Code	Title	Hours
Certification programs not currently available in degree audit		
YOUR CERTIFICATION PROGRAM IS NOT CURRENTLY PROGRAMMED FOR AUDIT. YOU MAY CLICK ON 'CLASS HISTORY' TO SEE A LISTING OF YOUR COURSES BY TERM OR YOU MAY VIEW COURSES IN 'OTHER ELECTIVES' BELOW. PLEASE WORK WITH YOUR ADVISOR TO ENSURE YOU ARE TAKING COURSES APPROVED FOR YOUR CERTIFICATION PROGRAM.		
Total Hours		0

Technology Education Post-Baccalaureate Certification

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		

COURSE REQUIREMENTS FOR APS		
FOUNDATIONS COURSES - Choose 1 of the following options 1-2: 6		
Option 1. Foundations Graduate Level		
EDFN 590	Social Foundation of Educ	
EDFN 545	Advanced Educational Psychology	
Option 2. Foundations Undergraduate Level		
EDFN 211	Foundations Modern Education	
EDFN 241	Psychological Foundations of Teaching	

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)

3.0 Minimum Cert GPA

undefined - See separate block

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

Application for APS status

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours	6
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Technology Education - Post-Bacc Certification

Code	Title	Hours
TECHNOLOGY LITERACY CORE		
AENG 110	Communication and Information Systems	3
AENG 120	Energy Systems	3
AENG 130	Production Materials & Processes	3
AENG 140	Bio-related Technologies	3
TECHNICAL CORE		
AENG 322	Transportation	3
AENG 241	Drafting Communications	3
Print Media Systems or Web Publishing Interactive Media - Choose 1 of the following:		3
AENG 251	Print Media Systems	
AENG 252	Web Publishing Systems	
AENG 261	Electronic Systems	3

Processing Nonmetallic or Metallic Materials - Choose 1 of the following:	3
AENG 271 Processing Nonmetallic Materials	
AENG 281 Processing Metallic Materials	
AENG 327 Engineering Structures	3
AENG 344 Product Design	3
AENG 346 Architectural Drawing	3
AENG 435 Manufacturing Enterprise	3

TECHNOLOGY ELECTIVE

Laboratory Electives - Choose 3 of the following:	9-10
AENG 243 Technical Sketching, Design & Rendering	
AENG 251 Print Media Systems	
AENG 252 Web Publishing Systems	
AENG 262 Semiconductor Electronics	
AENG 271 Processing Nonmetallic Materials	
AENG 281 Processing Metallic Materials	
AENG 325 Power Conversion and Control	
AENG 326 Fluid Power	
AENG 331 Construction Technology 1	
AENG 332 Construction Technology 2	
AENG 342 Computer-Aided Engineering Drawing	
AENG 345 Statics/Strength of Materials	
AENG 351 Digital Imaging	
AENG 355 Contemporary Printing	
AENG 356 Desktop Publishing	
AENG 357 Packaging Specialty Printing	
AENG 364 Digital Electronics	
AENG 375 Polymer and Ceramic Technology	
AENG 376 Woodworking Technology	
AENG 382 Automated Manufacturing	
AENG 425 Industrial Robotic Systems	
AENG 427 Programmable Logic Controllers	
AENG 448 Machine Tool Design	
AENG 455 R&D in Graphic Communications and Packaging	
AENG 467 Mobile Robotics	
AENG 485 Adv Manufacturing Systems	
AENG 498 Independent Study	
AENG 515 Adv Prob:	
AENG 525 Adv Prob:	
AENG 535 Adv Prob:	

REQUIRED EDTE COURSES - count in major GPA

EDTE 291 Foundations of Technology & Engineering Ed	3
EDTE 391 Curr & Inst in Tech & Eng Ed	3
EDTE 491 Seminar in Techn & Engring Ed	1
EDTE 496 Innovatn/Design Methodologies	2

Total Hours 57-58**Req Related for Technology Education**

Code	Title	Hours
ENGL 110	English Composition	3
General Education (G2) Math course		
Choose one MATH course with attribute G2		

Science Elective - Choose 1 of the following:	3-4
BIOL 100 General Biology	
CHEM 103 Gen Organic and Biochemistry 1	
PHYS 103 Elements of Physics	
PHYS 104 Applied Physics	

Total Hours 6-7**Professional Education - Certification**

Code	Title	Hours
FOUNDATIONS BLOC		
We recommend 590 and 545 for Post-Bacc students. These courses each require 35 hours field placement at an urban school. Offered in the evenings Fall and Spring. Also offered in Summer Session. If enrolling in EDFN 211/241, please register for both courses in the same block.		
Foundations of Modern Education - Choose 1 of the following:		3
EDFN 590	Social Foundation of Educ	
EDFN 211	Foundations Modern Education	
Psychological Foundations of Teaching - Choose 1 of the following:		3
EDFN 545	Advanced Educational Psychology	
EDFN 241	Psychological Foundations of Teaching	

APS - PROFESSIONAL BLOC

Students must meet APS eligibility requirements prior to registering. Course Appropriate PRAXIS II Exam should be taken after Professional Bloc, but prior to Student Teaching.

Content Area Literacy for Diverse Classrooms - Choose 1 of the following:

EDSE 340	Content Area Literacy for Diverse Classrooms	
EDSE 540	Cntnt Area Litrcy Divers Class	

Secondary Students w/Disabilities in Inclusive Settings - Choose 1 of the following:

SPED 346	Secondary Students w/Disabilities in Inclusive Settings	
SPED 546	Sec Stdnts w Disab Inclu Sttgs	

Foundations of Technology Education 3

EDTE 291	Foundations of Technology & Engineering Ed	
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Curriculum/Instruction in Technology Education 3

EDTE 391	Curr & Inst in Tech & Eng Ed	
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Innovation and Design Methods - Choose 1 of the following: 2-6

EDTE 496	Innovatn/Design Methodologies	
EDTE 698	Research and Development Technical Project	

STUDENT TEACHING SEMINAR

File your Intent to Student Teach Card one year prior to the beginning of the semester in which you wish to Student Teach. Click here to access the Student Teaching Website

EDSE 471	Student Teaching Seminar	3
Seminar in Technology Education		1
EDTE 491	Seminar in Techn & Engring Ed	

STUDENT TEACHING SEMESTER

Students must meet APS eligibility requirements prior to registering. Submit your Teacher Certification Packet 90 days prior to completion of your certification program. Click here to access the packet on the Certification Website.

Student Teaching - Choose 9 hours from: 9

EDTE 461	Edte Stu Teaching
EDTE 462	EDTE Stu Teaching
Total Hours	33-37

Psychology

The Programs

The Department of Psychology offers:

- Behavioral Health and Counseling Graduate Certificate (p. 432)
- Psychology/Clinical Psychology, M.S (p. 432)
- Psychology/School Psychology, M.S. (p. 433)
- School Counseling, M.Ed. (p. 433)
- School Counseling, Post-Masters Certification (p. 434)
- School Psychology, Ed.S. (p. 434)

The Department of Psychology offers seven programs of graduate study:

1. Master of Science degree in Psychology, School Psychology (30 s.h.)
2. Educational Specialist in School Psychology (64 s.h.)
3. Supervisory certification in School Psychological Services (15 s.h. plus five years' experience as a certified school psychologist)
4. Master of Education degree with specialization in school counseling (39 s.h. plus 12 s.h. certification)
5. Certification in preK-12 school counseling (48 s.h.)
6. Supervisory certification in guidance services (15 s.h. plus five years' experience as a certified school counselor)
7. Behavioral Health and Counseling Graduate Certificate (18 s.h.)

Information specific to school psychology students is contained in the *School Psychology Handbook*, available from their advisor.

Departmental Philosophy

The programs offered by the Department of Psychology are based on an underlying philosophy that graduate training in psychology and counseling should contain four essential components: academic training in relevant theory and knowledge; research skills and an ability to evaluate research critically; practical experience that can be directly useful in subsequent professional employment; and a high degree of self-awareness and interpersonal relationship skills.

The graduate programs in psychology and school counseling are designed primarily to train practicing psychologists and school counselors. We are committed to the development of individuals who can knowledgeably and effectively practice their profession in the community and in the school. The focus of the Master of Science program is to train service providers in psychology and professional counseling who will work in mental-health or educational settings. The Master of Education program is focused on preparation of professional counselors as applied to school counseling. The objective of the school psychology education specialist program is to train service providers who apply psychology to school settings. The school counseling certification program offers certification in elementary and/or secondary school counseling. The supervisory certification in school psychological services is for individuals who wish to oversee school psychology programs or school psychologists. The supervisory certification in school guidance services is for individuals who wish to oversee school counseling programs.

These programs are competency-based programs. It is assumed that acquisition of knowledge and skill development should proceed

sequentially. The development of skills requires a series of practical experiences in both coursework and field experiences. Consequently, the programs emphasize the practicum/internship experiences of students in conjunction with the development of professional growth.

Admission Requirements

Applicants to the Master of Science degree programs in clinical or school psychology or the certification in school psychology program are required to have a minimum of 18 undergraduate semester hours in psychology.

Applicants to the Master of Education degree program or the school counseling certification program are required to have a minimum of six semester hours in undergraduate or graduate education courses, and six semester hours in undergraduate or graduate general and developmental psychology. Refer to the *Master of Education and Certification in School Counseling* section for further details on these prerequisites.

In addition to an official transcript, three letters of recommendation, an autobiographical sketch indicating how the student's desire for advanced training in psychology/counseling developed, a group interview with the program staff and a writing sample form the basis for admission. Graduate Record Examination scores are required for applicants with lower than a 3.0 undergraduate cumulative grade-point average (148 minimum score on verbal, 147 minimum score on the quantitative components and 3.5 minimum score on analytical writing component). For all other applicants, submission of GRE scores is optional.

Students seeking admission to the certification in school psychology program, having completed graduate coursework or received a master's degree from another institution, and students interested in certification in the supervision of school psychological services may obtain details regarding admission procedures by contacting the graduate coordinator of school psychology: 717-871-4420. Students seeking admission to the school counseling certification program after receiving a master's degree from another institution, and students interested in supervision of school guidance services should obtain information from the graduate coordinator of school counseling: 717-871-7267.

Evaluation of Students

The Department of Psychology has the responsibility of evaluating its students to ensure that they will have the skills and competencies necessary for professional positions. To assure a sufficient level of competency, several methods of evaluation are employed.

Grades

In most courses, grades are determined by the student's ability to demonstrate to the instructor's satisfaction that the subject has been mastered. In skills courses, grades are based on mastery of academic content and also on the instructor's evaluation of the student's demonstration of appropriate clinical and interpersonal skills and dispositions. A grade of A indicates outstanding performance, a grade of B indicates good performance, and a grade of C indicates clearly unsatisfactory performance. Plus/minus grades are given at the instructor's discretion.

Grades of C+, C and C-

If a student receives a grade of C+ or below, that student is automatically placed on departmental probation, and the student's overall performance is reviewed by the graduate faculty. A student receiving a grade of C+ or below should first have a conference with the instructor who gave the grade. The purpose of this conference is to reach an understanding of the reasons behind the grade. Additionally, the student is required to write a

letter to the graduate program coordinator of his/her program indicating (a) the student's perception of the problem(s) that led to his/her poor grade, and (b) what he/she intends to do to correct those problems and prevent recurrence.

Typically, students are expected to repeat the course in which they received their first C+ grade or below in order to remove the original grade and obtain a grade of B- or better.

If the student receives a second C+ or below, the student is subject to dismissal from the psychology and counseling programs, pending review by the graduate faculty.

Grades of Incomplete

A grade of "Incomplete" will be given only to provide the student with the opportunity to complete unfinished work without attending class. Students will be informed in advance, if at all possible, about the pending grade of "Incomplete." A mutually acceptable, written agreement between the instructor and the student receiving the grade must be created to specify the deadline to complete the requirements, content of the requirements and default grade in the event that requirements are not met by deadline.

Grades of F

A grade of F will be given to any student found guilty of plagiarism or other academic dishonesty. Students who receive an F in any course in the program may be dismissed from the psychology and counseling programs, pending review by the graduate committee.

Core Competency Examination for Psychology

Students in the school psychology and clinical psychology programs will be required to pass the Core Competency Examination (CCE). Students who have completed graduate coursework at another institution must take the CCE for core courses completed at Millersville University; however, for core courses that were accepted for transfer credit at program admission, the corresponding CCE need not be taken. Passing the exam is required prior to registering for any assessment or selected advanced therapy courses and is a necessary component of advancement to degree candidacy.

1.
 - a. Each student must take the relevant CCE at the end of the semester following the successful completion of each appropriate core course (i.e., January, May and August). Students should contact the psychology office for specific dates and times. The core courses for Clinical Psychology are PSYC 530 Child Development within the Family System; PSYC 612 Research Design & Statistical Analysis; and PSYC 635 Psychopathology. For School Psychology, the core courses are PSYC 530 Child Development within the Family System; PSYC 612 Research Design & Statistical Analysis; and PSYC 600 Professional Seminar.
 - b. If a student fails one or more sections of the CCE, they must retake the failed section(s). Normally, this occurs at the end of the following semester; however, students can petition, in consultation with their advisor and the appropriate graduate coordinator, to delay retesting if remedial work is deemed necessary or advisable.
2. If all components of the Core Competency Examination are not passed the second time, the graduate committee will decide on the disposition of the student's case. Students should be aware that one option is dismissal from the program. A third and final attempt

may be allowed but only after an appropriate remedial plan has been developed and fully executed. This may involve retaking of the relevant core course.

3. Students are limited to no more than 27 completed credits without passing all of the CCEs. Furthermore, certain courses require successful completion of the CCEs. Students who do not pass the CCEs are expected to drop themselves from these courses, even if they are already enrolled.

Clinical Competence Review Process

Students who are judged to lack clinical skills, counseling skills, professional competence or professional dispositions are subject to dismissal from the psychology and counseling programs. All faculty teaching graduate courses are qualified and ethically bound to evaluate all the above-mentioned skills and competencies. If there are any concerns, the program faculty may operate on a decision-making continuum, consistent with standards of practice in the profession, which could include a meeting with the student and appropriate parties to share feedback about clinical and dispositional concerns, the development of a specific remediation plan, temporary suspension from coursework, or unilateral dismissal from the graduate program after review and vote by the graduate committee.

Ethical Principles of Psychologists and School Counselors

Students whose behavior in any way indicates a breach of the standards specified by the American Psychological Association, the Pennsylvania Psychological Association, the Pennsylvania State Licensure Board, the National Association of School Psychologists, the American Counseling Association or the American School Counselor Association are subject to dismissal from their program.

Grievance Procedure

Students should be aware that there is a student grievance procedure. A grievance should be submitted in writing to the graduate committee in care of the current graduate program coordinator. The graduate committee in conjunction with the grievance committee will attempt to resolve the complaint. If this process does not resolve the complaint, the matter should be handled as specified in the *Policies Governing Graduate Courses: Academic Appeals* under the *Academic Policies* section.

Degree Candidacy for Psychology Programs

To advance to degree candidacy, all students must meet the following requirements:

1. Pass all core courses with a 3.0 GPA or better;
2. Pass the Core Competency Examination;
3. Receive a satisfactory evaluation from the psychology department graduate committee.

Degree Candidacy for School Counseling Program

To advance to degree candidacy, all students must meet the following requirements:

1. Pass the Phase I core courses with a 3.0 GPA or better: SCCN 621 Counseling Theory and Practice I, SCCN 645 Career Development, PSYC 530 Child Development within the Family System;
2. Satisfactory progress on School Counseling Competency Project;

3. Receive a satisfactory evaluation from the school counseling program faculty and the graduate committee, after passing guidance program development.

Degree candidacy for eligible students will be updated once in the fall and spring semesters.

Baker, Jason; Associate Professor
College of Education and Human Services
B.S., Juniata College, 1999; M.Ed., The Pennsylvania State University, 2002; Ph.D., Regent University, 2008

Banna, Kelly; Associate Professor
College of Education and Human Services
B.S., James Madison University, 1999; M.S., Auburn University, 2005; Ph.D., *Ibid.*, 2007

Behun, Richard Joseph; Associate Professor
College of Education and Human Services
B.A., California University of Pennsylvania, 2005; M.S., The University of Pittsburgh School of Law, 2007; M.S.Ed., Duquesne University (School Counseling), 2008; M.S.Ed., *Ibid.* (School Administration), 2013; Ph.D., *Ibid.*, 2013

Bland, Andrew; Associate Professor
College of Education and Human Services
B.S., University of Georgia, 2000; M.A., University of West Georgia, 2003; Ph.D., Indiana State University, 2013

Cook, Shaun; Associate Professor
College of Education and Human Services
B.S., Bridgewater State College, 1996; M.A., Brandeis University, 1999; Ph.D., University of Arizona, 2006

Gallagher, Shawn; Professor
College of Education and Human Services
B.S., The Pennsylvania State University, 1990; M.A., University of Delaware, 1999; Ph.D., *Ibid.*, 2002

Garner, Nadine; Associate Professor
College of Education and Human Services
B.M., Westminster Choir College, 1991; M.S., Shippensburg University, 1992; M.Ed., *Ibid.*, 1994; Ed.D., Duquesne University, 2000

Grady, Jessica; Associate Professor
College of Education and Human Services
B.S., Lebanon Valley College, 2006; M.S., West Virginia University, 2008; Ph.D., *Ibid.*, 2011

Kaiser, Lauren; Associate Professor
College of Education and Human Services
B.S., University of Maryland, 1997; M.A., *Ibid.*, 2003 and 2004; Ph.D., *Ibid.*, 2007

MacIntyre, Rachel; Assistant Professor
College of Education and Human Services
B.S., Bucknell University, 2013; M.S., Old Dominion University, 2017; Ph.D., *Ibid.*, Eastern Virginia Medical School, and Norfolk State University, 2021

Rush, Karena; Professor
College of Education and Human Services
A.B., Bryn Mawr College, 1991; Ed. M., Harvard University, 1994; M.A., Louisiana State University, 1997; Ph.D., *Ibid.*, 2000

Thyrum, Elizabeth; Associate Professor

College of Education and Human Services
B.A., Millersville University, 1986; M.S., Rutgers University, 1989; Ph.D., *Ibid.*, 1992

Vredenburg, Debra; Associate Professor
College of Education and Human Services
B.A., Slippery Rock University, 1990; M.A., *Ibid.*, 1992; Ph.D., Ohio University, 1998

PSYC 505: 3 s.h.

Recent Developments in Psych

Contemporary issues in psychology examined through a critical review of current research, theory and practice. Designed to provide students with opportunities for independent study in areas where basic competencies are weak, or in areas of special interest. Offered periodically.

PSYC 511: 3 s.h.

Substance-Related Disorders

Focus on current treatment approaches to substance-related disorders. Following a review of specific psychoactive drugs and their impact on physical and psychological function, theoretical orientations and their application to clinical scenarios will be discussed. Diagnostic issues, assessment techniques and currently accepted intervention techniques will be covered. Special populations involving gender, ethnicity, sexual orientation and comorbidity will be highlighted. Offered periodically.

PSYC 515: 3 s.h.

Physiological Psychology

A systematic examination of the nervous and sensory systems and their regulation of human behavior. Basic knowledge of biology and chemistry is essential. Offered annually.

PSYC 517: 3 s.h.

Tests and Measurements

Introduction to basic principles of psychological testing and measurements. Issues in test construction and design, evaluation of psychometric properties, and applications of tests in various fields of psychology. Offered annually.

PSYC 525: 3 s.h.

Advanced Child Psychology

In-depth examination of human development, with emphasis on birth through adolescence. Presentation of current accounts characterizing development in various domains (physical, cognitive, social, moral, psychosexual) and critical reviews of theoretical attempts to explain the process of development. Offered annually.

PSYC 526: 3 s.h.

Advanced Adolescent Psychology

Personal and environmental forces that are dynamic in the behavior of adolescents. Emphasis is given to the family, school and community aspects of adolescent behavior. Recent developments in adolescent psychology and adolescent development are emphasized. Offered annually.

PSYC 527: 3 s.h.

Childhood Disorders

Childhood Disorders provides an in-depth look at psychological disorders that occur in childhood. Students will learn the diagnostic criteria, etiology and developmental progression of childhood disorders. Students will also be exposed to assessment techniques that can be used to diagnose the disorders such as observation and data collection systems. An overview of interventions used in childhood will also be presented and students will learn how to identify empirically based interventions.

PSYC 530: 3 s.h.**Child Development within the Family System**

Theory and research on the development of cognitive, emotional, linguistic, psychosexual and moral systems in the child. Emphasis on the impact of family structure and dynamics on the developing child.

PSYC 536: 3 s.h.**Applications of Biopsychology**

Survey of current topics. Includes psychotropic drugs, neuropsychological assessment and treatment. Emphasis on clinical applications and knowledge base to enable referrals/coordination with related psychiatry/neurology professionals.. Offered annually.

PSYC 537: 3 s.h.**Ethics and Professional Practice**

This course combines ethics education with an introduction to clinical psychology and counseling. Ethical standards of psychologists and counselors and an ethical decision-making model will be applied to moral ethical and legal dilemmas in clinical practice. The historical development of clinical psychology, its major theoretical perspectives and empirically supported treatments will be reviewed. Offered annually.

PSYC 540: 3 s.h.**Applied Behavior Analysis in a MTSS**

Student behavior, both behavioral and academic, is a function of school, classroom, and individual factors. This course will focus on the impact of behavioral interventions delivered using multi-tiered system of supports (MTSS) and positive behavioral interventions and supports (PBIS) frameworks. Applied behavioral analysis will be thoroughly covered. Students will conduct single subject design research to determine the effectiveness of empirically based interventions on a child's behavior. School-wide behavior supports, as well as classroom management strategies, which impact on student discipline, will also be reviewed. Classroom behaviors will be examined within the context of the culture of the school and the community in which the school resides. This course is geared towards educators who consult with school personnel to solve educational problems, e.g., school psychologists and school counselors. The content will be useful, however, for professionals who work to increase functional behaviors in their clients. Offered in fall.

PSYC 546: 3 s.h.**Learning Theory**

Review of behavioral approaches to learning such as operant and classical conditioning, and observational learning. Cognitive and ethological challenges to behavioral theories will be considered. Includes information-processing models of learning.

PSYC 547: 3 s.h.**Applied Social Psychology**

Examines the effects of social psychological factors on various clinical issues, including racial-ethnic and cultural issues, the development and maintenance of maladaptive behaviors, clinical judgment, relationship between clinician/school psychologist and client, and the outcome of intervention. Offered in fall.

PSYC 586: 1-4 s.h.**Topics in Psychology**

Investigate and develop one or more topics of current interest not normally covered in regular psychology courses. Special topics and methods used to investigate the topics will vary according to the needs of psychology students and faculty. Offered periodically.

PSYC 587: 1-4 s.h.**Topics in Psychology**

Investigate and develop one or more topics of current interest not normally covered in regular psychology courses. Special topics and methods used to investigate the topics will vary according to the needs of psychology students and faculty. Offered periodically.

PSYC 588: 1-4 s.h.**Topics in Psychology**

Investigate and develop one or more topics of current interest not normally covered in regular psychology courses. Special topics and methods used to investigate the topics will vary according to the needs of psychology students and faculty. Offered periodically.

PSYC 589: 1-4 s.h.**Topics in Psychology**

Investigate and develop one or more topics of current interest not normally covered in regular psychology courses. Special topics and methods used to investigate the topics will vary according to the needs of psychology students and faculty. Offered periodically.

PSYC 600: 3 s.h.**Professional Seminar**

The philosophy, administrative arrangements, responsibilities and general functions of a school psychologist. Emphasis on research information relating to skills and techniques used by psychologists in the prevention and remediation process as they apply to schoolchildren. Firsthand experience in the functions of a school psychologist through field visitations and planned seminars. Schedule near the beginning of the program. Offered annually.

PSYC 612: 3 s.h.**Research Design & Statistical Analysis**

This course is designed to develop and extend skills in the interpretation of psychological research. Understanding the relationships between research methods, statistical procedures and interpretation is emphasized. Offered in fall and spring.

PSYC 625: 3 s.h.**Human Growth and Development**

A comprehensive study of growth and development with a life-span perspective. Physical growth and maturation, social development, emotional and personal development, and cognitive development. Special projects in the field of student's interest. Offered annually.

PSYC 626: 3 s.h.**Trauma Treatment**

Provides an overview of the conceptual and empirical foundations of post-traumatic stress disorder (PTSD), the neurobiology of stress and an overview evidence-based trauma treatments. Protocols for trauma assessment, cognitive-behavioral and contextual case formulation and treatment methods will be reviewed. Strategies for psychoeducation, treatment engagement, emotional regulation, exposure and relapse prevention will be emphasized.

PSYC 630: 3 s.h.**Group Work: Theory & Intervention**

Reviews major theories of group therapy and concepts related to group formation and dynamics. Develops skills through role playing interventions from diverse schools of group therapy. Reviews current research on the effectiveness of support, counseling and therapy group treatment for various mental health and/or substance use disorders. (Offered fall and spring)

PSYC 631: 3 s.h.**Psychotherapy and Intervention Skills**

Intensive supervised training in effective helping skills, including listening and responding skills, relationship enhancement, interview skills and active interventions. Students receive supervision of videotaped counseling with clients.

PSYC 632: 3 s.h.**Group Cnslng and Psychotherapy**

Development of skills and awareness necessary for successful functioning as a facilitator of groups or as a group leader. Methods include participation in an encounter group, role playing, analyses of nonverbal communication, and reflective listening. Offered annually.

PSYC 633: 3 s.h.**Systems of Psychotherapy**

Reviews the major paradigms in psychotherapy using a trans-theoretical model. Major paradigms include: psychoanalytic/psychodynamic; person-centered/existential; behavioral; cognitive; cognitive-behavioral; systems; gender sensitive, multicultural and third wave therapies. Application of theories through self-analysis and case studies will be emphasized along with the stages of change model and current research on the efficacy of these therapies.

PSYC 634: 4 s.h.**Child Psychopathology and Intervention**

Introduces students to child and adolescent psychopathology and therapeutic interventions used with children and adolescents. Play therapy techniques with clinical child populations, process groups with adolescents and preadolescents, behavioral group therapy, adjunct parent counseling and cognitive-behavioral procedures are emphasized. Offered in summer.

PSYC 635: 3 s.h.**Psychopathology**

Develops the ability to diagnose in traditional nosological fashion and to be able to discriminate from one another the various mental disorders contained in the DSM-IV. In addition to requiring the ability to diagnose the mental disorders, students will also be required to write diagnostic reports using DSM-IV multiaxial system. Offered annually.

PSYC 636: 3 s.h.**Cognitive Therapy**

Basic principles and clinical applications of cognitive therapy. Use of role play, audiotapes and videotapes to help others identify and restructure thinking patterns and beliefs that contribute to personal and interpersonal conflicts and psychological disturbances. Offered annually.

PSYC 637: 3 s.h.**Theories of Family Dynamics**

Reviews major systems of family therapy including structural, strategic, systems-based and other approaches and their application to a range of clinical and family development issues. Normal and dysfunctional family development, structure, roles, boundaries and functioning will also be reviewed. Prereq: Graduate program admission. Offered in summer.

PSYC 638: 3 s.h.**Cognitive Behavioral Therapies**

Review models of common clinical problems and specific cognitive, behavioral and integrative techniques. Role play, videotape, in-class demonstrations and case materials will be used to provide hands-on experience. Students will incorporate cognitive-behavioral perspectives and interventions with clients. Offered annually.

PSYC 639: 3 s.h.**Selected Therapies: Existential and Humanistic Therapies**

Surveys conceptual foundations and methods of classic and contemporary humanistic and existential psychotherapies and their practical application and implementation with a variety of clinical populations and presenting issues/needs. Students will employ this knowledge/perspective in case conceptualization and treatment planning, engage in case discussions and skills practice, explore supporting research and practical considerations, and critically examine implications for effective, sustainable, and contextually- and culturally-sensitive therapeutic practice. Prereq: Passed CCEs, PSYC 631 (for Clinical Psychology students) or instructor permission (for Social Work graduate students).

PSYC 646: 3 s.h.**Consultation**

Explores the theoretically and practically applied aspects of consultation. School, instructional, behavioral, conjoint-behavioral, mental-health/consultee-centered, multicultural, and organizational models of consultation and coaching, as well as teleconsultation strategies, will be covered. Students will develop and implement individual consultation projects. Offered in fall.

PSYC 670: 4 s.h.**Clinical Interviewing and Appraisal Skills**

Development of competencies in evidence-based interviewing and observation skills and in administration, scoring, interpretation, and application of diagnostic measures, mental status exams, and risk assessments. Students also are introduced to selected cognitive, personality, and behavioral assessment instruments. Students receive supervision of recorded sessions with clients and report writing. Insurance required and must pass CCE to enroll.

PSYC 671: 3 s.h.**Cognitive Achve & Adapt Assess**

Introductory course in individual psychological evaluation, stressing practical experience in administering and interpreting individual psychological test batteries. Standardized intelligence tests are emphasized. Introduces special-purpose tests such as adaptive behavior assessment and brief achievement tests. Students administer tests and write reports under supervision. Prereq: Pass Core Competency Exams (CCE) and Insurance required. Offered in fall and spring.

PSYC 672: 3 s.h.**Academic Assess & Intervention in MTSS**

Prepare students to assist schools in the provision of appropriate academic programming for children within the context of current federal and state regulations. A multi-tiered system of academic service delivery will be used as a framework for developing appropriate assessments. Students will learn to conduct assessments that answer academic referral questions, inform intervention design, and measure intervention integrity and effectiveness. Ecological and direct assessments will be discussed in depth. Solution-focused report writing skills utilizing an RTI/MTSS approach will be introduced and developed. Offered annually.

PSYC 673: 3 s.h.**Personality Assessment**

An introduction to the administration, scoring, interpretation and application of personality-assessment instruments. Introduces objective tests, projective tests and behavioral assessment.

PSYC 674: 3 s.h.**Assessment of English Language Learners**

A multicultural-issues class with focus on assessment and classification of culturally and linguistically diverse children. Prepares school psychologists and practitioners in the mental-health field to work with English language learners, make educational recommendations and help determine the extent to which child learning difficulties are related to limited English proficiency, cultural/ecological factors or learning disabilities. Learn assessment techniques, skills and strategies to be used with English language learners.

PSYC 675: 3 s.h.**Behavioral Assessment Child/Adolescent**

This course is designed to develop skills in conducting assessments and developing treatment recommendations for students referred for behavioral/emotional difficulties. The purpose of this course is to provide training in the techniques of behavioral assessment including direct observation, interviews, checklists, rating scales, self-monitoring and other methods of assessment. A tiered model of service delivery will be used as a larger context for discussing assessment methods that may be used for universal screening and more individualized assessments.

PSYC 679: 1-4 s.h.**Experimental**

Experimental

PSYC 682: 1-6 s.h.**Internship In Psych**

Supervised internship in a field agency, hospital or clinic. Designed to develop the student to a point of entry-level skills in the areas of assessment, counseling and staff participation. Students meet regularly with departmental supervisor. Schedule near end of program. The course must include 600 hours of supervised clinical experience. Experience must meet following guidelines: 30-40 hours per week across a three month period OR 15-30 hours per week across a six month period.

PSYC 685: 3 s.h.**Practicum and Seminar in School Psychology**

Sequential, supervised experiences in field settings working with children of preschool and school age. Students complete a comprehensive case study. Students meet regularly with University supervisor both individually and in seminars. Offered annually.

PSYC 686: 3-9 s.h.**Internship and Seminar in School Psychology**

Yearlong, extensive supervised clinical and field experiences in all domains of school psychology. Students meet regularly with University supervisor both individually and in seminars. Schedule in last year of program. Offered annually. Pre-requisites: All other M.S., Psychology, School coursework and Ed.S. coursework must be completed before internship. Professional liability insurance required. Updated clearances (ACT 34/ACT114/ACT151 and TB test results), which must be valid for the entire semester, must be on record with Field Services by the deadline. Follow the submission procedure and deadlines outlined by Field Services or you will be dropped from the class.

PSYC 691: 1-3 s.h.**Ind Stdy:****PSYC 696: 3 s.h.****Research Methods in Psychology**

Introduction to, and application of, advanced methods of psychological research. Emphasis placed upon the development and practice of research skills as preparation for conducting original research for a thesis.

PSYC 699: 3,6 s.h.**Thesis:**

Student designs and conducts research in an appropriate area in psychology. The results and interpretation are presented in a written thesis. The entire process is guided by the research adviser.

PSYC 799: 3,6 s.h.**Pract Supervision**

Field experience in the various activities performed by supervisors of psychological services. The student plans a relevant program of practical experiences, based on the comprehensive role of the supervisor of psychological services, in conjunction with the University supervisor.

Behavioral Health and Counseling Graduate Certificate

The certificate provides a clear pathway for post-baccalaureate students to navigate foundational coursework necessary for the development of counseling skills in behavioral health and school settings. The selected courses in the certificate program represent an array of topics including observation and measurement of behaviors, growth and development over the lifespan, the assessment, treatment, and prevention of maladaptive behaviors, and the process and practice of counseling.

Behavioral Health & Counseling - Post-Bacc Cert

Code	Title	Hours
PSYC 100	General Psychology	3
PSYC 211	Principles of Statistics and Experimental Design 1	4
Development or Lifespan - Choose 1 of the following:		3
PSYC 227	Development of the Child and Adolescent	
PSYC 228	Life Span Human Development	
PSYC 229	The Adult Years	
PSYC 337	Abnormal Psychology	3
PSYC 447	Counseling Strategies	3
Choose one of the following electives. - Choose 1 of the following:		3
PSYC 215	Intro to Physiological Psychology	
PSYC 311	Psychology of Drug Addiction	
PSYC 317	Social Psychology	
PSYC 335	Personality Theory	
PSYC 346	Applied Behavior Analysis	
PSYC 403	Family Systems	
PSYC 427	Childhood Disorders	
Total Hours		19

Psychology/Clinical Psychology, M.S

The clinical program is designed for students who wish to pursue a career in mental health, functioning as counselors and clinicians. It also prepares students for further graduate study. It emphasizes the development of assessment and psychotherapeutic skills through coursework and supervised experience with clients in the department's training clinic, and through internships in local mental-health agencies and hospitals. Students wishing to pursue licensure as a professional counselor after graduation are advised to complete the clinical program with the following courses, which may be helpful when taking the National Counselor Exam (NCE): SCCN 630 Multicultural Counseling; SCCN 645 Career Development; and PSYC 537 Ethics and Professional

Practice. Students are advised to obtain 60 graduate credits in order to meet educational requirements for licensure.

Psychology/School Psychology, M.S.

The Master's Degree in Psychology program (M.S.) is a 30-credit graduate course of study, which is required for admission into the Education Specialist (Ed.S.) Program in School Psychology. The M.S. program will provide the foundational theories, knowledge, and research methods of psychology, which will serve as a base for the Ed.S. in School Psychology. The program is fully approved by the National Association of School Psychology. Upon completion of the specified 30 credit hours of coursework, a M.S. in Psychology, School Psychology, is awarded. This M.S. degree in Psychology, School, does not certify the candidate for practice as a school psychologist in public schools. Following successful completion of the M.S. program, candidates continue to earn 34 additional credits, which includes a 1200-hour internship. The candidate then earns an Ed.S. in School Psychology and is recommended for certification as a school psychologist to the Pennsylvania Department of Education. Students may also transfer graduate coursework or a master's degree in psychology or a related area into the program. When that is the case, a review of previous work will be conducted to determine which competencies have been met and the remaining program requirements.

Major in Psychology - School Psychology

Code	Title	Hours
Core Competency Examination		
Must pass the Core Competency Exam for the School Psychology Program.		
PSYC 530	Child Development within the Family System	3
PSYC 612	Research Design & Statistical Analysis	3
PSYC 600	Professional Seminar	3
PSYC 631	Psychotherapy and Intervention Skills	3
PSYC 536	Applications of Biopsychology	3
PSYC 547	Applied Social Psychology	3
PSYC 540	Applied Behavior Analysis in a MTSS	3
Introduction to Exceptional Education		
SPED 600	Orientation to Special Education	3
RDED 621	Foundations of Reading and Writing	3
EDUC 671	Curriculum Development in the School	3
Total Hours		30

School Counseling, M.Ed.

This is a 51-s.h. post-baccalaureate program. Upon completion of specified coursework (39 s.h.) in the program, the student is awarded a Master of Education degree in school counseling. Following successful completion of the remaining coursework and fieldwork, the student is certified as a preK-12 school counselor in the Commonwealth of Pennsylvania.

In order to be considered for an interview, applicants are required to have a minimum of six semester hours in undergraduate or graduate psychology. Applicants must also be computer literate.

Prerequisite courses in psychology may be in process during the semester in which application to the program is submitted. In this case, evidence that the coursework is currently being taken (either in the form of a mid-semester grade report or a letter from the instructor) must be

submitted with the program application. In addition, experience with children in applied settings is preferred.

Master of Education in School Counseling

1. Provisional acceptance
2. All coursework completed and School Counseling Competency Project passed
3. Pre-internship portfolio completed
4. Recommendation of graduate faculty
5. Admission to degree candidacy

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
Methd of Resrch or Resrch Design Stat Analysis - Choose 1 of the following:		3
EDFN 601	Research Methods	
PSYC 612	Research Design & Statistical Analysis	
Philosophical Core Requirement - Choose 1 of the following:		3
EDFN 511	Comparative Education	
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Total Hours		6

Major in School Counseling -MED

Code	Title	Hours
PHASE I: CORE		
SCCN 525	Intro to Professional School Counseling	3
PSYC 530	Child Development within the Family System	3
SCCN 612	Study Of the Individual	3
SCCN 621	Counseling Theory and Practice I	3
SCCN 645	Career Development	3
PHASE II		
SCCN 622	Group Procedures in Counseling	3
SCCN 630	Multicultural Counseling	3
SCCN 631	Appraisal Techniques for Guidance Purposes	3
SCCN 651	Theory and Practice 2	3
PHASE III		
SCCN 657	Brief Counseling	3
SCCN 671	Guidance Program Development	3
Total Hours		33

Certification in School Counseling

Code	Title	Hours
These requirements must be completed to be eligible for School Counseling Certification from the PA Dept of Education.		
CERTIFICATION REQUIREMENTS		
PSYC 540	Applied Behavior Analysis in a MTSS	3
Introduction to Exceptional Education		
SPED 600	Orientation to Special Education	3
SCCN 665	School Counseling Practicum	3
Internship 1: School Counseling - Choose 3 hours from:		
		3

SCCN 675	Internship 1: School Counseling	
Total Hours		12

Licensure Eligibility in Counseling

Code	Title	Hours
These requirements must be completed to be eligible for licensure as a licensed professional counselor (LPC)		
Ethics Requirement - Choose 1 of the following:		
SCCN 625	Ethics School Counseling	3
PSYC 537	Ethics and Professional Practice	
PSYC 625	Human Growth and Development	3
Internship 2: School Counseling or Supervised Experience in Higher Education and Community Agencies - Choose 3 hours from:		
SCCN 676	Internship 2: School Counseling	3
SCCN 641	Internship: Higher Ed & Comm	
Total Hours		9

School Counseling, Post-Masters Certification

The Master's of Education School Counseling Program at Millersville University offers a 39-credit program with an option for PDE (Pennsylvania Department of Education) Certification in School Counseling (12 credit hours). It can be completed as a 51-credit master's degree, which is counted towards LPC eligibility in the future.

Certification in School Counseling

Code	Title	Hours
In addition to having completed the MED in School Counseling, these requirements must be completed to be eligible for School Counseling Certification from the PA Dept of Education.		

CERTIFICATION REQUIREMENTS

PSYC 540	Applied Behavior Analysis in a MTSS	3
Introduction to Exceptional Education		
SPED 600	Orientation to Special Education	3
SCCN 665	School Counseling Practicum	3
Internship 1: School Counseling - Choose 3 hours from:		
SCCN 675	Internship 1: School Counseling	3
Total Hours		12

School Psychology, Ed.S.

The education specialist degree program in school psychology is a 64-credit graduate course of study, leading to certification in school psychology in the Commonwealth of Pennsylvania. The program is fully approved by the National Association of School Psychology. Upon completion of a specified 30 credit hours of coursework, a Master of Science (M.S.) in Psychology, School Psychology, is awarded. Following successful completion of the program, which includes a 1200-hour internship, the candidate is recommended for certification as a school psychologist to the Pennsylvania Department of Education. Students may also transfer graduate coursework or a master's degree in psychology or a related area into the program. When that is the case, a review of previous work will be conducted to determine which competencies have been met and the remaining program requirements.

Major in School Psychology

Code	Title	Hours
SCHOOL PSYCHOLOGY MASTER'S COMPETENCIES		
Core Competency Examination		
Must pass the Core Competency Exam for the School Psychology Program.		
Admission to degree candidacy		
Students must meet the following requirements for degree candidacy: Pass all core with B- or higher; Pass the Core Competency Exam and Receive a satisfactory evaluation from the psychology department graduate committee.		
PSYC 530	Child Development within the Family System	3
PSYC 612	Research Design & Statistical Analysis	3
PSYC 600	Professional Seminar	3
PSYC 631	Psychotherapy and Intervention Skills	3
PSYC 536	Applications of Biopsychology	3
PSYC 547	Applied Social Psychology	3
PSYC 540	Applied Behavior Analysis in a MTSS	3
Introduction to Exceptional Education		
SPED 600	Orientation to Special Education	3
RDED 621	Foundations of Reading and Writing	3
EDUC 671	Curriculum Development in the School	3
EDUCATIONAL SPECIALIST COURSEWORK		
PSYC 671	Cognitive Achve & Adapt Assess	3
PSYC 672	Academic Assess & Intervention in MTSS	3
PSYC 674	Assessment of English Language Learners	3
PSYC 675	Behavioral Assessment Child/Adolescent	3
PSYC 646	Consultation	3
PSYC 634	Child Psychopathology and Intervention	4
Elective - Choose 1 of the following:		
GFED 670	Psychology of the Gifted	3-6
ECHD 611	Affective and Psychmtr Emphasis	
EDUC 561	Second Language Acquisition: Theory, Programs & Assessment	
EDFN 545	Advanced Educational Psychology	
EDFN 590	Social Foundation of Educ	
EDFN 604	Education and Public Policy	
PSYC 517	Tests and Measurements	
PSYC 527	Childhood Disorders	
PSYC 537	Ethics and Professional Practice	
PSYC 630	Group Work: Theory & Intervention	
PSYC 633	Systems of Psychotherapy	
PSYC 635	Psychopathology	
PSYC 637	Theories of Family Dynamics	
PSYC 638	Cognitive Behavioral Therapies	
PSYC 699	Thesis:	
SCCN 630	Multicultural Counseling	
SCCN 657	Brief Counseling	
SPED 680		
PSYC 685	Practicum and Seminar in School Psychology	3
PSYC 686	Internship and Seminar in School Psychology	9
Total Hours		64-67

Social Work

The Programs

The Department of Social Work offers:

- Expressive Arts Post-Baccalaureate Certificate (p. 440)
- Home and School Visitor Post-Baccalaureate Certificate (p. 441)
- School Social Work Post-Master's Certification (p. 441)
- Social Work, D.S.W. (p. 442)
- Social Work, M.S.W. (p. 443)

Bethel, Joyous; Assistant Professor
College of Education and Human Services
B.A., University of Oklahoma, 1981; M.S.W., Ibid, 1982; Ph.D., Barry University, 1997

DeJesus, Bertha; Assistant Professor
College of Education and Human Services
B.S.W., Shippensburg University, 1998; M.S.W., Widener University, 2004; D.S.W., Kutztown-Millersville University, 2018

Felizzi, Marc; Associate Professor
College of Education and Human Services
B.A., Delaware State University, 1978; M.S.W., Ibid., 1995; Ph.D., Widener University, 2011

Foels, Leonora; Associate Professor
College of Education and Human Services
B.S., Webber College, 1988; M.S.W., Simmons College, 1993; Ph.D., Barry University, School of Social Work, 2007

Frank, Jennifer; Associate Professor
College of Education and Human Services
B.A., Millersville University, 1999; M.S.W., Ibid., 2009; Ph.D., Bryn Mawr College, 2017

Girvin, Heather; Associate Professor
College of Education and Human Services
B.A., Dickinson College, 1992; M.S.S., Bryn Mawr College, 1995; Ph.D., Ibid., 2002

Granruth, Laura; Associate Professor
College of Education and Human Services
B.A., Fordham University, 1984; M.S.W., Virginia Commonwealth University, 2001; Ph.D., Catholic University of America, 2009

Ogong, Wanja; Associate Professor
College of Education and Human Services
B.A., University of Nairobi (Kenya), 1991; M.S.W., West Chester University, 2005; Ph.D., Widener University, 2012

Proctor, Curtis; Assistant Professor
College of Education and Human Services
B.A., University of Oklahoma, 1989; M.S.W., University of Iowa, 1992; Ph.D., Case Western Reserve University, 2005

Redcay, Alex; Associate Professor
College of Education and Human Services
B.A., Truman State University, 2001; M.S.W., Sothern Connecticut State University, 2008; Ph.D., Rutgers University, 2016

Rice, Karen; Professor
College of Education and Human Services

B.A., Millersville University, 1991; M.S.W., Temple University, 2000; Ph.D., University of Maryland, 2011

Walsh, Kathleen; Associate Professor
College of Education and Human Services
B.S.W., University of Maryland, Baltimore, 1996; M.S.W., Ibid., 1997; Ph.D., Ibid., 2015

SOWK 500: 3-12 s.h.

Co-Op Ed Experience in Sowk

Co-Op Ed Experience in Sowk

SOWK 501: 3 s.h.

Principles and Philosophies of Social Work

Introduces the generalist model for practice, which serves as a base for subsequent social work courses and provides initial understanding of the needs and issues of special populations in relation to social welfare policies and services as well as social work practice. The course provides an introduction to the profession and the MSW program while helping to prepare students for their subsequent field placements. This course may be offered in multiple modalities.

SOWK 505: 3 s.h.

Understanding Social Work Practices w Diverse Pops

Focuses on issues of understanding human diversity, risk, societal power and privilege, including issues related to sexism, heterosexism, classism, ageism, religion and spirituality, cultural identity development oppression, risk, resilience and empowerment. This course may be offered in multiple modalities. Prereq. SWK/SOWK 501

SOWK 510: 3 s.h.

Human Behavior in the Social Environment I

Examines the life-span approach to human development, with a focus on the interaction between the individual's biopsychosocial functioning and the social environment. It considers the impact of micro and mezzo (i.e., families and small groups) systems on behavior, with particular emphasis given to populations considered to be at risk. This course may be offered in multiple modalities. Prereq or Coreq: SWK/SOWK 501.

SOWK 511: 3 s.h.

Human Behavior in the Social Environment II

Explores theories for understanding the behavior of individuals, social systems and communities. It examines traditional and alternative perspectives on the political, economic and institutional environments, and critically considers opportunity structures and how they deter and promote human. Students evaluate theory and apply it to social work practice situations. This course may be offered in multiple modalities. Prereq: SWK/SOWK 510.

SOWK 515: 3 s.h.

Social Welfare Policy

Furnishes students with the orienting knowledge and skills needed to examine social welfare policies and to understand their relevance to social service delivery and social work practice. This course may be offered in multiple modalities. Prereq: SWK/SOWK 501

SOWK 520: 3 s.h.

Micro/Mezzo Social Work Practices

Offers opportunities for applying and studying advanced generalist practice with individuals, families and groups. Students will learn and apply skills to their specific areas of interest, which enable development of individuals, families and groups in environment processes for improving social functioning. This course may be offered in multiple modalities. Prereq: SWK/SOWK 501; Coreq: SWK/ SOWK 530.

SOWK 521: 3 s.h.**Macro Social Work Practice**

Conceptualizes macro social work as the profession that brings about social change. The course extends from understanding theories about communities and organizations to assessment and practice. Students will focus on analysis of the community as a social system, common strategies for producing change in community work, the nature of formal organizations as environments through which social services are provided in the community, and the knowledge and skills necessary to effect change within organizations. Students will examine the role of a macro social worker as program developer, program administrator and organization developer. This course may be offered in multiple modalities. Prereq: SWK/SOWK 520; Coreq: SOWK 531.

SOWK 525: 3 s.h.**Research Methods**

Introduces research concepts, procedures for conducting research and their application to social work practice. Advanced knowledge of scientific inquiry, the ethics that guide research and the roles of social workers as researchers are also covered. Both qualitative and quantitative methods of collecting and analyzing data are given major attention. Students learn the procedure for developing a research proposal. This course may be offered in multiple modalities. Prereq: SWK/SOWK 501

SOWK 530: 3 s.h.**Field Practicum 1**

Provides students with practical experience (200 hours) in supervised direct-service activities across all client systems, from the individual's level to that of the community. This initial field experience allows the student to apply theory and skills acquired in the generalist foundation areas while simultaneously fostering the development of a professionally reflective, ethical, knowledgeable and self-evaluating social worker. The course also includes a seminar where students discuss and process the field experience with faculty. Coreq: SWK/SOWK 520

SOWK 531: 3 s.h.**Field Practicum 2**

Provides students with practical experience (200 hours) in supervised direct-service activities across all client systems, from the individual's level to that of the community. This initial field experience allows the student to apply theory and skills acquired in the generalist foundation areas while simultaneously fostering the development of a professionally reflective, ethical, knowledgeable and self-evaluating social worker. The course also includes a seminar where students discuss and process the field experience with faculty. Prereq: SWK/SOWK 530 Coreq: SWK/SOWK 521

SOWK 601: 3 s.h.**Integrative Seminar**

Course builds upon the foundation content from students' B.S.W. programs. It serves as a 'bridge' course to integrate B.S.W. learning in preparation for M.S.W. courses. The course provides opportunities for a review of competencies and related behaviors, with a special focus on ethics, policy and research. This course may be offered in multiple modalities. Prerequisite: Advanced Standing admission status.

SOWK 602: 3 s.h.**Behavioral Health**

Enables students to understand and increase their ability to work with micro to macro aspects of mental health/mental retardation and substance abuse/dependence as bio-psycho-social-societal phenomena. This course will be offered in a blended distance education format. Prereq: SOWK 601 or completion of foundation year. Offered in spring.

SOWK 603: 3 s.h.**Gender Issues**

Provides an in-depth study of the concepts, policies, practices and research in the field of gender studies. This course will examine institutionalized gender socialization, current gender issues and controversies, feminist theory for understanding behavior, and guiding principles and practices for helping professionals. This course will be offered in a blended distance education format. Prereq: SOWK 601 or completion of foundation year. Offered periodically.

SOWK 604: 3 s.h.**Health Care**

Focuses on four content areas: 1) what the social worker's role is in different healthcare settings; 2) historic and current policies that affect healthcare services; 3) current research in various healthcare-related issues; and 4) international models of care. This course will be offered in a blended distance education format. Prereq: SOWK 601 or SOWK 531. Offered periodically.

SOWK 605: 3 s.h.**Child Welfare**

Provides an in-depth study of the concepts, policies, practices and research in the field of child welfare and family and children services. This course will provide an introduction to the child welfare field, an overview of the development of services for children, a detailed examination of the provision of services and an exploration of the ethical implications of child welfare practice. This course will be offered in a blended distance education format. Prereq: SOWK 601 or SOWK 531. Offered periodically.

SOWK 606: 3 s.h.**School Social Work**

Provides an in-depth study of the concepts, policies, practices and research in the field of school social work, examining policy, research, practice and human behavior content. This course will be offered in a blended distance education format. Prereq: SOWK 601 or SOWK 531. Offered periodically.

SOWK 607: 3 s.h.**Emergency Mental Health and Trauma**

Provides an in-depth study of the concepts, policies, practices and research in crisis intervention during disasters. This course will provide an introduction to the disaster field, a detailed examination of the human service delivery systems and guidelines for attending to the emotional and mental-health needs of both disaster survivors and responders, using the Critical Incident Stress Management model. This course is offered online. Prereq: SOWK 601 or SOWK 531 or permission of instructor. Offered periodically.

SOWK 608: 3 s.h.**Administration and Supervision**

This course is designed to expand students' knowledge of and skills in effective program management of human services organizations and to provide approaches for managing service programs effectively. Organizational and management theories and principles are applied to a range of human services. This course will provide students with an introduction to the knowledge and skills necessary to perform managerial and supervisory functions in public and private human service organizations, including those that have historically served populations at risk. It will examine the structure and processes of human service organizations, the process of management, and organization building. The course will also cover different supervisory approaches and techniques and consider supervisory challenges that arise in various practice settings. During this course, students will be provided with opportunities to build competencies.

SOWK 609: 3 s.h.**Introduction to Art Therapy**

This advanced elective course explores the principles and the techniques of art therapy and considers the usefulness of art therapy in providing alternatives and supplements to the customary verbal methods of intervention. Ways of working with clients at various stages of the life cycle, childhood through later adulthood, and with clients who are on different levels of psychosocial functioning are examined. Issues in art therapy are explored both cognitively and experientially. Previous training in the visual arts and artistic ability are not required. This course will meet 2/3 online and 1/3 in the classroom. Offered periodically. Prereq or Coreq: SOWK 601 or SOWK 531.

SOWK 610: 3 s.h.**Advanced Human Behavior in the Social Environment**

This advanced practice course, with heavy focus on clinical assessment, provides students with a conceptual framework for clinical social work practice with individuals. The course will emphasize assessing clients' systems at the micro level, with a particular focus on diagnoses, assessment and treatment of individuals. The course maintains a multicultural, strengths perspective and a focus on diversity, rural populations, and social and economic justice. This course may be offered in multiple modalities. Prerequisite(s): SWK/SOWK 531 or SWK/SOWK 601 (the latter may be taken concurrently).

SOWK 611: 3 s.h.**Children and Youth At-Risk**

This course is an in-depth study of the concepts, policies, practices and research in the field of child services, including school social work and child welfare. In addition, this course will provide a detailed exploration and understanding of a range of at-risk children and youth populations and their families. This comprehensive understanding will assist practitioners to effectively conduct an assessment and develop a treatment plan listing evidence-based intervention strategies and/or prevention programs that will effectively meet the complex needs of at-risk populations and their families. The challenges and ethical dilemmas confronting social work practitioners working with at-risk populations and their families will also be addressed. Prereq or Coreq: SOWK 521 or 601. Offered in summer.

SOWK 612: 3 s.h.**Social Work and the Law**

Social workers understand that virtually everything they do professionally in the 21st century has to include evaluations of risk, legality, funding and unintended consequences. Malpractice appropriately receives much attention in this regard, but legislative and regulatory requirements regarding funding, grants and contracts, definitions of disabilities, responsibilities of different levels of government and many other legal aspects of the profession must also be considered. For most people, law is a foreign language, and social workers need to be somewhat fluent in this language so they can deal with the convergence of law and social work, social services and social policy. This course will be offered in a blended distance education format. Prereq or Coreq: SOWK 601. Offered periodically.

SOWK 613: 3 s.h.**Mediation in SOWK Practice**

Mediation as an alternate form of dispute resolution is continuing to rise and is being used in human services, corporate, labor, consumer, and family issues widely across the United States. Students in the Mediation class will focus on practical and theoretical aspects of mediation and its place in the larger framework of alternate dispute resolution for social work clients. Skills in helping parties find common ground, creating a climate for reaching agreement, aspects of confidentiality, and both directive and non-directive mediation techniques will be explored.

SOWK 614: 3 s.h.**Survey Devel & Measurement**

This advanced course prepares students with the skills to be critical users of a variety of types of measurement instruments, as well as gain experience in the intricacies of scale development, including psychometrics. Students will examine and determine scale reliability and validity.

SOWK 615: 3 s.h.**Advanced Social Welfare Policy**

Course introduces conceptual approaches to policy analysis and assesses selected social policies, programs, and services in the areas of income maintenance, health care and personal social services in accordance with these approaches and with specific reference to their impact on special populations. This course may be offered in multiple modalities. Prerequisite(s): SWK/SOWK 531 or SWK/SOWK 601

SOWK 616: 3 s.h.**Leadership Dynamics in SW Prac**

Leadership theories and practices that are relevant to professional social work. The course prepares students for effective leadership practice in both formal leadership positions (i.e. administrative positions) and informal leadership (i.e. amongst colleagues). Students will be able to apply the course concepts to their work as advanced generalist practitioners at micro, mezzo and macro levels. Leadership issues and challenges within a multicultural context and variety of settings including nonprofit, public, for-profit, community-based, political, national and international organizations will be explored. Students will assess their own and others' leadership styles in order to build competence as leaders. Students will create an individual leadership development plan based on key leadership theories and models. Special emphasis will be placed on the need for evidence-based leadership practice and leadership for social and economic justice.

SOWK 617: 3 s.h.**Addictions in Field of SOWK**

This course will focus on the topic of addictions, preparing students to recognize and intervene when clients and their families demonstrate addictions problems in a wide range of social service agencies and host settings, such as child welfare, mental health, aging, schools, health care, corrections, and drug and alcohol programs. The course will examine the evolving models of alcohol and chemical dependency to the present day understanding of the disease model, including an examination of the neurobiology of addiction and basic pharmacology including medication assisted therapies. The concept of harm reduction is introduced. Using a case studies approach, students will develop assessment and intervention skills. The course will address professional issues including credentialing, confidentiality and ethics.

SOWK 618: 3 s.h.**Human Rights in Social Work**

This three credit advanced elective course includes the examination of the major human rights documents and their impact on social work practice as well as the exploration of strategies and techniques used in the rights-based approach in social work. This is a hybrid course that is primarily delivered on-line with some face- to-face interaction.

SOWK 619: 3 s.h.**Global Perspectives in SOWK**

Students will be exposed to global issues and understand how the institution of social welfare has developed in different regions of the world. The course examines globalization and its effect on social welfare and human need. As a way of understanding how different regions and countries have responded to human need, the course explores the specific areas of women in developing countries, street children and child labor, HIV in the developing world, and the plight of refugees. The role of international organizations, such as the World Bank, the International Monetary Fund, the agencies of the United Nations, and nongovernmental organizations (NGOs) in shaping international welfare policy and services will be examined.

SOWK 620: 3 s.h.**Advanced Practice with Groups and Families**

Course builds on the practice concepts learned during the generalist year, particularly in the SWK/SOWK 520: Micro/Mezzo Social Work Practice course. This course focuses on social work with groups and with families from a systems and ecological perspective. Emphasis is on strengths- and evidence-based family and group assessment and intervention strategies with diverse, complex families and groups. This course may be offered in multiple modalities. Prerequisite(s): SWK/SOWK 531 or SWK/SOWK 601 Corequisite(s): SWK/SOWK 630

SOWK 621: 3 s.h.**Advanced Macro Social Work Practices**

Course builds on the practice concepts learned during the generalist year, particularly in the SWK/SOWK 520: Micro/Mezzo Social Work Practice course. This course focuses on social work with groups and with families from a systems and ecological perspective. Emphasis is on strengths- and evidence-based family and group assessment and intervention strategies with diverse, complex families and groups. This course may be offered in multiple modalities. Prerequisite(s): SWK/SOWK 531 or SWK/SOWK 601 Corequisite(s): SWK/SOWK 630

SOWK 622: 3 s.h.**Military Social Work Practice**

This elective course provides students with specialized knowledge of working with military personnel, veterans and their families. Military social work is a unique service and intervention focus designed to help social workers enhance their overall knowledge and skill set in support of service women and men as well as their family and supportive care givers. Students will have opportunities to learn the history, theoretical underpinnings, and foundation and practical applications to specific client populations.

SOWK 623: 3 s.h.**Narrative Therapy**

This elective course provides students with specialized knowledge of narrative therapy in clinical social work practice. Narrative therapy is a unique intervention designed to help clients express and re-author their life stories. This course focuses on narrative therapeutic techniques applied to working with individuals, families, and groups. Students will have opportunities to learn the history, theoretical underpinnings, and foundations of narrative therapy as well as the clinical applications to specific client populations. Through interactive practice activities, including the use of case studies, film, and roleplays, students will develop an understanding of narrative therapy as an empowering approach in working with diverse populations.

SOWK 624: 3 s.h.**From Hobohemia to Housing First: A Critical Reflection of Homelessness in the United States**

Provides students with an historical overview of homelessness as a social problem in the United States. Students will examine the disparate conceptualizations of homelessness over time and the individual, community, and policy approaches intended to address it. Emphasis will be placed on contemporary issues in homelessness service delivery. This course may be offered in face/face, blended, or 100% online formats (with asynchronous and/or synchronous components). Prereq: SOWK/SWK 601 or SOWK/SWK 531. Offered periodically.

SOWK 625: 3 s.h.**Advanced Research Methods**

The focus of this course is on social work practice research paradigms, models and methods. Particular attention is given to the conduct of evaluation and assessments projects. This course also gives the student a more in-depth exploration of computer-assisted, qualitative and quantitative data analysis. This course may be offered in multiple modalities. Prereq: SWK/SOWK 525 or SWK/SOWK 601.

SOWK 626: 3 s.h.**Traumatic Bereavement**

This course provides a framework for critical analysis of the dynamics of complicated mourning and traumatic loss. Students will recognize the manifestations of grief that has become complicated, and assess capacities for healthy resolution at the micro, mezzo and macro levels. Students will develop intervention strategies that are supported by research as well as recognize and identify theoretical underpinnings. Prereq: SOWK 501 and admission to the MSW program, or permission of instructor.

SOWK 627: 3 s.h.**SOWK, Sport & Mental Health**

Explore the connection between mental health and sport, as well as the role of social workers in intervening with athletes of all levels to address mental health issues clients may encounter or have developed as a result of athletic participation. Additionally, the course will review, critique and address current interventions with athletes, and will seek to focus on new and emergent evidence-based modalities of treatment for athletes. Prereq: MSW program admission and SOWK 501 or permission of instructor.

SOWK 630: 3,5 s.h.**Advanced Field Practicum 1**

Provides students with practical experience (250 hours) in supervised direct-service activities across all client systems, from the individual's level to that of the community. This advanced field experience allows students to apply theory and skills acquired in the generalist concentration areas while simultaneously fostering the development of a professionally reflective, ethical, knowledgeable and self-evaluating social worker. The course also includes a seminar where students discuss and process the field experience with faculty. Prereq: SWK/SOWK 531 or SWK/SOWK 601. Coreq: SOWK 620.

SOWK 631: 3,4 s.h.**Advanced Field Practicum 2**

Provides students with practical experience (250 hours) in supervised direct-service activities across all client systems, from the individual's level to that of the community. This advanced field experience allows students to apply theory and skills acquired in the generalist concentration areas while simultaneously fostering the development of a professionally reflective, ethical, knowledgeable and self-evaluating social worker. The course also includes a seminar where students discuss and process the field experience with faculty. Prereq: SWK/SOWK 531 or SWK/SOWK 601. Coreq: SOWK 620.

SOWK 640: 3 s.h.**Sp Topics:**

This course provides the opportunity for a range of topics to explore issues and concerns for the social work profession. Coreq or Prereq: SOWK 601 or SOWK 531.

SOWK 641: 3 s.h.**Sp Topics:**

This course provides the opportunity for a range of topics to explore issues and concerns for the social work profession. Coreq or Prereq: SOWK 601 or SOWK 531.

SOWK 642: 3 s.h.**Sp Topics:**

This course provides the opportunity for a range of topics to explore issues and concerns for the social work profession. Coreq or Prereq: SOWK 601 or SOWK 531.

SOWK 643: 3 s.h.**Sp Topics:**

This course provides the opportunity for a range of topics to explore issues and concerns for the social work profession. Coreq or Prereq: SOWK 601 or SOWK 531.

SOWK 679: 3 s.h.**Experimental**

Experimental

SOWK 691: 1-3 s.h.**Independent Study**

An in-depth approach to an individually structured problem. Registration by permission.

SOWK 700: 3 s.h.**Social Work Leadership I**

This is the first of a sequence of two courses on advanced leadership and management for Doctor of Social Work students. Students will glean a theoretical orientation to the study of organizations and leadership within organizations. This examination of theories will reflect the values of the social work profession and their application to social service systems, structures, and processes. Also explored will be theories of organizational change, organizational challenges, and organizational effectiveness. Within the context of social service organizations, leadership approaches and theories are also examined.

SOWK 701: 3 s.h.**Social Work Leadership II**

This is the second course in the advanced leadership and management sequence. The focus of this course is on development of knowledge and skills for social work managers within the public and private social service sector. Additional attention will be given to leading in times of fiscal constraint, political changes, and workforce challenges.

SOWK 704: 3 s.h.**Social Work Teacher-Scholar I**

This is the first of a sequence of two courses on social work teaching and scholarship for Doctor of Social Work students. The course will enable the students to critically examine seminal and contemporary works in pedagogy. The connection of these theories to social work teaching and learning will be a central component of this course, including particular emphasis on the historical evolution of social work education. The course provides students with an opportunity to explore seminal works from a historical perspective and critically evaluate contemporary theories of teaching and learning in social work. It is required preparation for the second course in the sequence in which students develop a unique and personal conceptual framework for their own teaching.

SOWK 705: 3 s.h.**Social Work Teacher-Scholar II**

This is the second in a sequence of two courses about social work teaching and scholarship for Doctor of Social Work students. The course provides students with an opportunity to critically evaluate theories of teaching and learning, particularly in contemporary settings in social work. Students will craft a conceptual framework to guide their own career as instructors in a variety of social work settings, including undergraduate and graduate professional social work education. They will practice course planning and delivery along with program development and student/course/program assessment with attention to accreditation requirements. In addition, they will develop understanding of the roles of the social work teacher-scholar in academe and other settings.

SOWK 710: 3 s.h.**Research Methodology****SOWK 715: 3 s.h.****Multivariate Stat Analysis**

Students will be able to apply univariate, bivariate, and multivariate statistics, analysis of variance and simple linear regression to the analysis of a social science data set. They will learn how to choose appropriate statistical analyses that answer research questions and hypotheses, conduct these analyses using SPSS, interpret their findings, and communicate their results clearly and effectively. Reserved for students in the DSW program.

SOWK 720: 3 s.h.**Leadership/Teaching Praxis I**

Experiential two semester course designed to provide students with an opportunity to demonstrate mastery of the course content from the program's first year's courses. Students will participate in supervisory leadership and/or teaching activities that provide experiential learning and application and integration of theory and skills acquired in earlier coursework. Weekly meetings are a required component of this course and the meetings will be facilitated by the faculty mentor to instruct, guide, and assess student's progress related to the leadership and/or teaching praxis.

SOWK 721: 3 s.h.**Leadership/Teaching Praxis II**

Experiential two semester course designed to provide students with an opportunity to demonstrate mastery of the course content from the program's first year's courses. Students will participate in supervisory leadership and/or teaching activities that provide experiential learning and application and integration of theory and skills acquired in earlier coursework. Weekly meetings are a required component of this course and the meetings will be facilitated by the faculty mentor to instruct, guide, and assess student's progress related to the leadership and/or teaching praxis.

SOWK 725: 3 s.h.**Intervention Research**

Advanced research course introduces students to the five steps of intervention development, testing, and dissemination. Students will be given the opportunity to practice elements of these stages to master the strategies of implementing, documenting, and evaluating interventions that respond to social problems affecting systems of all sizes (e.g., individual, family, group, community).

SOWK 730: 3 s.h.**Qualitative Analysis****SOWK 774: 3 s.h.****Comprehensive Seminar**

Students will engage in a collaborative learning experience in which they assess whether as doctoral students they have acquired the knowledge and skills necessary for proceeding with the development of a Doctoral Dissertation. Utilizing a phenomenon of interest, students will demonstrate their ability to conceptualize a clear and compelling research topic by organizing, presenting, and critiquing both theoretical and empirical knowledge related to the phenomenon. Further, students will identify areas needing further exploration as well as possible research methods to conduct the proposed research. The Preliminary Paper must demonstrate that the student has acquired a sufficiently broad understanding of the phenomenon of interest and indicate that the student is prepared to add to knowledge in the field through an independent in-depth study of a topic relevant to best practices in social work related to leadership, teaching, or both. Students will orally defend their comprehensive paper at Residency. The defense will include an overview of the phenomenon as well as a summary of the research question that could be employed should students continue with the same topic for their dissertation.

SOWK 775: 3 s.h.**Dissertation Seminar**

Students will engage in a collaborative learning experience in which they explore different ways of knowing in social sciences. They will become familiar with a variety of theoretical perspectives and will practice integrating those theories with their professional social work practice as they work toward formulating a research question and identifying a relevant theoretical perspective from which to examine it in the upcoming dissertation. Ethical considerations in research will be examined, and students will become familiar with their institution's IRB process. Students will consider deeply the relationship between their education and their future roles as leaders and educators.

SOWK 776: 1-3 s.h.**Dissertation I**

Over two semesters, students will work in close consultation with a faculty member to build upon the research question crafted in the Dissertation Seminar. They will gain institutional approval to conduct their independent research and will conduct the research under the supervision of the faculty member. A focus will be placed on the completion of a traditional dissertation in the context of the development of applied knowledge that will be relevant to the social work profession; as such, the student will develop components of the dissertation that may be published or presented in refereed venues. Pre-requisite: SOWK/SWK 775: Dissertation Seminar

SOWK 777: 1-3 s.h.**Dissertation II**

Over two semesters, students will work in close consultation with a faculty member to build upon the research question crafted in the Dissertation Seminar. They will gain institutional approval to conduct their independent research and will conduct the research under the supervision of the faculty member. A focus will be placed on the completion of a traditional dissertation in the context of the development of applied knowledge that will be relevant to the social work profession; as such, the student will develop components of the dissertation that may be published or presented in refereed venues. Pre-requisite: SOWK/SWK 776: Dissertation I

Expressive Arts Post-Baccalaureate Certificate

This certificate is for students enrolled in or who have completed a master's degree in one of the following disciplines:

- Social work
- Psychology (all concentrations)
- Educational psychology
- Counseling
- Marriage and family therapy
- Fine arts, or related mental-health discipline

Students enrolled in the certificate program will have previously completed coursework in psychopathology, ethics/professional practice, theory, and child and adult development. The Expressive Arts Certificate will provide students with the required knowledge and skills around the use of the arts (e.g., music, theater, art, dance/movement, storytelling) to apply to their practice with various groups and at all levels (micro, mezzo, macro) of practice. Additionally, upon completion of the certificate and then a subsequent 200-hour (social work, psychology, educational psychology, marriage and family counseling, related mental-health discipline) or 500-hour (fine arts or another discipline) supervised

internship in chosen art modality, the individual will be eligible to apply as a Registered Expressive Arts Therapist and/or Registered Expressive Arts Consultant through the International Expressive Arts Therapy Association.

Coordinator: Dr. Karen Rice, karen.rice@millersville.edu

Trauma-informed & Expressive Arts - Post-Bacc Cert

Code	Title	Hours
Emergency Mental Health and Trauma		3
SOWK 607	Emergency Mentl Hlth and Trauma	
Art Therapy and Social Work		3
SOWK 609	Introduction to Art Therapy	
Qualitative Research and Art-Based Research Methods or Qualitative Analysis - Choose 1 of the following:		3
ART 602	Qualitve & Arts-Based Rsrch Mth	
SOWK 730	Qualitative Analysis	
Expressive Arts Electives - Choose 2 of the following:		6
ART 584	Intro Studio Art:	
ART 585	Intro Studio Art:	
ENGL 641	Poetry	
ENGL 642	Drama	
ENGL 643	Fiction	
ENGL 645	Short Story:Hist,Devel,Genres	
ENGL 678	The Teacher as Writer	
WRIT 682	Genres in Nonfiction Writing	
SOWK 640	Sp Topics:	
SOWK 641	Sp Topics:	
SOWK 642	Sp Topics:	
Total Hours		15

Home and School Visitor Post-Baccalaureate Certificate

In the Commonwealth of Pennsylvania, the Home and School Visitor is recognized and required by school districts. The School of Social Work at Millersville University is approved by the Pennsylvania Department of Education (PDE) to offer the Home School Visitor Certification. The Home and School Visitor certification is designed to provide students with the required knowledge and skills to work collaboratively with interdisciplinary client systems to meet the needs of K12 students to foster academic success.

Upon completion of the required coursework, the Certification Office at Millersville University will assist eligible candidates with the Pennsylvania certification process and provide recommendations for Home and School visitor certification.

Admissions

Prospective students seeking the HSV Certification may start at any time. Student must first submit a formal application to the Office of Graduate Studies and Adult Learning at www.millersville.edu/admissions/graduate/admissions/apply/post-baccalaureate-certification.php

The HSV Certification program requires field placement in a school setting. As the Pennsylvania Department of Education (PDE) requires current clearances before starting field experience, students must also

apply for three clearances: Pennsylvania Child Abuse History Clearance, Criminal Records Check (FBI Fingerprint background check), and Federal Criminal History Record Information (CHRI).

FLEXIBLE PROGRAM OPTIONS

Applicants can earn their HSV Certification while enrolled in the MSW program, part or full time. Applicants who hold an MSW are able to apply to have prior credits counted toward the HSV Certification. Non-MSW applicants are able to apply to earn HSV Certification

Coordinator: Dr. Leonora Foels, leonora.foels@millersville.edu

Home and School Visitor Certificate

Code	Title	Hours
If you have courses at the bottom of your audit under 'Other Electives' or 'Not Counted Toward Degree', they may be excluded due to the date of your admission to the HSV program. To have these courses evaluated for inclusion in your program You will need to work with the Social Work admissions committee to determine your eligible exemptions per your prior coursework.		
SOWK 606	School Social Work	3
SOWK 611	Children and Youth At-Risk	3
Advanced Field Practicum I (in a school setting) - Choose 3 hours from:		3
SOWK 630	Advanced Field Practicum 1	
Advanced Field Practicum II (in a school setting) - Choose 3 hours from:		3
SOWK 631	Advanced Field Practicum 2	
Introduction to Exceptional Education		3
SPED 600	Orientation to Special Education	
EDLD 620	School Law and Public Policy	3
Diagnostic and Assessment Strategies for Students with Disabilities		3
SPED 680		
Second Language Acquisition: Theory, Programs and Assessment or Assessment, Policies, and Practices in Teaching English Language Learners - Choose 1 of the following:		3
EDUC 561	Second Language Acquisition: Theory, Programs & Assessment	
EDUC 564	Assessment, Policies & Practice in Teaching of English Language Learners	
Total Hours		24

School Social Work Post-Master's Certification

The School of Social Work at Millersville University is approved by the Pennsylvania Department of Education (PDE) to offer the Post-Master's School Social Work certification. The School Social Work certification is designed to prepare social work students with the required knowledge, skills, and expertise to "support the academic, career and personal-social development needs" of diverse, vulnerable, and at-risk PreK-12 students and their families.

Governor Wolf's Reach Out PA initiative (2020) specifically identified that "School social workers play a unique role in addressing mental health by providing holistic services and supports in the school setting, such as crisis management, mental-health treatment, and engaging the school, family and community in enhancing existing student-support structures

that ensure the success of all students" (para. 10). In the Commonwealth of Pennsylvania, the School Social Work certification is required by school districts.

Upon completion of the required coursework, the Certification Office at Millersville University will assist eligible candidates with the Pennsylvania certification process and provide recommendations for the Post Master's School Social Work certification.

SCHOOL SOCIAL WORK CERTIFICATION

Requirements include successful completion of: • MSW plus required program courses • Field placement (internship) in a school setting • Pennsylvania certification process and recommendations for School Social Work through the MU Certification Office at <https://www.millersville.edu/cert/index.php> (<https://www.millersville.edu/cert/>)

The School Social Work certification program requires field placement in a school setting. As the Pennsylvania Department of Education (PDE) requires current clearances before starting field experience, students must also apply for three clearances: Department of Human Services Child Abuse History Clearance, Criminal Records Check (FBI Fingerprint background check), and Federal Criminal History Record Information (CHRI)

Flexible Program Options

Applicants can earn their School Social Work certification while enrolled in the MSW program, part-time or full-time. Non MSW applicants are ineligible to apply to earn School Social Work certification. Admissions Prospective student must submit a formal application to the Office of Graduate Studies and Adult Learning at www.millersville.edu/admissions/graduate/admissions/apply/post-baccalaureatecertification.php. At time of application, students must include a resume detailing relevant experiences in a school setting, a well-written and focused goal statement, and ensure that references provide sufficient information about their relationship with the applicant, and evaluation of your experiences related to school social work practice.

Contact Information

Leonora Foels School Social Work Certification Program Coordinator
Stayer Hall, Room 315 717-871-4732 Leonora.foels@millersville.edu

School Social Work Certification

Code	Title	Hours
If you have courses at the bottom of your audit under 'Other Electives' or 'Not Counted Toward Degree', they may be excluded due to the date of your admission to the SSW program. To have these courses evaluated for inclusion in your program You will need to work with the Social Work admissions committee to determine your eligible exemptions per your prior coursework.		
SOWK 606	School Social Work	3
Advanced Field Practicum I (in a school setting) - Choose 3 hours from:		
SOWK 630	Advanced Field Practicum 1	3
Advanced Field Practicum II (in a school setting) - Choose 3 hours from:		
SOWK 631	Advanced Field Practicum 2	3
EDLD 620	School Law and Public Policy	3
Diagnostic and Assessment Strategies for Students with Disabilities SPED 680		

Second Language Acquisition: Theory, Programs and Assessment or Assessment, Policies and Practices in Teaching English Language Learners - Choose 1 of the following:	3
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EDUC 561	Second Language Acquisition: Theory, Programs & Assessment
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EDUC 564	Assessment, Policies & Practice in Teaching of English Language Learners
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Total Hours	18
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Social Work, D.S.W.

The Kutztown University-Millersville University (KU-MU) collaborative Doctor of Social Work focusing on leadership and education prepares graduates for innovation and leadership in social work theory, practice and education.

The program is ideal for social workers currently employed in professional positions. It is a part-time, online program with an intensive weekend residency once each semester.

Mission

The KU-MU DSW program will provide advanced preparation for practice and teaching. Graduates will create, implement and evaluate social work interventions as well as teach.

Major in Social Work (DSW)

Code	Title	Hours
YEAR I - REQUIRED COURSES		
SOWK 700	Social Work Leadership I	3
SOWK 704	Social Work Teacher-Scholar I	3
SOWK 701	Social Work Leadership II	3
SOWK 705	Social Work Teacher-Scholar II	3
SOWK 710	Research Methodology	3
SOWK 720	Leadership/Teaching Praxis I	3
YEAR II - REQUIRED COURSES		
SOWK 730	Qualitative Analysis	3
SOWK 715	Multivariate Stat Analysis	3
SOWK 721	Leadership/Teaching Praxis II	3
SOWK 725	Intervention Research	3
SOWK 774	Comprehensive Seminar	3
SOWK 775	Dissertation Seminar	3
YEAR III - REQUIRED COURSES		
Doctoral Dissertation I		3
SOWK 776	Dissertation I	
Doctoral Dissertation II		3
SOWK 777	Dissertation II	
ELECTIVES		
2 Electives should be selected and taken during Year III. Please work with your advisor to select appropriate electives		
Total Hours		42

Goals

1. Prepare graduates for advanced leadership in social work.
2. Prepare graduates to conduct research for practice and policy development.
3. Prepare graduates to teach in higher education.

Social Work, M.S.W.

Millersville and Shippensburg universities are jointly offering a Master of Social Work (MSW) degree program. It is designed for students who want to either further their education in social work or join the social work profession. The program was developed to support both the full-time student and the working professional. State-of-the-art technology permits students to acquire social work knowledge, skills, and values through multiple educational methods, including traditional campus classes, part-time online options, and web-based activities. Because this is a joint program, students benefit from the quality faculty and resources of both universities.

All required courses are offered in the late afternoon or evening. Elective courses will primarily be offered in the evening and occasionally on Saturdays. Online course may be synchronously or asynchronously.

Dual Degrees

MSW + MSEM

A dual-degree option is available for students in the MSW program who wish to also obtain a Master of Social Work and Master of Science in Emergency Management. Students seeking a dual degree in MSW/MSEM will need to complete the full curriculum in the MSW program (which is 36 or 60 credits). Students will learn emerging trends in emergency prevention, response and recovery; gain knowledge and skills related to emergency-management response; and develop ways to address secondary trauma individuals may experience after emergencies.

Learning Objectives

- Provide an understanding of the social nature of natural hazards and disasters.
- Give students knowledge of the social factors affecting disaster mitigation, preparedness, response and recovery, and 24 additional unique credits within the MSEM program.
- Reveal unfounded myths about human behavior in disasters.
- Increase awareness of hazards and disasters around the world and the unequal social consequences stemming from disasters.
- Provide an awareness of opportunities for policy adjustments and applications of research findings.
- Highlight social work values and ethics in examining the consequences of disasters as they relate to race, ethnicity, national origin, class, gender, physical or mental disability, mental illness and age.

MSW + MEd in Sports Management

A dual-degree option in MSW/M.Ed. in sport management will need to complete the full curriculum in the MSW program (which is 36 or 60 credits). Students will learn emerging trends in working with athletes of all levels, in clinical and counseling settings; gain knowledge and skills related to athletic program and/or venue management; and develop methodologies to work with athletes in a number of areas— for example, career counseling, life skills development, substance-abuse prevention, advocacy, recruitment and transitioning to a post-athletic career.

Learning Objectives

- Provide an understanding of the need for social workers in athletic settings.
- Give students knowledge of the social factors affecting athletes of all levels, develop skills to administer and develop athletic programs or facilities, and 24 additional unique credits within the M.Ed. in sport management program.
- Discuss current perceptions of student-athletes.
- Increase awareness of the issues regarding athletes and sport management.
- Provide an awareness of opportunities for policy adjustments and applications of research findings.
- Highlight social work values and ethics in examining the issues of professional and amateur athletes as they relate to race, ethnicity, national origin, class, gender, physical or mental disability, mental illness and age. Students will have the opportunity to complete three internships while in the program, two with a social work focus and one with a sport management focus.

Certificates

MSW + School social Worker certification

The School Social Work certification is designed to prepare social work students with the required knowledge, skills, and expertise to “support the academic, career and personal-social development needs” of diverse, vulnerable, and at-risk PreK-12 students and their families. In the Commonwealth of Pennsylvania, the School Social Work certification is required by school districts.

MSW + Home and School Visitor

The Home and School Visitor Certification is designed to provide students with the required knowledge and skills to work collaboratively in a school setting at all systems levels.

MSW + Expressive Arts

The Expressive Arts certificate will provide students with the required knowledge and skills around the use of the arts (e.g., music, theater, art, dance/movement, storytelling) to apply to their practice with various groups and at all levels of practice. Additionally, upon completion of the certificate and then a subsequent 200-hour internship, students will be eligible to apply as a Registered Expressive Arts Therapist.

MSW + Advanced Children, Youth, and Families

The Advanced Children, Youth, and Families Certificate is for students enrolled in or who have completed a master's degree in Social Work to provide culturally competent services to vulnerable children and families through a range of public and private agencies at various levels of practice. The focused curriculum includes coursework on clinical skills to work effectively with children and their families to promote positive outcomes, and macro skills and strategies to develop productive change in service delivery systems.

Mission

The mission of the joint Millersville-Shippensburg MSW program is to provide accessible social work graduate education in the South Central region of Pennsylvania. We prepare students to be effective advanced

generalist practitioners committed to the purpose and values of the social work profession.

Goals

1. Prepare students for competent advanced generalist practice through the acquisition and demonstration of social work practice behaviors consistent with the Council on Social Work Education (CSWE) educational policy and accreditation standards.
2. Prepare students with the specialized knowledge and skills for social work practice with client systems to resolve problems and facilitate change within the boundaries of ethical practice, and with attention to the profession's commitment to social justice and human rights.
3. Encourage students' commitment to continued professional development and lifelong learning by providing opportunities for community engagement and real-life learning experiences.

Accreditation

The Millersville-Shippensburg MSW program is accredited by the Council on Social Work Education (CSWE). The program has continuously been accredited since its inception in 2006. The accreditation validates that the program meets national standards for social work education as determined by experts in the field. Practitioners must have graduated from a CSWE-accredited social work MSW program to be eligible to apply for licensure in Pennsylvania.

Admission Classifications

The program is designed both for students who have no previous social work education and for those who want to build upon their baccalaureate social work education. Students will be admitted full- or part-time. Students have the option to attend in-person or online.

Applicants may apply for regular-standing admission or for advanced-standing admission. Regular-standing admission is for students who completed a baccalaureate degree with a major from other than a CSWE-accredited social work program, and for students who graduated from a CSWE-accredited social work program but do not meet the GPA requirements for advanced standing. Applicants may apply for advanced standing admission if they have graduated from a CSWE-accredited social work program and meet the GPA requirements as described in the admission guidelines.

Admission Guidelines

Candidates may choose to apply through either Millersville or Shippensburg University. Applicants for regular-standing admission must have a minimum cumulative grade-point average of 2.8 on a 4.0 scale from a regionally accredited undergraduate institution. In exceptional cases, applicants who lack the required grade-point average should contact the MSW Program Director to discuss their options.

Applicants for advanced-standing admission must have earned a baccalaureate degree within the last eight years from a CSWE-accredited social work program with an overall GPA of 2.8 and a major GPA of 3.25 or higher on a 4.0 scale.

Students who graduated with a baccalaureate degree from a CSWE-accredited social work program who are not eligible for advanced standing may be eligible for exemptions from first-year foundation courses other than practice and field instruction in which they have earned a grade of B or higher within the past eight years. Exemptions will reduce the total number of credits a student must earn to graduate. The

Admissions Committee will send a letter notifying the applicant of the exemptions.

Students who do not otherwise qualify for advanced-standing status may be exempted from certain foundation courses under strict guidelines as outlined in this section. Students may not be exempt from practice or field placement coursework. With the exception of practice and field instruction courses, students who earned a grade of B or higher within the past eight years in courses that were part of a CSWE-accredited social work program are eligible for exemptions from first-year foundation courses with similar content.

Applicants must evidence a combination of professional and personal experiences, qualities and values that are considered essential for the practice of social work. A current résumé is required. Three professional references are required, with a minimum of one from faculty and one from a current or recent agency employer or supervisor. Applicants for advanced standing are required to submit an additional reference from the department chair of their undergraduate program. Applicants will complete a written personal statement. Application forms are available on the graduate studies website, www.millersville.edu/apply/graduate (<http://www.millersville.edu/apply/graduate/>). The program may request a personal interview or additional information about an applicant when necessary to make a fully informed admissions decision.

Persons who have some criminal records may not be eligible to work in some human service fields. Applicants with criminal records should contact the MSW program director for additional information.

Students may receive or transfer credit for up to nine credit hours earned at other regionally accredited institutions prior to admission. Graduate credits earned more than five years prior to admission do not qualify for transfer. Students may only transfer credits if they are in good standing in those schools. Courses must be listed on an official transcript with a B or higher. Condensed one-week graduate courses do not qualify for transfer.

With advance permission of the faculty advisor, program director and Dean of graduate studies and research, and as part of a planned program, a student may transfer credits from other graduate programs at Millersville University or Shippensburg University. Forms for the approval process of transfer of credits are available at www.millersville.edu/gps/studentlife (<http://www.millersville.edu/gps/studentlife/>). The program does not grant academic credit for life or work experience.

Degree Requirements

Students with regular-standing admission must complete 60 credits of graduate study, including 39 credit hours of required coursework, 12 credit hours of field practicum and 9 credit hours of electives. BSW graduates with regular admission status may receive exemption for some coursework, as per admission guidelines.

Students with advanced-standing admission must complete 36 credits of graduate study, including 18 credit hours of required coursework, including a summer "bridge" course, 6 credit hours of field practicum and 12 credit hours of electives.

All required courses must be taken in sequence. The 60-credit in-person program can be completed in two years full-time (four courses a semester) or four years part-time (two courses a semester) or in 3 years with either Generalization of Foundation Year completed on a full-time basis. The online 60-credit program can be completed in three or four years. The 36-credit in-person program can be completed in one year full-time or two years part-time. The online 36-credit program, can be

completed in two years. Both programs are year-round, with each new cohort starting in the summer term.

Degree Candidacy

A formal admission to the degree candidacy process takes place after a minimum of 12 credits have been completed. Millersville-Shippensburg MSW faculty members evaluate students to determine if they have the potential for completing the requirements of the social work program. Qualifications are based on academic performance in line with University standards and demonstrated ethical behavior, values and commitment to social work as a career. The social work faculty has the right to dismiss from the program at any time students found not qualified for social work practice.

Major in Social Work (MSW)

Code	Title	Hours
FOUNDATION YEAR		
SOWK 501	Principles and Philosophies of Social Work	3
SOWK 505	Understanding Social Work Practices w Diverse Pops	3
SOWK 510	Human Behavior in the Social Environment I	3
SOWK 511	Human Behavior in the Social Environment II	3
SOWK 515	Social Welfare Policy	3
SOWK 520	Micro/Mezzo Social Work Practices	3
SOWK 521	Macro Social Work Practice	3
SOWK 525	Research Methods	3
SOWK 530	Field Practicum 1	3
SOWK 531	Field Practicum 2	3
SPECIALIZATION YEAR REQUIRED COURSES		
SOWK 610	Advanced Human Behavior in the Social Environment	3
SOWK 615	Advanced Social Welfare Policy	3
SOWK 620	Advanced Practice with Groups and Families	3
SOWK 621	Advanced Macro Social Work Practices	3
SOWK 625	Advanced Research Methods	3
Advanced Field Practicum I - Choose 3 hours from:		3
SOWK 630	Advanced Field Practicum 1	
Advanced Field Practicum II - Choose 3 hours from:		3
SOWK 631	Advanced Field Practicum 2	
Specialization Year Electives		
undefined - Choose 3 classes from:		
EMGT 607	Emergency Mental Health and Trauma	
SOWK 602	Behavioral Health	
SOWK 603	Gender Issues	
SOWK 604	Health Care	
SOWK 605	Child Welfare	
SOWK 606	School Social Work	
SOWK 607	Emergency Mentl Hlth and Trauma	
SOWK 608	Administration and Supervision	
SOWK 609	Introduction to Art Therapy	
SOWK 611	Children and Youth At-Risk	
SOWK 612	Social Work and the Law	
SOWK 613	Mediation in SOWK Practice	
SOWK 614	Survey Devel & Measurement	
SOWK 616	Leadership Dynamics in SW Prac	

SOWK 617	Addictions in Field of SOWK
SOWK 618	Human Rights in Social Work
SOWK 619	Global Perspectives in SOWK
SOWK 622	Military Social Work Practice
SOWK 623	Narrative Therapy
SOWK 624	From Hobohemia to Housing First: A Critical Reflection of Homelessness in the United States
Any SOWK 640-644 course(s)	
SOWK 691	Independent Study

Total Hours 51

Special Education

The department of special education offers a Master of Education in Special Education, post-baccalaureate PK-12 certification, and a special education post-master's supervisory program.

The Programs

- Special Education Post-Baccalaureate K-12 Certification (p. 451)
- Special Education Post-Master's Supervisory Certification (p. 452)
- Special Education, M.Ed. (p. 452)

The Faculty

Faculty File needs to be updated with Special Education Department faculty per newly created department.

The Courses

SPED 001: 15 s.h.

SPED Professional Bloc 2

SPED Professional Bloc 2

SPED 101: 3 s.h.

Orientation to Special Educ

This introductory course is designed to prepare future special educators with the knowledge base for the identification, placement and instruction of learners with disabilities who are eligible to receive special education services across the continuum of educational environments. Included are historical considerations, educational and developmental needs of individuals with disabilities, special education programs, services, resources, and materials. In addition, practical exposure to individuals with disabilities will be emphasized.

SPED 179: 3 s.h.

Experimental

Experimental

SPED 237: 3 s.h.**Applied Foundations of Contemporary Special Education**

This course identifies the complex sociocultural history that has brought us to where we are in special education practice today. It presents the contemporary and historical influences of the American school system and how special education is integrated into the modern classroom. The overrepresentation of economically disadvantaged, and culturally and linguistically diverse populations in special education is explored through careful consideration of cultural collaboration, current sociological variables and analysis of causes and prevention strategies. Individual learning differences and the development of academic and functional performance needs of students with disabilities are considered historically, legally, educationally, culturally and socially. Prereq: requires submission of satisfactory FBI, Act 34/151 clearances. Offered in fall, spring. Coreq: must be taken simultaneously with EDFN 211, 241, ERCH 225.

SPED 279: 3 s.h.**Experimental**

Experimental

SPED 300: 3-12 s.h.**Co-Op Ed Experience in Sped**

Co-Op Ed Experience in Sped

SPED 311: 3 s.h.**Assessment for Designing & Implementing Instruction (W)**

This course enables teacher candidates to develop competencies for assessing students in an inclusive classroom setting, design instruction and make instructional decisions to enhance students' learning. Teacher candidates learn how to assess, analyze and interpret data from formal (standardized) and informal (traditional and alternative) testing sources and measurement. Teacher candidates learn how to interpret reports as relevant to students from diverse learning backgrounds and use these interpretive results along with behavioral observation, task analysis and other types of measurement to design instruction. Offered in fall, spring, summer. Prereq: Act 34, 151, 114 clearances and admission to Advanced Professional Studies.

SPED 311H: 3 s.h.**Hon: Design/Implement Instruc (W)****SPED 312: 3 s.h.****Disabl in Inclusive Settings**

Prepares educators to effectively teach children with disabilities in inclusive classrooms by incorporating theory, identification, services, instruction and legal aspects of special education. Course participants will learn to plan, adapt and implement effective instruction and assessment to facilitate academic achievement for learners with mild and moderate disabilities in an inclusive setting. Offered in fall, spring. Prereq: ERCH 110 and Foundations Bloc 1 (EDFN 211, 241, EDUC 220). Course may be taken as a corequisite with Foundations Bloc 1.

SPED 321: 3 s.h.**Serving Individuals in Inclusive Settings (W)**

This course prepares teacher candidates to effectively teach students with severe and multiple disabilities within an inclusive educational system. By incorporating theory with aspects for identification, specialized support services, instruction and relevant special education law, teacher candidates become knowledgeable of their responsibilities as teachers of students with severe and multiple disabilities. Teacher candidates learn to differentiate and individualize instruction for the developmental and chronological requirements of their students. Teacher candidates become practiced in referencing alternate learning standards and general education curricula to facilitate the achievement of their students with severe and multiple disabilities in a variety of learning environments. Offered in spring. Prereq: ENGL 110; Act 34, 151, 114 clearances and admission to Advanced Professional Studies (APS). Coreq: ERCH 421, SPED 341.

SPED 328: 3 s.h.**Assessment in Special Educatn**

The administration, scoring and interpretation of assessment devices typically used in psychometric evaluations are stressed. Critical evaluation of such devices in terms of reliability, validity and norming groups is also developed. The integration of the interpretive results of psychometric evaluation with behavioral observation, task analysis and other assessments developed in prerequisite courses is demonstrated. Offered in fall, spring.

SPED 330: 3 s.h.**Discrimination and Oppression of People with Disabilities (D, P)**

Examines social discrimination through consideration of the policies and practices of societies. Creates an understanding of the social, political and cultural, rather than the physical or psychological, determinants of the experience of disability. Disentangles impairments from the myths, ideology and stigma that influence social interaction and social policy. Through course content and activities, students will challenge the idea that the economic and social statuses and the assigned roles of people with disabilities are the inevitable outcomes of their condition. Offered in fall, spring, summer. Prereq: COMM 100, ENGL 110 and junior status.

SPED 330H: 3 s.h.**H:Discrim/Oppress People/Disab (D, P)****SPED 331: 3 s.h.****Positive Learning Environments for all Students**

Students will develop the ability to effectively analyze and design inclusive educational environments to optimize the achievement of every student, and will receive the knowledge and skills to modify their teaching methods to motivate and support positive social skills in diverse students. Through the use of appropriate assessments and data collection techniques for individual student behaviors, students will develop the ability to conduct functional behavior assessments and apply behavior-intervention plans and positive techniques as needed using the Response to Intervention framework. Offered in fall, spring. Required submission of satisfactory FBI, Act 34/151 clearances; admission to Advanced Professional Studies (APS).

SPED 331H: 3 s.h.**Hon: Positive Lrng Env for All****SPED 337H: 3 s.h.****Hon: Gender and the Law (G3)**

SPED 341: 3 s.h.**Early Intervention to Kindergarten**

This course examines the implications of federal mandates for providing educational and supportive services for infants/toddlers/preschoolers with disabilities and their families. The teacher candidates gain knowledge in interpreting data from formal and informal sources to be utilized in developing Individualized Family Service Plans (IFSP). The teacher candidates use case study and field experience data to recommend appropriate school-based programs for young children with disabilities. They also implement effective teaching strategies to meet the family, academic, social, emotional and behavioral needs of young children with disabilities in inclusionary environments. These strategies will be applied in field placements during the semester. Offered in spring. Prereq: EDFN 211, 241, ERCH 225 or EDUC 220; SPED 237; Act 34, 151, 114 clearances and admission to Advanced Professional Studies (APS). Coreq: ERCH 421, SPED 321.

SPED 346: 3 s.h.**Secondary Students w/Disabilities in Inclusive Settings**

This course is designated to prepare secondary education majors to effectively teach students with disabilities in inclusive classrooms. Participants will learn legal mandates, secondary general educators' role in the special education process, and the academic and social implications of inclusion. Participants also will learn to facilitate academic achievement for students with mild and moderate disabilities in inclusive secondary education by planning, adapting and implementing effective instruction. Offered in fall, spring. Prereq: required submission of satisfactory FBI, Act 34/151 clearances; EDFN 211, 241. Cross-listed with SPED 546, credit may not be received for both.

SPED 351: 3 s.h.**Managing Challenging Behaviors**

Provides various strategies to support students with challenging behaviors. Candidates will conduct Functional Behavior Assessment and prepare Behavior Intervention Plan focusing on decrease negative behaviors while increasing positive behaviors. Candidates will develop their ability to effectively analyze behaviors and design inclusive educational and community environments to optimize the achievement of every student. Candidates will demonstrate the knowledge and skills to modify teaching methods and learning environments to promote positive social skills in students with disabilities. Admission to Advanced Professional Studies required.

SPED 361: 3 s.h.**Formal Assessment for Students with Disabilities**

Designed to prepare Special Education teacher candidates to effectively develop competencies for assessing PK-12 students with disabilities according to IDEA (Individuals with Disabilities Education Act). Teacher candidates will acquire knowledge for administration, scoring, and interpretation of formal assessment devices typically used in educational evaluations. Furthermore, teacher candidates will learn how to properly select formal assessment tools in terms of reliability, validity and norm populations and learn about integrated systems of assessment and data collection for identification of students struggling to meet academic and behavioral expectations. Teacher candidates will learn the role of educational evaluations in developing Individual Education Programs (IEP) for students in need of support in the general education curriculum. Teacher candidates will learn professional ways to collaborate with parents and include them as equal partners in the assessment process.

SPED 400: 3-12 s.h.**Co-Op Ed Experience in Sped**

Co-Op Ed Experience in Sped

SPED 411: 3 s.h.**Assmt/Devl of Indiv Ed Prgram**

This course provides teacher candidates with the necessary skills to administer, score and interpret a range of formal and informal educational assessments typically used with students with severe and multiple disabilities. Teacher candidates develop their ability to apply variables such as reliability, validity and norm references to select appropriate assessment tools for their students and to develop informal evaluations as needed. Teacher candidates apply their knowledge of required procedures, with students' assessment results, to construct appropriate Individual Education Program, (IEP) with multidisciplinary team members and use those IEPs to plan instruction. Prereq: Act 34, 151, 114 clearances, admission to Advanced Professional Studies and Professional Bloc I courses of ERCH 421; SPED 321, 341. Coreq: SPED 441, 451, 453, 454. Offered in spring.

SPED 412: 3 s.h.**Assessmnt for Mild/Mod Disabl**

This course prepares teacher candidates to develop competencies for administration, scoring and interpretation of formal assessment devices typically used in educational evaluations. Teacher candidates acquire knowledge of the process of how to select formal assessment tools in terms of reliability, validity and norm populations, and learn about integrated systems of assessment and data collection for identification of students struggling to meet academic and behavioral expectations. Teacher candidates will learn the role of educational evaluations in developing Individual Education Programs (IEP) for students in need of support in the general education curriculum. Teacher candidates learn how to collaborate with parents and include them as equal partners in the assessment process. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies; Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand II: SPED 442, SPED 452, SPED 453, SPED 454. Offered in fall, spring.

SPED 432: 3 s.h.**Curr & Mthds Mild/Moder Disabl**

Designed to develop competencies to identify curriculum content and implement effective methodologies needed to direct the education program for students with disabilities in the secondary classroom setting. Includes approx. 150 hrs field experience. Offered in fall, spring. Prereq: Admission to APS

SPED 441: 3 s.h.**Support for Specialized Curriculum**

This course provides teacher candidates with research-based methods and special techniques to effectively instruct students with severe/profound and multiple disabilities within a variety of educational settings. Teacher candidates develop the teaching skills required to plan for and institute positive intervention strategies in relevant curricular areas, including perceptual, motor, daily living, communication, leisure and socialization. The emphasis of this course will be upon implementing the Individualized Education Programs (IEP). Focus will be upon lesson plans, task analyses and accommodating students who require extensive or pervasive instructional supports and adapting specialized curricula to meet their learning needs. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies; Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand I: SPED 411, SPED 451, SPED 453, SPED 454. Offered in spring.

SPED 441H: 3 s.h.**H: Supprt for Specialzd Curric**

SPED 442: 3 s.h.**Eff Instr for Stdnts w Disabil**

This course is designed to prepare teacher candidates to provide effective instruction to children with mild disabilities. The course will focus on developing skills for high-quality instruction based on research-based practices used to design and adapt curriculum to provide high-quality, standard-based instruction for students with mild disabilities, with an emphasis on the inclusive classroom. Course participants will learn to plan, implement and assess the results of effective instruction aligned with students' academic, social, emotional and behavioral needs to facilitate academic achievement, with an emphasis in development of literacy skills for students in need of supports in general education. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies; Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand II: SPED 412, SPED 452, SPED 453, SPED 454. Offered in fall, spring.

SPED 443: 3 s.h.**Reflective Practices (D, W)**

This course prepares teacher candidates with the necessary skills to develop cultural sensitivity to work effectively with diverse families and their students with disabilities (mild/moderate disabilities). Teacher candidates explore culture and diversity as they apply to families, educators, and influences on daily activities, identity development, and systems of power and privilege in the educational system. Teacher candidates develop their ability to be culturally responsive, open, and respectful educators. Teacher candidates develop their professional dispositions consistent with family and student centered educational planning, program implementation and community collaboration centered on students with disabilities (mild/moderate; severe/multiple disabilities) and their diverse families.

SPED 443H: 3 s.h.**Hon: Reflective Practices (D, W)****SPED 444: 3 s.h.****Transition Planning and Secondary Programming for Individuals with Disabilities**

This course is intended to develop competencies for individual program planning and instructional management. It prepares students to develop strategies to deliver curriculum in inclusive environments through the Individualized Education Program (IEP). The transition components of the IEP will be emphasized to prepare secondary teachers to understand their role in developing goals, planning and selecting options for postsecondary education, employment, and independent living goals for youth with disabilities.

SPED 445: 3 s.h.**Individualized Educational Planning**

This course prepares teacher candidates will identify students' strengths, needs, preferences, and interests to incorporate into Individualized Education Programs. Teacher candidates will compile the necessary data with the intent of facilitating success in current and future experiences, planning instruction, and implementing supports focused on an inclusive lifespan perspective of students with disabilities. Teacher candidates will learn to develop effective strategies for grade to grade transition practices to support services in the least restrictive environment. Teacher candidates will develop their knowledge of the variety of appropriate K-12 educational environments and supports for students and plan for these based upon current special education laws and regulations and the most effective research-based practices. This course must be taken as a co-requisite with other Professional Bloc II courses. Prerequisite: Admission to Advanced Professional Studies Status, successful completion of Professional Block I.

SPED 451: 3 s.h.**Indiv Ed Plnng for Svr Disabl**

This course prepares teacher candidates with the skills to plan, design and deliver instruction focused on integrated life-span perspectives of students with severe and multiple disabilities. A student's success in school can be linked, at least in part, to effective grade-to-grade transition practices and strategies. Teacher candidates learn to develop strategies for vertical (sequential and occurring over time) or horizontal (occurring at the same time) transitions. Teacher candidates develop their knowledge of the variety of appropriate K-8 educational environments for their students and plan for these transitions based upon current special education laws and regulations and the most effective research-based practices. Teacher candidates identify their students' needs, preferences and interests and incorporate this information into their goals, objectives and plans. In keeping with a student's Individualized Education Program (IEP), teacher candidates compile necessary data with the intent of facilitating successful future experiences. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies and Professional Bloc I courses of ERCH 421; SPED 321, 341. Coreq: SPED 411, 441, 453, 454. Offered in spring.

SPED 451H: 3 s.h.**H:Ind Ed Plnng for Svr Disabl****SPED 452: 3 s.h.****Individualized Educ Planning**

This course prepares teacher candidates with the skills to plan, design and deliver instruction focused on integrated life-span perspectives of students with mild to moderate disabilities. There is a great deal of information indicating that a child's success in school can be linked, at least in part, to effective grade-to-grade transition practices and strategies. Teacher candidates learn to develop strategies for vertical (sequential and occurring over time) or horizontal (occurring at the same time) transitions. Teacher candidates develop their knowledge of the variety of appropriate K-8 educational environments for their students and plan for these transitions based upon current special education laws and regulations, and the most effective research-based practices. Teacher candidates conduct and use comprehensive grade-to-grade transition evaluations and learn strategies to identify their students' needs, preferences, and interests and incorporate this information into their goals, objectives and plans. In keeping with a student's Individualized Education Program (IEP), teacher candidates compile necessary data with the intent of facilitating successful future experiences. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies and Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand II: SPED 412, SPED 442, SPED 453, SPED 454. Offered in fall, spring.

SPED 453H: 3 s.h.**Hnrs: Reflective Practices (D, W)****SPED 463: 3 s.h.****EBPs for Math, Lit, Cntnt Area**

This seminar, taken in conjunction with Student Teaching, is for all teacher candidates in the PK-12 Special Education Certification program. This seminar provides teacher candidates the opportunity to refine their knowledge of evidence-based practices in literacy, mathematics, and the core content areas for students with exceptionalities in grades PK-12 (for example peer-assisted learning strategies, self-regulated strategy instruction, etc.). Teacher candidates will select, implement, and evaluate the success of evidence-based practices through the collection and analysis of student data.

SPED 479: 3 s.h.

Experimental
Experimental

SPED 489: 1-4 s.h.**Honors Course**

For the definition of departmental honors and eligibility, refer to the Special Academic Opportunities section of this catalog.

SPED 498: 1-3 s.h.**Independent Study**

For further information, see the Special Academic Opportunities section.

SPED 499: 1-4 s.h.**Departmental Honors**

For the definition of departmental honors and eligibility, refer to the Special Academic Opportunities section of this catalog.

SPED 546: 3 s.h.**Sec Stdnts w Disab Inclu Sttgs**

This course is designed to prepare secondary education majors to effectively teach students with disabilities in inclusive classrooms. Participants will learn legal mandates, secondary general educators' role in the special education process, and the academic and social implications of inclusion. Participants also will learn to facilitate academic achievement for students with mild and moderate disabilities in inclusive secondary education by planning, adapting, and implementing effective instruction. Cross-listed with SPED 346, credit may not be received for both.

SPED 578: 3 s.h.**Special Education Law**

The purpose of the course is to learn about the legal background of special education from its historical experience through its rapid development in the 1970s and 1980s to its current and future impact. Students will become familiar and conversant in the Pennsylvania and Federal Regulations and Standards, appropriate case law, and how Section 504 of the Rehabilitation Act of 1973 impacts and interacts with special education law and the due process hearing system. Federal statutes governing special education will be reviewed. Offered periodically.

SPED 580: 3 s.h.**Diagnostic and Assessment Strategies for Students with Disabilities**

Specifically acquaints students with diagnostic and prescriptive methods for the accurate assessment of, and the systematic intervention with, learning or behavior problems of school-age students with mental/physical disabilities. Emphasis is placed on selecting and applying appropriate evaluation tools, programs, materials, techniques and psychological principles to learning for the student with disabilities. Offered in spring and summer.

SPED 586: 3 s.h.**Topics in Special Education**

Specific topics are chosen that may serve as a change agent for special education programs in which students with disabilities are the prime responsibility.

SPED 600: 3 s.h.**Orientation to Special Education**

Introductory overview of special education, primarily for individuals with no previous knowledge of the field. Emphasis is placed upon comprehension of definitions, terminology and classification systems. A general historic background for the areas of brain injured, mentally retarded, emotionally disturbed, socially maladjusted, and physical and learning disabilities are reviewed in terms of program development, laws and curriculum.

SPED 601: 3 s.h.**Psyc of Stdnts w/ Disabilities**

A survey course of physical, psychological and social aspects of individuals with disabilities. Special attention is paid to disability as a socially constructed experience for people with disabilities as it pertains to learning processes, educational systems and social roles. The historical development of education and human service programs for individuals with disabilities is given consideration. Current terminologies and trends are emphasized. Multicultural aspects are included as they pertain to special education.

SPED 611: 3 s.h.**Seminar in Learning Disabled**

Advanced study and research concerning the mind, mental processes, feelings, desires, actions, traits, attitudes and thoughts of children with neurological impairments and/or learning disabilities, as well as an investigation of major educational theories and approaches. The student will investigate the consistencies of the basic premises and issues of the field as well as establish the current state of the art. Emphasis will be on definition, identification, characteristics, education and research of students with learning disabilities. Offered in summer.

SPED 618: 3 s.h.**Advanced Topics in Early Intervention**

For practicing teachers or master-level students who will be called upon to develop, implement and evaluate early-intervention programs for students with developmental delays and students who are at risk for school delays. Includes examination of areas that interfere with normal development, assessment of the needs of young children and the design of programs to facilitate growth. Includes the importance of family involvement and evaluates instructional strategies intended to enhance the child's success. Covers skills in accordance with family-centered services and participation in interagency, collaborative efforts. - Course focuses on the role of the reading specialist as a literacy leader. Topics will include theoretical orientations, the observation and supervision of reading, principles of staff development, principles of coaching and leadership practices.

SPED 621: 3 s.h.**Multicultural Aspects**

Covers desirable changes in attitudes, perceptions, understandings and practices when working with children and youth who are educationally disadvantaged and whose disadvantage is caused by lower socioeconomic status or other demographic considerations, including race and ethnicity. Multicultural groups may include African Americans, Native Americans, Latin Americans and Appalachians. Remedial programs are evaluated and recommendations are made. Offered in spring.

SPED 642: 3 s.h.**Teaching Mild and Moderate Disabilities**

Provides education intervention and management model for the accurate assessment of, and systematic intervention with, mentally and/or physically handicapped school-age students. Emphasis is placed on selecting and applying specific evaluation tools, programs, materials, techniques and psychological principles to the learning of identified populations. Offered in summer.

SPED 651: 3 s.h.**Accomplished SPED Advocacy**

This course orientates the student with advanced opportunities, roles, and skills available to the accomplished special education teacher. Students will learn how to be effective advocates for students and their families, as well as how to develop leadership skills in the special education classroom and beyond. Emphasis will be placed on relevant professional organizations and careers that highlight special education advocacy and leadership. This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended.

SPED 652: 3 s.h.**Accomplished SPED Diversity**

Allows the student to examine and reflect upon a variety of social constructs, intercultural issues, and curriculum development through the lenses of special education history, disability studies and social justice. The implications for future research and practice will be explored in respect to the development of local, national and international policies for diverse children, adults and families impacted by disabilities. This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended.

SPED 653: 3 s.h.**Accomplished SPED Collaboration**

Designed to prepare educators to effectively collaborate and problem-solve with students, families, and other professionals. A major emphasis in this course will include co-planning, co-instruction, and co-reflection through demonstration lessons. Additional content in this course will address the legal requirements associated with referral and procedural safeguards for parents and youth with disabilities. Emphasis will be placed on consultation and communication strategies to facilitate collaboration within schools and the surrounding community. (3 credits) This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended.

SPED 654: 3 s.h.**Adv. Pedagogy Accomplished SPED**

Familiarizes experienced educators with an in-depth examination of research based pedagogical methods used to improve academic, social, behavioral, and transitional outcomes for Pre K-12 students with disabilities. Current instructional and assistive technologies will be explored. Specific topics and strategies explored in course will be aligned to the strengths and preferences of each student. Selection, implementation, and assessment of appropriate teaching strategies with an authentic audience will be expected. This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended.

SPED 665: 3 s.h.**Transition and Supportive Employment for Adults with Disabilities**

Transition planning for secondary students with disabilities, with specific emphasis on making appropriate job-placement decisions. Job categories will also be examined to assist in making meaningful matches between the worker and job. Programs that facilitate development of a congruence between job and employee are included, as well as agencies and other resources that might assist in job placement. Offered infrequently.

SPED 671: 3 s.h.**Behavior Management**

Intervention strategies for dealing with appropriate and inappropriate behaviors in individuals with disabilities. Opportunities to research and practice relevant classroom teaching and management skills, including the analysis of student behaviors, techniques for modifying targeted skill areas and methods for analyzing possible causes of behavior. Discussions of systematic procedures for evaluating the efficacy of certain management and intervention systems. Also emphasizes investigation and development of pragmatic solutions to students' current placement questions. Offered in fall.

SPED 681: 3 s.h.**Admin and Supervision of Sped**

Current issues and practices of special education curriculum and instruction, school law, budget process, staff development, teacher supervision, family collaboration and public relations are analyzed. Discussions are geared to effecting change to meet standards, student needs and best practices for students with special needs. Offered periodically.

SPED 689: 3 s.h.**Research Sem for Accomplish SPED**

Acquaints graduate students with relevant areas of needed research in the field of special education. Attention is given to discovering relevant problem areas for investigation. Historical, descriptive and experimental methods of research are covered. The value of research based teaching practices is stressed. A main purpose is to guide the student through an experience of writing a grant proposal and a literature review. Prereq: EDFN 601

SPED 690: 3,6 s.h.**Clinical Practicum**

This experience will be utilized by students who are certified in areas of education other than special education.

SPED 691: 1-3 s.h.**Independent Study in Spec Ed**

Independent Study in Special Education

SPED 693: 1-3 s.h.**Action Research**

In-depth approach to a specially and individually structured problem. Seminars to discuss recent trends and issues in special education will be included. Students may visit and become familiar with institutions, private schools and innovative public school classes for students with disabilities.

SPED 695: 1,3 s.h.**Accomplished SPED Captone**

This course enables the student to put theory into practice as it pertains to the professional contributions of an accomplished special education teacher. In accordance with the ongoing consultation of the instructor, the student will design, implement, and reflect upon a major capstone project aligned with the objectives of the program. Capstone examples include, but are not limited to (a.) action research, (b) creation/presentation of professional development, (c.) creation/presentation of original scholarship at a professional conference, (d.) mentorship of a pre-service or new special education teacher, (e.) grant writing The course is 3 hours (pass/fail). However, if the student is unable to complete all requirements of the course during a single semester, they may re-enroll for 1 credit up to 2 additional, consecutive semesters for a total of 5 credits. This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended. Pre-requisites: Completion of all SpEd MEd coursework. Up to 6 credits (not from the Knowledge Core) may be taken concurrently.

SPED 698: 1-3 s.h.**Ind Study:**

Independent Study in Special Education.

SPED 699: 3,6 s.h.**Thesis**

An applied research project pertaining to the education of students with disabilities. Research findings must be submitted to a professional journal and papers must be orally defended to a committee.

SPED 799: 3 s.h.**Appl Supervsn: Sped**

Provides prospective supervisors with field experience and problems encountered in the schools. Emphasis on defining and identifying pupils in all areas of disability, planning and operating a comprehensive special education program, and emphasis on techniques in assisting teachers in evaluating and improving their curricula and their teaching techniques.

Special Education Post-Baccalaureate K-12 Certification

Level 1 Post- Baccalaureate Teacher Certification Program- Pre-K- 12 Preparation

The department of special education offers a flexible hybrid or online program leading to Pennsylvania Level Certification, granted by the Pennsylvania Department of Education: Certification in PK-12. This program is designed for candidates who (a) have completed a B.A or B.S. degree in an area other than education, or (b) hold a teaching certificate in another content area or grade range.

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
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*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date'. Clearances cannot expire in the middle of a semester.

NO SPECIFIED COURSE REQUIREMENTS FOR APS

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)

3.0 Minimum Cert GPA - See separate block

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

Application for APS status

When all requirements are met, you must submit application for admission to APS status. [Click here for the application.](#)

Total Hours **0**

Major in Special Education, PREK-12 Certification

Code	Title	Hours
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FOUNDATIONS

EDFN 545	Advanced Educational Psychology	3
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	Introduction to Exceptional Education	3
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SPED 600	Orientation to Special Education	
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SUBJECT MATTER AND PEDAGOGIES

RDED 622/620, EDUC 651 and EDUC 643/661 will be waived for applicants with current Early Childhood or Middle Level Certification

SPED 618	Advanced Topics in Early Intervention	3
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SPED 642	Teaching Mild and Moderate Disabilities	3
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SPED 671	Behavior Management	3
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	Reading and Writing in the Content Areas or Current Practices in Literacy Education - Choose 1 of the following:	3
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RDED 622	Reading and Writing in the Content Areas	
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RDED 620	Current Practices in Literacy Education	
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EDUC 651	Math in the School Program	3
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	Curriculum Trends in Social Studies or Science in the School Program - Choose 1 of the following:	3
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EDUC 643	Curriculum Trends in Social Studies	
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EDUC 661	Science in the School Program	
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PLANNING AND ASSESSMENT

	Individualized Educational and Transitional Planning	3
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SPED 667		
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	Diagnostic and Assessment Strategies for Students with Disabilities	3
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SPED 680		
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ENGLISH LANGUAGE AND DIVERSE LEARNERS

EDUC 580	Methods for Teaching English Language Learners	3
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SUPERVISED FIELD EXPERIENCE

	Clinical Practicum or Post-Bacc Student Teaching - Choose 6 hours from:	6
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SPED 690	Clinical Practicum	
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EDSP 561		
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Total Hours **39**

Special Education Post-Master's Supervisory Certification

Special Education Post-Master's Supervisory Program

MU's Special Education Post-Master's in School Supervision is designed for instructional II teachers or specialists with a 5-year appropriate experience to develop supervisory skills in special education.

ADMISSION REQUIREMENTS

- Instructional II Teaching Certificate
- Applicant must have earned a master's degree (or be pursuing one concurrently)
- Applicant must have five years of appropriate experience

SUPERVISORY CERTIFICATION COURSE OF STUDY

- EDSU 700 (<https://catalog.millersville.edu/search/?P=EDSU%20700>) Functions Supervision
- EDSU 701 (<https://catalog.millersville.edu/search/?P=EDSU%20701>) Administrative Supervision
- EDSU 703 (<https://catalog.millersville.edu/search/?P=EDSU%20703>) Curriculum and Supervision
- EDSU 799 (<https://catalog.millersville.edu/search/?P=EDSU%20799>) Applied Practicum*

*Applied supervision in the applicable content subject area

Special Education, M.Ed.

Master of Education in Special Education

The Master of Education in special education provides experienced educators an opportunity to advance their careers in knowledge and skills needed to be teacher-leaders. This program that recognizes experience has been designed to improve the practice of educators through a robust program of study designed to emphasize evidence-based practice, advocacy, collaboration, and reflection. The M.Ed. in special education does not lead to level 1 certification.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
EDFN 601	Research Methods	3
EDFN 545	Advanced Educational Psychology	3
Psychological Core Requirement - Choose 1 of the following:		
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
PSYC 625	Human Growth and Development	
Philosophical Core Requirement - Choose 1 of the following:		
EDFN 511	Comparative Education	3
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Total Hours		12

Major in Special Education

Code	Title	Hours
PROFESSIONAL CORE		
Advocacy Leadership for Accomplished Special Ed Teacher		3
SPED 651	Accomplished SPED Advocacy	
Issues in Diversity for the Accomplished Special Ed Teacher		3
SPED 652	Accomplished SPED Diversity	
Consultation Collaboration for Accomplished SPED Teacher		3
SPED 653	Accomplished SPED Collaboration	
Advanced Pedagogy for the Accomplished Special Ed Teacher		3
SPED 654	Adv. Pedagogy Accomplished SPED	
Advocacy Leadership for Accomplished Special Ed Teacher		3
SPED 689	Research Sem for Accomplish SPED	
Comprehensive Exam in Special Education		
Comprehensive Exam must be passed after all five special education knowledge core are completed and before enrolling in SPED 695 Capstone.		
SPECIALIZATION AREA		
undefined - Choose 1 of the following options 1-4:		6
Option 1. English Language Learners (ELL)		
EDUC 561	Second Language Acquisition: Theory, Programs & Assessment	
EDUC 562	Methods for Teaching English Language Learners	
Option 2. Reading Literacy		
RDED 622	Reading and Writing in the Content Areas	
RDED 623	Diag. of Reading & Writing Disabilities: Practicum	
Option 3. Educational Aspects of Social Work - Choose 2 of the following:		
SOWK 602	Behavioral Health	
SOWK 606	School Social Work	
SOWK 611	Children and Youth At-Risk	
Option 4. Gifted Education		
GFED 670	Psychology of the Gifted	
GFED 676	Tchg Gftd Lnrs:Instruct Strat	
Capstone Learning Project		
SPED 695	Accomplished SPED Captone	3
Total Hours		24

Wellness and Sport Sciences

The Programs

- Letter of Completion in Coaching Education (p. 454)
- Sport Management, M.Ed. - Athletic Management Concentration (p. 454)
- Sports Management, M.Ed. - Athletic Coaching Concentration (p. 455)
- Sports Management, MSW/M.Ed. (p. 455)

Dupain, Mandi; Assistant Professor

College of Education and Human Services

B.A., Dominican College, 1996; M.A., Saint Mary's College, 1998; Ph.D., University of Pittsburgh, 2002

Halawa, Abdelhadi; Associate Professor

College of Education and Human Services

B.S., Hellwan University (Egypt), 1975; M.S., University of Michigan-Ann Arbor, 1984; Ph.D., Springfield College, 1988

Keefer, Daniel; Professor

College of Education and Human Services

B.S., East Stroudsburg University, 1993; M.S., University of Tennessee, 1995; Ph.D., University of North Carolina at Greensboro, 2001

Lombardi, Julie; Associate Professor

College of Education and Human Services

B.S. Trinity University, 1994; M.S., University of New Mexico, 1993; P.E.D., Indiana University, 1995

O'Connell, Colleen; Assistant Professor

College of Education and Human Services

B.A., Vassar College, 2016; M.S., Springfield College, 2020; Ph.D., Ibid., 2023

Schaeffer, Stratton; Assistant Professor

College of Education and Human Services

B.S., West Chester University, 1984; M.Ed., University of Texas-El Paso, 1991; Ph.D., Texas A&M University, 1998

Wimer, Jeffrey; Professor

College of Education and Human Services

B.S.Ed., Slippery Rock University, 1989; M.S., Ohio University, 1990; Ph.D., University of Dayton, 2000

WSSD 500: 3-12 s.h.

Co-Op Ed Experience in Wssd

Co-Op Ed Experience in Wssd

WSSD 525: 3 s.h.

Growth, Maturation & Phys Act

Introduction to the anatomical, physiological and psychosocial issues related to exercise and physical activity in children and adolescents such as effects of maturation, growth and puberty on physical performance.

WSSD 551: 3 s.h.

Coaching of Sport

Designed to develop the major area of knowledge pertinent to the profession of coaching. The American Sport Education Program (ASEP), dealing with sport philosophy, sport psychology, sport pedagogy, sport physiology, sport first aid and sport management, will be presented. Students may take the certification exam. Offered periodically.

WSSD 581: 3 s.h.

Performance In Sport

Provides a clear understanding of factors to be considered when analyzing human movement pertaining to sport and athletic competition. Offered periodically.

WSSD 582: 3 s.h.

Sport Psychology

Focuses on the latest psychological skills training techniques for both coaches and athletes. The latest techniques in neurolinguistic programming and its implications for coaches and athletes will be utilized. Students will be introduced to and learn the latest mental-training techniques of Olympic and professional athletes. Offered periodically.

WSSD 590: 3 s.h.

Drug and Alcohol Symposium

CR. Drug and Alcohol Symposium

WSSD 601: 3 s.h.

Organization and Administration of Sport Programs

Includes regulations of sport-governing bodies, federal law, academic integrity, institutional control, financial effectiveness and welfare of sport personnel and participants. Offered periodically.

WSSD 602: 3 s.h.

Sport in American Culture

An examination of 20th-century American culture and the role played in it by sports. Areas which will come under scrutiny include, but are not limited to, the family, labor, industry, schools, churches, race relations and democracy as they relate to sport in American culture. Offered periodically.

WSSD 603: 3 s.h.

Moral and Ethical Issues in Sports

An inquiry into ethics and morality as these apply to sport management. Competition, violence, rules, drugs and athletic scholarships are some of the concepts examined. Various ethical approaches are considered. Offered periodically.

WSSD 604: 3 s.h.

Event Management

Principles of financing, operating and managing public-assembly facilities. Emphasis on event management in arenas. Lectures, projects, papers and practical experience emphasized. Offered periodically.

WSSD 605: 3 s.h.

Sport and the Law

U.S. legal system; negligence law; intentional torts and criminal acts, including assault and battery, hazing, and violence in sport; and risk identification and management. Constitutional law issues, including state action, due process, equal protection, search and seizure/privacy issues and drug testing. Federal statutes, including Title IX, Title VII of the Civil Rights Act of 1964, Title I of the Americans with Disabilities Act, and contract law. Offered periodically.

WSSD 610: 3 s.h.

Women in Sport

Examines the history of female participation, women's relationships to changing female roles and ideals, and the attitudes of society toward competition for women. Includes an overview of women's sport organizations, federal laws and the motivations of female athletes. Offered periodically.

WSSD 612: 3 s.h.

Research Methods in Sport

Overview of the nature of research in sport sciences. Topics include different types of research methods in sport, research design, skills in data collection and assessment, and application of research to the management of sport.

WSSD 615: 3 s.h.

Campus Recreation Program

Overview includes budgets, personnel, facilities, legal concerns, gender issues, planning and evaluation, publicity and evaluation. Programming areas include intramurals, extramurals, informal sports, club sports and outdoor pursuits. Offered periodically.

WSSD 616: 3 s.h.**Internship for Athletic Management**

Practical experience related to athletic management. Students will coordinate their course work with specific field experience. Program supervised by a member of the Department of Wellness and Sport Sciences. Students must contact the graduate coordinator of sport management one semester prior to enrolling to complete the Internship Application packet. Prereq: WSSD 601, 602, 603, 604 and 605

WSSD 617: 3 s.h.**Sport Conditioning**

The physiological principles underlying the process of physical conditioning. The student will also learn how to apply these principles to individuals training for sport and physical fitness. Offered periodically.

WSSD 618: 3 s.h.**Athletic Injuries**

The basic principles of sports medicine. Emphasis on injury prevention, management and rehabilitation. Current topics and methods in athletic training are also discussed. Offered periodically.

WSSD 619: 3 s.h.**Internship for Athletic Coaching**

Practical experience related to athletic coaching. Students will coordinate their coursework with specific field experience. Program supervised by a member of the Department of Wellness and Sport Sciences. Students must contact the graduate coordinator of sport management one semester prior to enrolling to complete the Internship Application packet. Prereq: WSSD 601, 602, 603, 604 and 605.

WSSD 621: 3 s.h.**Nutrition for Exercise and Sport**

Complete study of nutrition and its effects upon exercise and sport. Offered periodically.

WSSD 622: 3 s.h.**Sport Finance**

Provides students with an improved understanding of sports-related finance issues and expands their skills in financial analysis and planning. Develops an appreciation for the financial decision-making process in sports business. Using a number of case studies and selected readings, the course will include the following topics: organization, accountability, financial planning, purchasing, revenue streams, sponsorship, licensing, franchises, box office operations, retail operations, customer retention, fundraising, grant writing, booster clubs, working with volunteers, financial risk management and payroll procedures.

WSSD 686: 1-3 s.h.**Sp Topics:**

In-depth investigation and development of an area of current sport management interest. Offered periodically.

WSSD 687: 1-3 s.h.**Sp Topics:**

In-depth investigation and development of an area of current sport management interest. Offered periodically.

WSSD 688: 1-3 s.h.**Sp Topics:**

In-depth investigation and development of an area of current sport management interest. Offered periodically.

WSSD 689: 1-3 s.h.**Sp Topics:**

In-depth investigation and development of an area of current sport management interest. Offered periodically.

WSSD 691: 1-3 s.h.**Ind Study:**

Intensive study of a particular field or problem in sport management not normally covered in a regular course. Offered as needed.

WSSD 698: 3 s.h.**Research Proposal**

To fulfill the requirements of the course, students must satisfactorily complete an introduction, a review of literature and provide a written research design. APA format will be used for the research proposal. Offered as needed.

WSSD 699: 3 s.h.**Thesis**

Each student writes and orally defends a study of some significance in the field of sport management demonstrated by (1) an individual bound thesis or (2) by condensing his/her findings and submitting them to a professional journal. APA format will be used for the thesis. Offered periodically.

Letter of Completion in Coaching Education

The purpose of this 9-credit, fully-online Letter of Completion in Coaching Education is for post-baccalaureate students to satisfy all of the courses required by the PIAA and the program will provide students the opportunity to complete several of the recommended courses.

This Letter of Completion in Coaching Education will serve as a stand-alone program for any interested students with a bachelor's degree from an accredited four-year college or university. The undergraduate degree need not be in a Sports Management-related field.

Letter of Completion - Coaching Education

Code	Title	Hours
REQUIRED COURSES		
Required courses fulfill the PIAA requirements for Graduate students. For more information click here.		
WSSD 551	Coaching of Sport	3
WSSD 618	Athletic Injuries	3
ELECTIVE COURSE		
Coaching Electives - Choose 1 of the following:		3
WSSD 581	Performance In Sport	
WSSD 582	Sport Psychology	
WSSD 617	Sport Conditioning	
WSSD 621	Nutrition for Exercise and Sport	
Total Hours		9

Sport Management, M.Ed. - Athletic Management Concentration

The Department of Wellness and Sport Sciences offers the M.Ed. in sport management, with specialty concentrations in athletic coaching and athletic management. The degree program is designed to meet the needs of full-time students as well as working professionals, including athletic directors, coaches, athletic trainers and sport industry professionals. The program will appeal to individuals involved in the management of professional sport industries, school-based athletics, commercial and community recreation, sport facilities, fitness clubs and related private-sector enterprises. Studies leading to this M.Ed. are interdisciplinary,

drawing on expertise in sport science, educational theory and research. A thesis option is available.

Admission Requirements

In addition to meeting regular University admission criteria, applicants for admission to the master's degree program in sport management should have an undergraduate GPA of 2.75 or higher. Applicants with a cumulative GPA between 2.75 and 2.99 will choose to either take the Graduate Record Exam (GRE), Miller Analogies Test (MAT), Graduate Management Admissions Test (GMAT) or complete a face-to-face interview with a short writing assignment on a topic appropriate to the sport management program. Applicants with a cumulative GPA above 3.0 are only required to submit a complete application. Applicants with a cumulative GPA below 2.75 may submit an application for consideration. These students will also need to comply with admission requirements for applicants with a cumulative GPA between 2.75 and 2.99 as previously stated above.

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
Methods of Research or Research Methods in Sport - Choose 1 of the following:		3
EDFN 601	Research Methods	
WSSD 612	Research Methods in Sport	
Psychological Core Requirement - Choose 1 of the following:		3
EDFN 545	Advanced Educational Psychology	
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
PSYC 625	Human Growth and Development	
Philosophical Core Requirement - Choose 1 of the following:		3
EDFN 511	Comparative Education	
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Total Hours		9

Major in Sport Management (MED)

Code	Title	Hours
REQUIRED COURSES		15
WSSD 601	Organization and Administration of Sport Programs	
WSSD 602	Sport in American Culture	
WSSD 603	Moral and Ethical Issues in Sports	
WSSD 604	Event Management	
WSSD 605	Sport and the Law	
ELECTIVE COURSE OR THESIS - Choose 1 of the following options 1-2:		
Option 1. Elective Course - Choose 1 class from:		
Any 5-level WSSD course(s)		
Any 6-level WSSD course(s)		
Option 2. Thesis Option		
WSSD 698	Research Proposal	
WSSD 699	Thesis	

Athletic Management Concentration - See separate block

Total Hours 15

Concentration in Athletic Management

Code	Title	Hours
ATHLETIC MANAGEMENT COURSES		
WSSD 616	Internship for Athletic Management	3
WSSD 622	Sport Finance	3
Special Topics: Sport Marketing		3
WSSD 689	Sp Topics:	
Total Hours		9

Sports Management, M.Ed. - Athletic Coaching Concentration

The Department of Wellness and Sport Sciences offers the M.Ed. in sport management, with specialty concentrations in athletic coaching and athletic management. The degree program is designed to meet the needs of full-time students as well as working professionals, including athletic directors, coaches, athletic trainers and sport industry professionals. The program will appeal to individuals involved in the management of professional sport industries, school-based athletics, commercial and community recreation, sport facilities, fitness clubs and related private-sector enterprises. Studies leading to this M.Ed. are interdisciplinary, drawing on expertise in sport science, educational theory and research. A thesis option is available.

Admission Requirements

In addition to meeting regular University admission criteria, applicants for admission to the master's degree program in sport management should have an undergraduate GPA of 2.75 or higher. Applicants with a cumulative GPA between 2.75 and 2.99 will choose to either take the Graduate Record Exam (GRE), Miller Analogies Test (MAT), Graduate Management Admissions Test (GMAT) or complete a face-to-face interview with a short writing assignment on a topic appropriate to the sport management program. Applicants with a cumulative GPA above 3.0 are only required to submit a complete application. Applicants with a cumulative GPA below 2.75 may submit an application for consideration. These students will also need to comply with admission requirements for applicants with a cumulative GPA between 2.75 and 2.99 as previously stated above.

Sports Management, MSW/M.Ed.

A dual-degree option is available for students in the MSW program who wish to also obtain a Master of Social Work and Master of Education in sport management. Students seeking a dual degree in MSW/M.Ed. in sport management will need to complete the full curriculum in the MSW program (which is 36 or 60 credits). Students will learn emerging trends in working with athletes of all levels, in clinical and counseling settings; gain knowledge and skills related to athletic program and/or venue management; and develop methodologies to work with athletes in a number of areas—for example, career counseling, life skills development, substance-abuse prevention, advocacy, recruitment and transitioning to a post-athletic career.

In addition to completing the requirements for the MSW degree, you must complete the requirements for the major in Sport Management.

You must select either the Athletic Coaching or Athletic Management concentration.

Requirements for Athletic Management: Major in Sport Management (MED)

Code	Title	Hours
REQUIRED COURSES		15
WSSD 601	Organization and Administration of Sport Programs	
WSSD 602	Sport in American Culture	
WSSD 603	Moral and Ethical Issues in Sports	
WSSD 604	Event Management	
WSSD 605	Sport and the Law	
ELECTIVE COURSE OR THESIS - Choose 1 of the following options 1-2:		
Option 1. Elective Course - Choose 1 class from:		
Any 5-level WSSD course(s)		
Any 6-level WSSD course(s)		
Option 2. Thesis Option		
WSSD 698	Research Proposal	
WSSD 699	Thesis	
Athletic Management Concentration - See separate block		
Total Hours		15

Concentration in Athletic Management

Code	Title	Hours
ATHLETIC MANAGEMENT COURSES		
WSSD 616	Internship for Athletic Management	3
WSSD 622	Sport Finance	3
Special Topics: Sport Marketing		3
WSSD 689	Sp Topics:	
Total Hours		9

Requirements for Athletic Coaching:

College of Science and Technology

Welcome to the College of Science and Technology at Millersville University. At Millersville, excellence in teaching and learning is our highest priority.

Our departments have a long history of providing students with the depth and breadth of education needed for success in contemporary fields of science and technology. Several important points I believe you should know about our College faculty are:

- We are experienced educators, with approximately 98 percent of the full-time faculty in the College holding doctoral degrees.
- We are active scholars who conduct research and bring our passion and knowledge into the classroom.
- We embrace the use of high-impact educational practices in the curriculum to help facilitate your education and the development of skills necessary for you to be an independent, life-long learner. Various forms of experiential learning can be found throughout the curriculum, from faculty-mentored research and internship experiences to the opportunity for students to communicate their work to members of the public as well as to the professionals within their respective disciplines.

At Millersville, we encourage our students to work TOGETHER to be STRONG, capable learners!

As you research the science and technology programs at Millersville University through our website, be sure to read the brief highlights of our departments, our student research and internship experiences, student club opportunities, as well as alumni accomplishments. After your virtual online tour, we invite you to visit our campus in person, to meet our faculty and students, see our modern facilities, and learn more about our exceptional programs.

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- Integrated Scientific Applications, M.S. - Environmental Systems Management (p. 465)
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Biology

The Programs

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- Respiratory Therapy Certification (p. 459)

Cebra-Thomas, Judith; Associate Professor
College of Science and Technology
B.A., Johns Hopkins University, 1979; Ph.D., Washington University, 1986

Didier, Dominique; Professor
College of Science and Technology
B.A., Illinois Wesleyan University, 1987; Ph.D., University of Massachusetts, 1992

Fellmeth, Jessica; Assistant Professor
College of Science and Technology
B.A., The College of New Jersey, 2006; Ph.D., Rutgers the State University of New Jersey, 2015

Haines, Aaron; Professor
College of Science and Technology
B.S., Virginia Tech, 1998; M.S., Texas A&M University, 2003; Ph.D., Ibid., 2006

Hardy, Christopher; Professor
College of Science and Technology
A.A., Catonsville Community College, 1991; B.S., University of Maryland, 1995; Ph.D., Cornell University and New York Botanical Garden, 2001

Hoover, John; Professor
College of Science and Technology
B.S., Indiana University of Pennsylvania, 1985; Ph.D., SUNY at Syracuse, 1990

Horton, Brent; Associate Professor
College of Science and Technology
B.S., Warner College of Natural Resources, 1999; Ph.D., University of Maine, 2007

Klosinska, Maja; Associate Professor
College of Science and Technology
M.S., University of Lodz (Poland), 2003; M.S., Ibid., 2004; Ph.D., Princeton University, 2011

Lehman, Heather; Associate Professor
College of Science and Technology
B.S., Shippensburg University, 2004; Ph.D., University of Delaware, 2012

Ligocki, Isaac; Assistant Professor
College of Science and Technology
B.A., Wittenberg University, 2006; Ph.D., The Ohio State University, 2015

Ramos-Sepulveda, Laura; Assistant Professor
College of Science and Technology
B.A., University of Puerto Rico at Mayaguez, 2010; Ph.D., The Pennsylvania State University, 2014

Ryndock, Eric; Assistant Professor
College of Science and Technology

B.S., Millersville University, 2007; Ph.D., The Pennsylvania State University, College of Medicine, 2016

Stieha, Christopher; Associate Professor
College of Science and Technology
B.S., University of Kentucky, 2003; B.A., Ibid., 2003; M.S., Ibid., 2008; Ph.D., Ibid., 2012

Wagner, Ryan; Professor
College of Science and Technology
B.S., South Dakota State University, 1996; Ph.D., Washington State University, 2001

Weaver, Carolyn; Assistant Professor
College of Science and Technology
B.S., Texas A&M University at Galveston, 2003; Ph.D., Ibid., 2016

Weise Cross, Laura; Assistant Professor
College of Science and Technology
B.A., University of Texas, 2009; B.S., Ibid., 2009; Ph.D., University of North Carolina, 2015

BIOL 564: 4 s.h.
Genetics and Molecular Biology
Genetics and Molecular Biology

BIOL 589: 4 s.h.
Topics In Biology
Topics In Biology

BIOL 602: 1-4 s.h.
Prblms:
Prblms:

BIOL 625: 3 s.h.
Plant Systematics
Plant Systematics

BIOL 643: 3 s.h.
Conservation Biology
Conservation Biology

BIOL 647: 4 s.h.
Chesapeake Bay System
Chesapeake Bay System

BIOL 651: 3 s.h.
General Microbiology
General Microbiology

BIOL 662: 4 s.h.
Molecular Biology
Molecular Biology

BIOL 667: 3 s.h.
Human Genetics:Analysis/Apps
Human Genetics:Analysis/Apps

BIOL 685: 3 s.h.
Animal Behavior
Animal Behavior

Biology Post Baccalaureate Certification

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
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*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.

COURSE REQUIREMENTS FOR APS

FOUNDATIONS COURSES - Choose 1 of the following options 1-2: 6

Option 1. Foundations Graduate Level

EDFN 590	Social Foundation of Educ
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EDFN 545	Advanced Educational Psychology
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Option 2. Foundations Undergraduate Level

EDFN 211	Foundations Modern Education
----------	------------------------------

EDFN 241	Psychological Foundations of Teaching
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ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)

3.0 Minimum Cert GPA

undefined - See separate block

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

Application for APS status

When all requirements are met, you must submit application for admission to APS status. [Click here for the application.](#)

Total Hours	6
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Major in Biology, Post-Baccalaureate Certification

Code	Title	Hours
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BIOLOGY FOUNDATIONS

Foundations of Biology with C- or higher	4
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BIOL 101	Foundations of Biology
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REQUIRED BIOLOGY COURSES

Biology majors must earn grades of C- (C minus) or higher in BIOL 101, 211, 221, 343, 362 and 364.

BIOL 211	Concepts of Zoology	4
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BIOL 221	Concepts of Botany	4
----------	--------------------	---

BIOL 343	Principles of Ecology & Evolution	4
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BIOL 362	Cell and Developmental Biology	4
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BIOL 364	Foundations of Genetics & Molecular Biology	4
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BIOL 375	Biometry	3
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BIOL 473	Methods/Teaching Biological Issues in the Secondary School	1
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ELECTIVES

undefined - Choose 4 hours from:	4
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Any BIOL course(s)

Note: This requirement may not be satisfied with BIOL 100, BIOL 204, BIOL 205, BIOL 207, BIOL 208, BIOL 247, BIOL 281, or BIOL 340.

Total Hours	32
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Req Related for Biology, Post-Baccalaureate Cert

Code	Title	Hours
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CHEMISTRY

A C- or higher in CHEM 111 and 112 is a pre-requisite for CHEM 235.

CHEM 111	Introductory Chemistry 1	4
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CHEM 112	Introductory Chemistry 2	4
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Short Course in Organic Chemistry	4
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CHEM 235	Organic Chemistry
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Biochemistry Chemistry I	4
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CHEM 326	Biochemistry 1
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EARTH SCIENCE

Earth Science 200-level and above - Choose 1 class from:

Any 2-level ESCI course(s)

Any 3-level ESCI course(s)

Any 4-level ESCI course(s)

MATHEMATICS

Precalculus, Calculus I or Honors Calculus - Choose 1 of the following: 4-5

MATH 160	Precalculus
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MATH 161	Calculus 1
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MATH 163H	Honors Calculus 1
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PHYSICS

undefined - Choose 1 of the following options 1-2:	8-10
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Option 1. Physics with Algebra

PHYS 131	Physics 1 with Algebra
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PHYS 132	Physics 2 with Algebra
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Option 2. Physics with Calculus

PHYS 231	Physics 1 with Calculus
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PHYS 232	Physics 2 with Calculus
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Total Hours	28-31
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Professional Education - Certification

Code	Title	Hours
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FOUNDATIONS BLOC

We recommend 590 and 545 for Post-Bacc students. These courses each require 35 hours field placement at an urban school. Offered in the evenings Fall and Spring. Also offered in Summer Session. If enrolling in EDFN 211/241, please register for both courses in the same block.

Foundations of Modern Education - Choose 1 of the following:	3
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EDFN 590	Social Foundation of Educ
----------	---------------------------

EDFN 211	Foundations Modern Education
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Psychological Foundations of Teaching - Choose 1 of the following:	3
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EDFN 545	Advanced Educational Psychology
----------	---------------------------------

EDFN 241	Psychological Foundations of Teaching
----------	---------------------------------------

APS - PROFESSIONAL BLOC

Students must meet APS eligibility requirements prior to registering. Course Appropriate PRAXIS II Exam should be taken after Professional Bloc, but prior to Student Teaching.

Instructional Technology, Design Assessment - Choose 1 of the following: 3

EDFN 530	Instructional Technology, Design and Assessment
EDFN 330	Instructional Technology, Design & Assessment

Issues in Secondary Education - Choose 1 of the following: 3

EDSE 521	Issues in Second Education
EDSE 321	Issues in Secondary Education

Content Area Literacy for Diverse Classrooms - Choose 1 of the following: 3

EDSE 340	Content Area Literacy for Diverse Classrooms
EDSE 540	Cntnt Area Litrcy Divers Class

Secondary Students w/Disabilities in Inclusive Settings - Choose 1 of the following: 3

SPED 346	Secondary Students w/Disabilities in Inclusive Settings
SPED 546	Sec Stdnts w Disab Inclu Sttgs

EDSE 435 Teaching of Science in Secondary Schools 3

STUDENT TEACHING SEMINAR

File your Intent to Student Teach Card one year prior to the beginning of the semester in which you wish to Student Teach. Click here to access the Student Teaching Website

EDSE 471 Student Teaching Seminar 3

STUDENT TEACHING SEMESTER

Students must meet APS eligibility requirements prior to registering. Submit your Teacher Certification Packet 90 days prior to completion of your certification program. Click here to access the packet on the Certification Website.

Student Teaching - Choose 9 hours from: 9

EDSC 461	Student Teaching in Science
EDSC 462	Student Teaching in Science

Total Hours 33

Respiratory Therapy Certification

Respiratory Therapy Post-Bacc Certificate

Code	Title	Hours
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REQUIRED RESPIRATORY THERAPY COURSES

BIOL 257	Introduction to Allied Health Professions	1
BIOL 254	Human Anatomy & Physiology I (C- minimum)	4
BIOL 255	Human Anatomy & Physiology II (C- minimum)	4
General Microbiology (C- minimum)		4
BIOL 361	Microbiology	

RESPIRATORY THERAPY PROFESSIONAL PHASE I

After completion of the Phase I coursework, the student may graduate with a B.S. degree in Biology, Respiratory Therapy; however, the graduate must complete the Phase II coursework in order to be employed and certified as a respiratory therapist.

RESP 410	Acute Cardiopulmonary Care	2
RESP 411	Respiratory Care Techniques 1	2
RESP 412	Principles of Aerosol & Gas Therapy	3
RESP 413	Respiratory Assessment & Therapeutics	4

RESP 414	Respiratory Care Techniques 2	3
RESP 419	Respiratory Care in Alternate Sites	2
RESP 420	Arterial Blood Gas Analysis	3
RESP 421	Physiology of Mechanical Ventilation	2
RESP 422	Pharmacology	2
RESP 423	Infectious Diseases	2
Noninfectious Diseases		2
RESP 424	Non-Infectious Diseases	
RESP 425	Neonatology for the Respiratory Therapist	2
RESP 460	Clinical Practice 1	1
RESP 461	Clinical Practicum 1	2

RESPIRATORY THERAPY PROFESSIONAL PHASE II

Following completion of Phase II coursework, the student will receive a respiratory therapy certificate, which will permit them to seek employment as a respiratory therapist and qualifies them to take the certification exam.

RESP 415	Technical Aspects of Mechanical Ventilation	3
RESP 417	Respiratory Care Techniques 3	3
RESP 462	Clinical Practice 2	1
RESP 463	Clinical Practicum 2	3
RESP 464	Clinical Practicum 3	10
RESP 495	Respiratory Care Research	2

Total Hours 67

Emergency Management The Programs

The Department of Emergency Management offers:

- Emergency and Disaster Management Graduate Certificate (p. 461)
- Emergency Management, M.S. (p. 461)
- Emergency Management, M.S. - Communication Concentration (p. 462)

Graduate Faculty

Sepideh Yalda, Graduate Program Coordinator. Ph.D., St. Louis University, 1997. Earth Sciences.
 Kirsten N. Bookmiller. Ph.D., University of Virginia, 1992. Government and Political Affairs.
 Robert J. Bookmiller. Ph.D., University of Virginia, 1992. Government and Political Affairs.
 Richard D. Clark. Ph.D., University of Wyoming, 1987. Earth Sciences.
 Marc Felizzi. Ph.D., Widener University, 2010. Social Work.
 Ethan Frost. Ph.D., University of Delaware, 2011. Geography.
 Duane E. Hagelgans. J.D., CSP, Widener University, 2003. Earth Sciences.
 Theresa A. Russell-Loretz. Ph.D., Purdue University, 1995. Communications.
 Ping Yang. Ph.D., Arizona State University, 2009. Communications.

Adjunct Faculty

Paul Benyeda. M.S., C.E.M., Millersville University, 2014. Emergency Management.
 Rochelle M. Brittingham. Ph.D. University of Delaware, 2014.
 Paul A. Charp. Ph.D., University of Tennessee, 1981. Emergency Management.

Elaine Enarson. Ph.D., University of Oregon, 1981. Emergency Management.

Jeffrey Jumper. M.S., Millersville University, 2016. Emergency Management.

Anne-Marie McLaughlin. MA, MS, CEM, MEP, Norwich University, 2012, Business Continuity

Troy L. Neville. MS, CEM, CBCP, Millersville University, 2012, Emergency Management.

Timothy W. Sevison. D.Sc., Jacksonville State University, 2018. Emergency Management.

Gregory M. Zarus. M.S., Texas Tech University, 1990. Emergency Management.

EMGT 579: 1-3 s.h.

Experimental Course

Experimental Graduate Level course in Emergency Management

EMGT 601: 3 s.h.

Principles & Practices of Emergency Management

History and perspectives of the field, hazards concepts and taxonomies, all-hazards approach, phases of emergency management, risk assessment, risk communication, emergency management functions, sustainable development, best practices, the EOC, the disaster plan, CEM, IAEM, forging intra- and intergovernment relationships. Offered in fall and spring.

EMGT 603: 3 s.h.

Technical & Professional Writing for Emergency Management

The emergency-management professional is engaged in an ever-increasing workload involving reporting, budget preparation, grant applications and communicating with the public. This course is designed to enhance the necessary skills for the emergency manager to successfully negotiate the increased demands of the profession. Offered in fall.

EMGT 605: 3 s.h.

Social Dimensions of Disaster

An overview of the findings of disaster sociology, including, but not limited to, an examination of the social science definition of disaster, the disaster mythology, the impact of the media, organizational challenges during disaster, creating and maintaining a disaster-resilient community, national and international disaster researchers and the research literature. Offered in fall.

EMGT 607: 3 s.h.

Emergency Mental Health and Trauma

This in-depth course provides the emergency responder with a greater appreciation of the challenges, responses and adjustments encountered by those exposed to disastrous events. Offered in spring.

EMGT 609: 3 s.h.

Disaster Resp & Recov

An in depth investigation of emergency management practices as applied to response, and short term and long-term community recovery. The course will explore disaster recovery efforts with a foundation of statutory requirements, key concepts, core principles, roles and responsibilities of leadership, of individuals and households to governmental entities and between government and non-government sectors. Pre-requisite: EMGT 601

EMGT 614: 3 s.h.

Natural Hazards Primer

Natural Science examination of natural or environmental hazards and their associated risks. The overview will include hazards such as hurricanes, tornadoes, earthquakes, tsunamis and floods. Offered in summer and winter.

EMGT 615: 3 s.h.

Emergency Preparedness for Industry

An examination of industrial and societal risks associated with the manufacture, handling, storing and transporting of biological, chemical, nuclear and radiological materials. Offered in spring.

EMGT 616: 3 s.h.

Terrorism, WMD, Homeland Security

A sociological exploration of what terrorism is, why it occurs, prudent approaches to reducing the incidence of terrorism, and failed approaches; the origins and functions of homeland security; the necessity of maintaining an all-hazards approach; and issues surrounding the placement of FEMA within the Department of Homeland Security. WMD history; an overview of the basic known biological, chemical, radiological and nuclear materials likely to be used as weapons; approaches to inoculation and treatment before and after exposure. Offered in spring of odd years.

EMGT 617: 3 s.h.

Crisis, Emergency and Risk Communication

Draws on communication theory to examine common challenges and best practices encountered in emergency, crisis and risk communication situations by public information officers, public authorities, first responders, and health professionals. Provides the opportunity to develop strategies and communication solutions in interpersonal, mediated, social media, and public contexts. Prerequisites: EM 601 or permission of the instructor and MSEM director

EMGT 618: 3 s.h.

Humanitarian Response/Intl Disasters

International organizations and the challenges and experiences they commonly encounter in mitigating and responding to disaster events; considers if a global economy, global village will help or hinder future efforts. Offered in summer of odd years.

EMGT 619: 3 s.h.

Emergency Management Planning

In-depth analysis of planning methodologies and constructs as well as pitfalls and limiting factors in the development and execution of emergency management plans at the strategic, operational and tactical levels. Origins of emergency management planning, applicable policies and legislation, historical incident review and analysis, contemporary and emerging planning doctrine, and advanced planning concepts.

EMGT 629: 1,3 s.h.

Topics:

In-depth investigation and development of one or more topics of current interest not addressed in current curriculum. Topics will vary according to the needs of students and the faculty involved. Offered periodically.

EMGT 630: 3 s.h.

Topics:

In-depth investigation and development of one or more topics of current interest not addressed in current curriculum. Topics will vary according to the needs of students and the faculty involved. Offered periodically

EMGT 631: 3 s.h.**Topics:**

In-depth investigation and development of one or more topics of current interest not addressed in current curriculum. Topics will vary according to the needs of students and the faculty involved. Offered periodically.

EMGT 632: 1-3 s.h.**Topics:**

In-depth investigation and development of one or more topics of current interest not addressed in current curriculum. Topics will vary according to the needs of students and the faculty involved. Offered periodically.

EMGT 633: 3 s.h.**GIS Applications for Emer Mgmt**

Introduction to Geographic Information Systems (GIS), with emphasis on their use in emergency management. Covers the different types of GIS data available, sources of data and software tools for querying and spatially analyzing data. Offered in fall of odd years.

EMGT 634: 3 s.h.**Comparative EMGT Systems**

Provides a comparative perspective to emergency management by examining different governmental frameworks for emergency/disaster management from around the globe. Students will gain insight, through a variety of case studies into the connections between a country's political and legal culture, level of political-economic development and disaster vulnerability to the organization of its domestic emergency/disaster management system.

EMGT 653: 3 s.h.**Theoretical Prspctvs/Methods**

Theoretical perspectives drawn from sociology are applied to emergency management. The EM professional will develop insight into the common responses to planning, responding, recovery and mitigation. Offered in spring.

EMGT 691: 1-3 s.h.**Ind Stdy:**

Intensive study of a particular emergency-management area, topic or event. Permission of program coordinator is required.

EMGT 693: 3 s.h.**Field Experience Practicum**

A capstone experience in which emergency management knowledge and skills are applied and integrated within a field experience. Those already working within an emergency management related career will use their current position as the basis for completing a project applicable to enhancing their current skills and applying best practices. The course will provide you with the opportunity to participate in supervised emergency management work activities, or focused research, that provide experiential and research-based learning in the application and integration of the theory and skills acquired in earlier coursework. Permission of the program coordinator is required. Prerequisites: Successful completion of 24 credit hours in the MSEM program, submission and approval of the Field Experience Practicum Proposal Form.

Emergency and Disaster Management Graduate Certificate

The Emergency and Disaster Management (EDM) graduate certificate is a fully online certificate program and consists of five courses. This certificate is a 15-credit graduate certificate program. Certificate students who successfully complete their certificate courses will be able to apply

the earned credits towards the full MSEM degree (or the MSEM-MSW dual-degree program) should they elect to do so.

Emergency Management, M.S.

The Master of Science degree in Emergency Management (MSEM) is a multidisciplinary program and is delivered as a fully online program. Graduate students will benefit through the continued development of both general and specialized courses, exposure to academics and practitioners with interest and experience in the area of disaster research and emergency management, the opportunity to undertake graduate research independently as part of ongoing faculty research, the opportunity to complete internships/co-ops, the link to other graduate programs and the availability of high-demand employment opportunities following graduation.

Admission Requirements

Before an application will be considered for admission, the following documents must be submitted to the College of Graduate Studies and Adult Learning: a completed graduate application and application fee, an official transcript from all institutions of higher education attended, verification of completion of a baccalaureate degree from a regionally accredited institution, three professional letters of recommendation, a goal statement and a résumé. If an applicant does not meet the minimum undergraduate GPA requirement of 2.8, an official score from either the GRE or MAT test taken within five years of the date of application is required. Applicants whose first language is not English must submit their score from the Test of English as a Foreign Language (TOEFL). Students with non-U.S. degrees must submit official academic credentials evaluated by an evaluation service along with the MSEM application. The TOEFL must have been completed within the previous two years.

Degree Requirements

The curriculum consists of 24 credit hours of required courses and an additional six credit hours of elective courses. The degree program, therefore, requires students to complete a total of 30 credit hours. Each course will incorporate knowledge and skills from or relevant to academic research, best practices, human behavior and key organizations, as well as legal issues, policies, rules and regulations.

The program can be completed on a part-time schedule. Students can elect to enroll in one or two courses during the fall and spring semesters as well as during the summer. It is possible for students to complete the program within two years; it must be completed, however, within five years.

Transfer Credits

All transfer credits must come from a regionally accredited institution and must have been completed within five years of enrolling in the MSEM program. A total of nine credits can be transferred.

Curriculum

Major in Emergency Management - MS

Code	Title	Hours
CORE COURSES		24
EMGT 601	Principles & Practices of Emergency Management	
EMGT 603	Technical & Professional Writing for Emergency Management	

EMGT 605	Social Dimensions of Disaster
EMGT 607	Emergency Mental Health and Trauma
EMGT 614	Natural Hazards Primer
EMGT 615	Emergency Preparedness for Industry
EMGT 619	Emergency Management Planning
EMGT 693	Field Experience Practicum
Elective Courses - Choose 2 classes from:	
EMGT 609	Disaster Resp & Recov
EMGT 616	Terrorism,WMD,HomeInd Security
EMGT 617	Crisis, Emergency and Risk Communication
EMGT 618	Humanitrn Rspnse/Intl Disastrs
Any EMGT 629-632 course(s)	
EMGT 633	GIS Applications for Emer Mgmt
EMGT 653	Theoretical Prspctvs/Methods
EMGT 691	Ind Stdy.
EDTE 605	Applying Critical Thinking and Decision Making
Total Hours	24

Emergency Management, M.S. - Communication Concentration

Millersville University's Master of Science in Emergency Management (MSEM) degree requires 30 credit hours of study. The curriculum for the Communication Track within the MSEM Program consists of 15 credit hours of communication courses and 15 credit hours of MSEM courses. The Communication Track requires students to take five graduate courses from the Department of Communication and Theatre, including three required courses and two electives. Since the MSEM is an online program, all communication courses will be offered completely online, with synchronous component in each course for faculty and student interaction, discussions, group work and individual projects.

Major in Emergency Management, Communication - MS

Code	Title	Hours
REQUIRED EMERGENCY MANAGEMENT COURSES		
EMGT 601	Principles & Practices of Emergency Management	3
EMGT 603	Technical & Professional Writing for Emergency Management	3
EMGT 605	Social Dimensions of Disaster	3
EMGT 614	Natural Hazards Primer	3
EMGT 693	Field Experience Practicum	3
REQUIRED COMMUNICATION COURSES		
EMGT 617	Crisis, Emergency and Risk Communication	3
COMM 605	Comm Research Proseminar	3
COMM 625	Intercultural Comm in Contexts	3
Additional Communication Electives - Choose 2 of the following:		6
COMM 610	Seminar in Organizational Comm	
COMM 627	Digital Advocacy	
COMM 653	Applied Comm Theory	
COMM 661	Health Communication	
Total Hours		30

Integrated Scientific Applications The ProgramS

The Department of Integrated Scientific Applications offers:

- Earth Science Post-Baccalaureate Certification (p. 462)
- Integrated Scientific Applications, M.S. (p. 464)
- Integrated Scientific Applications, M.S. - Climate Science Applications (p. 464)
- Integrated Scientific Applications, M.S. - Environmental Systems Management (p. 465)
- Integrated Scientific Applications, M.S. - Geoinformatics (p. 465)
- Integrated Scientific Applications, M.S. - Space Weather and Environment (p. 465)
- Integrated Scientific Applications, M.S. - Weather Intelligence & Risk Management (p. 465)
- Space Weather and Environment Certificate (p. 465)

Graduate Faculty

Richard D. Clark, Department Chairperson, Graduate Program Coordinator. Ph.D., University of Wyoming, 1987. Atmospheric Sciences.
Dr. Sam Earman, Ph.D., New Mexico Institute of Mining and Technology, 2004, Environmental Hydrology.
Michael R. Gumper. Ph.D., University of Kentucky, 1998. Economics.
Ajay Kumar. Ph.D., Old Dominion University. Physical Oceanography.
Dr. Tamitha Skov. University of California, Los Angeles, 2002, Space Weather; Solar Physics.
Dr. Robert Vaillancourt Ph.D. University of Rhode Island, 1999, Environmental Oceanography.
Sepideh Yalda. Ph.D., St. Louis University, 1997. Atmospheric Sciences.

ISCA 579: 1-3 s.h.

Experimental

Experimental course number for Integrated Scientific Applications. Topics vary.

ISCA 679: 1-4 s.h.

Experimental

Experimental Course in Integrated Scientific Applications

Earth Science Post-Baccalaureate Certification

For post-baccalaureate information please see the "Certification" section of the Graduate Course Catalog.

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.		

COURSE REQUIREMENTS FOR APS

FOUNDATIONS COURSES - Choose 1 of the following options 1-2:		6
Option 1. Foundations Graduate Level		
EDFN 590	Social Foundation of Educ	
EDFN 545	Advanced Educational Psychology	
Option 2. Foundations Undergraduate Level		
EDFN 211	Foundations Modern Education	

EDFN 241 Psychological Foundations of Teaching

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)

3.0 Minimum Cert GPA

undefined - See separate block

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

Application for APS status

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours 6

Major in Earth Science, Post-Bacc Certification

Code	Title	Hours
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Credits Required for Major

true

Minimum GPA 2.0 for Major

true

ESCI 221	Physical Geology (C- minimum)	4
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ESCI 222	Historical Geology	4
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ESCI 241	Meteorology (C- minimum)	4
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ESCI 245	Environmental Meteorology	3
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ESCI 261	Introduction to Oceanography (C- minimum)	4
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Additional Oceanography Course - Choose 1 of the following:		3
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ESCI 267	Field Methods in Oceanography	
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ESCI 363	Chemical Oceanography	
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ESCI 366	Marine Resources and Policy	
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ESCI 369	Physical Oceanography and Climate	
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ESCI 464	Ocean Ecosystems	
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ESCI 465	Biological Oceanography	
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ESCI 466	Environmental Oceanography	
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ESCI 468	Ocean Data Analysis and Presentation	
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300 or 400 level ESCI Elective - Choose 1 class from:		
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Any 3-level ESCI course(s)		
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Any 4-level ESCI course(s)		
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Total Hours 22

Req Related for Earth Science, Post-bacc Cert

Code	Title	Hours
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MATHEMATICS

MATH 160	Precalculus	4
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MATH 161	Calculus 1 (C- minimum)	4
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PHYSICS

PHYS 131	Physics 1 with Algebra (C- minimum)	4
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PHYS 132	Physics 2 with Algebra	4
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General Astronomy or Intro to Astronomy Astrophysics - Choose 1 of the following:		3
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PHYS 117	General Astronomy	
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PHYS 317	Introduction to Astronomy	
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CHEMISTRY

CHEM 111	Introductory Chemistry 1 (C- minimum)	4
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CHEM 112	Introductory Chemistry 2	4
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BIOLOGY

Demonstrated Competency in Biology

Competency may be demonstrated by: 1) a course grade of 'A' or 'B' in AP Bioogy; 2) a score of 3 or better in the national AP exam; 3) a successful score on the CLEP exam; 4) a successful score on a General Biology challenge or placement examination; 5) a passing grade for General Biology (BIOL 100)

200 level or higher Biology elective - Choose 1 class from:		
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Any 2-level BIOL course(s)		
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Any 3-level BIOL course(s)		
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Any 4-level BIOL course(s)		
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Total Hours 27

Professional Education - Certification

Code	Title	Hours
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FOUNDATIONS BLOC

We recommend 590 and 545 for Post-Bacc students. These courses each require 35 hours field placement at an urban school. Offered in the evenings Fall and Spring. Also offered in Summer Session. If enrolling in EDFN 211/241, please register for both courses in the same block.

Foundations of Modern Education - Choose 1 of the following:		3
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EDFN 590	Social Foundation of Educ	
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EDFN 211	Foundations Modern Education	
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Psychological Foundations of Teaching - Choose 1 of the following:		3
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EDFN 545	Advanced Educational Psychology	
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EDFN 241	Psychological Foundations of Teaching	
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APS - PROFESSIONAL BLOC

Students must meet APS eligibility requirements prior to registering. Course Appropriate PRAXIS II Exam should be taken after Professional Bloc, but prior to Student Teaching.

Instructional Technology, Design Assessment - Choose 1 of the following:		3
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EDFN 530	Instructional Technology, Design and Assessment	
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EDFN 330	Instructional Technology, Design & Assessment	
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Issues in Secondary Education - Choose 1 of the following:		3
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EDSE 521	Issues in Second Education	
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EDSE 321	Issues in Secondary Education	
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Content Area Literacy for Diverse Classrooms - Choose 1 of the following: 3

EDSE 340	Content Area Literacy for Diverse Classrooms	
EDSE 540	Cntnt Area Litrcy Divers Class	

Secondary Students w/Disabilities in Inclusive Settings - Choose 1 of the following: 3

SPED 346	Secondary Students w/Disabilities in Inclusive Settings	
SPED 546	Sec Stdnts w Disab Inclu Sttgs	

EDSE 435 Teaching of Science in Secondary Schools 3

STUDENT TEACHING SEMINAR

File your Intent to Student Teach Card one year prior to the beginning of the semester in which you wish to Student Teach. Click here to access the Student Teaching Website

EDSE 471 Student Teaching Seminar 3

STUDENT TEACHING SEMESTER

Students must meet APS eligibility requirements prior to registering. Submit your Teacher Certification Packet 90 days prior to completion of your certification program. Click here to access the packet on the Certification Website.

Student Teaching - Choose 9 hours from: 9

EDSC 461	Student Teaching in Science	
EDSC 462	Student Teaching in Science	

Total Hours 33

Integrated Scientific Applications, M.S.

The goal of the Millersville University MSISA program is to produce professionals with cross-disciplinary scientific skills and business knowledge. The MSISA degree was developed in response to local and national trends indicating the need for highly skilled, technically astute scientists possessing good business sense and excellent communication skills. There are four specializations within the program:

1. Climate Science Applications: Learn to interpret and articulate climate science information emphasizing impacts on society, infrastructure and critical resources.
2. Environmental Earth Systems Management: Prepare for careers that bridge environmental sciences with business competencies and geospatial data management.
3. Geoinformatics: Students develop skills in remote sensing, data management, GIS and image analysis, and learn to apply them within a business context.
4. Weather Intelligence and Risk Management: Develop proficiencies in quantifying uncertainty and management of weather-related risk within the business enterprise.
5. Space Weather and Environment: Science, Policy, and Communication

See [mville.us/msisa](http://www.mville.us/msisa/) (<http://www.mville.us/msisa/>) for detailed information on the core curriculum and specializations.

Admission Requirements

Before an application will be considered for admission, the following documents must be submitted to the College of Graduate Studies and Adult Learning: a completed graduate program application and

application fee, an official transcript from all institutions of higher education attended, verification of completion of a baccalaureate degree from a regionally accredited institution, three professional or academic recommendation forms, a goal statement and a résumé. If an applicant does not have a minimum undergraduate GPA of 3.0, an official score from the GRE, MAT or GMAT taken within five years of the date of application is required. Applicants whose first language is not English must submit their score from the Test of English as a Foreign Language (TOEFL). The TOEFL must have been completed within the past two years. Students with non-U.S. degrees must submit official academic credentials evaluated by an evaluation service (see *Application as an International Student* for more information).

Degree Requirements

The MSISA consists of 30 graduate credits. The professional specializations within the MSISA include Weather Intelligence and Risk Management (WIRM), Geoinformatics (GI), Environmental Systems Management (ESM) and Climate Science Applications (CSA). Visit mville.us/msisa (<http://www.mville.us/msisa/>) for additional information, or email gradadmissions@millersville.edu.

Climate Science Applications (CSA) Major in Integrated Scientific Applications

Code	Title	Hours
Credits Required for Major		

33	true
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CORE COURSES

Business Operations and Analysis

BUAD 653 at Millersville, EMGT 629 Continuity Planning, or Take BSN 511 at Shippensburg University	
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GIS Applications or Information Analysis - Choose 1 of the following: 3

EMGT 633	GIS Applications for Emer Mgmt	
EMGT 691	Ind Stdy: (Ind Stdy: Python Int Stds)	

Accounting and Finance

Take BSN 512 at Shippensburg University or MATH 695 Topics: Financial Math

Strategic Management/Leadership

Take BUAD 670 at Millersville or BSN 514 at Shippensburg University

ECON 507	Environmental Econ and Policy	3
MATH 535	Statistical Methods 1	3
EMGT 693	Field Experience Practicum	3

A Concentration is Required.

A concentration must be declared with this degree. Options are: Weather Intelligence and Risk Management, Geoinformatics, Climate Science Applications, Environmental Systems Management, or Space Weather Environment

Total Hours 12

Integrated Scientific Applications, M.S. - Climate Science Applications

Integrated Scientific Applications, M.S. - Environmental Systems Management

Integrated Scientific Applications, M.S. - Geoinformatics

Integrated Scientific Applications, M.S. - Space Weather and Environment

Integrated Scientific Applications, M.S. - Weather Intelligence & Risk Management

Space Weather and Environment Certificate

Space Weather and Environment: Science, Policy and Communication

Space Weather and Environment: Science, Policy and Communication (SWEN) is a **fully online** five course, 15-credit-hour graduate certificate program for clientele that includes broadcast meteorologists and other weather-casters, emergency responders, military personnel, federal and state policy advisors, legislative assistants, science journalists, and any professional whose career may be enhanced with a greater understanding of this subject area. Guided by the National Space Policy of the United States of America, this program will be an avenue for professional development and advancement for those seeking to deepen and broaden their knowledge-base and understanding of the Earth-Sun-Space environment as well as the impact space weather can have on infrastructure, communication and commerce.

WHY STUDY THIS PROGRAM?

If you are responsible for communication and power grids, transportation systems, navigation systems including space-based assets, commerce, and other infrastructure, this program is for you. Additionally, this program will assist individuals to be better prepared to communicate these issues to policy-makers, stakeholders and the public. The international scope of the SWEN will help prepare individuals for positions in the government, private, commercial and academic sectors. The program should be especially interesting for broadcast meteorologists who are seeking to gain knowledge and proficiency in space weather to better communicate to their market audience.

WHAT YOU WILL LEARN?

Those who have completed the SWEN program will possess the ability to:

- Demonstrate base knowledge of natural or environmental hazards, including space weather hazards and associated risks;
- Describe solar and space weather phenomena, including but not limited to: aurora, coronal holes, coronal mass ejections (CME), solar flares, sunspots, solar cycle, geomagnetic storms, characteristics of

the magnetosphere, and behavior of the interaction between different elements;

- Relate impacts of space weather phenomena to existing and emerging fields, including the variety of customers and operations most vulnerable;
- Organize existing protocols and design new protocols for preparing and responding to space weather events;
- Describe and apply the products, data and graphics to communicate for specific space weather events; and
- Develop new video products that will communicate space weather to specific audiences – a capstone experience.

Certificate in Space Weather & Environment

Code	Title	Hours
EMGT 614	Natural Hazards Primer	3
SWEN 571	The Origins of Space Weather	3
SWEN 572	Impacts of Space Weather on the Technological World	3
SWEN 673	Effective Decision-Support for Space Weather Risks	3
SWEN 674	Space Weather Broadcast and Communications	3
Total Hours		15

Mathematics

The Programs

The Department of Mathematics offers:

- Mathematics Post-Baccalaureate Certificate (p. 469)
- Mathematics, M.Ed. (p. 470)

Courses are designed to be of optimum value and relevance to teachers of mathematics in secondary schools. Mathematics teachers who are not pursuing a degree may enroll as nondegree students and elect any course in mathematics or mathematics education for which they have the prerequisites.

Admission Requirements

Admission to the M.Ed. program in mathematics education is granted to those applicants whose mathematical preparation fulfills the mathematical proficiency requirement (see I below). Conditional admission is granted to those applicants who have satisfactorily completed the following Millersville University undergraduate mathematics courses or their equivalents: MATH 161 Calculus 1, MATH 211 Calculus 2, MATH 311 Calculus 3 and MATH 322 Linear Algebra 1. Such persons are granted full admission status upon fulfillment of the mathematical proficiency requirement.

Buchanan, J; Professor

College of Science and Technology

B.S., Davidson College, 1983; M.S., North Carolina State University, 1985; Ph.D., Ibid., 1993

Cardwell, Antonia; Associate Professor

College of Science and Technology

B.S., University of the Witwatersrand (Johannesburg), 1998; M.A., Kent State University, 2001; Ph.D., Ibid., 2005

Dever, Lindsay; Assistant Professor

College of Science and Technology
B.S., The College of New Jersey, 2015; M.A., Bryn Mawr College, 2019;
Ph.D., Bryn Mawr College, 2022

Fenwick, James; Professor
College of Science and Technology
B.S., Clarion State College, 1980; M.S., University of Vermont, 1983; Ph.D.,
University of Wyoming, 1985

Garber, Diana; Instructor
College of Science and Technology
B.A., Millersville University, 1991; M.Ed., Ibid., 1997

Han, Zhigang; Associate Professor
College of Science and Technology
B.A., Fudan University (China), 1997; Ph.D., Stony Brook University, 2006

Heitmann, Noel; Associate Professor
College of Science and Technology
B.S., The Pennsylvania State University, 1989; B.S., University of
Pittsburgh, 1996; M.A., Ibid., 1998; Ph.D., Ibid., 2003

Ma, Baoling; Associate Professor
College of Science and Technology
B.S., Ocean University of China, 2007; Ph.D., University of Louisiana-
Lafayette, 2012

Mikula, Richard; Professor
College of Science and Technology
B.S., Temple University, 1998; Ph.D., Rutgers, The State University of New
Jersey, 2006

Moss, Erin; Professor
College of Science and Technology
B.A., University of North Carolina at Asheville, 2001; M.S., University of
Connecticut, 2003; Ph.D., Purdue University, 2009

Robinson, Kevin; Associate Professor
College of Science and Technology
B.A., Messiah College, 1993; M.S., University of Florida, 1995; Ph.D., Ibid.,
2000

Stewart, Patrick; Assistant Professor
College of Science and Technology
B.S., Marshall University, 2011; M.A., Ibid., 2014; M.S., Virginia Polytechnic
Institute and State University, 2015; Ph.D., Bowling Green State University,
2020

Taylor, Cynthia; Professor
College of Science and Technology
B.S., Indiana University of Pennsylvania, 1988; M.S., Rensselaer
Polytechnic Institute, 2002; Ph.D., University of Missouri, 2011

Washington, H; Associate Professor
College of Science and Technology
B.S., Fayetteville State University, 1998; M.S., North Carolina State
University, 2001; Ph.D., Ibid., 2012

White, Janet; Professor
College of Science and Technology
B.A., Grove City College, 1988; M.Ed., Millersville University, 1994; Ph.D.,
American University, 2002

Wismer, Michael; Assistant Professor
College of Science and Technology

B.A., Messiah College, 1987; M.A., West Chester University, 1991; Ph.D.,
University of Delaware, 1997

Zhan, Mingquan; Professor
College of Science and Technology
B.S., Nanjing Normal University, 1990; M.S., Ibid., 1997; Ph.D., West
Virginia University, 2003

MATH 500: 3-12 s.h.

Co-Op Ed Experience in Math

Co-Op Ed Experience in Math

MATH 502: 4 s.h.

Linear Algebra

Systems of linear equations, matrix algebra and determinants; real
vector spaces, linear independence, basis and dimension; real inner
product spaces, Gram-Schmidt orthogonalization; eigen theory and
diagonalization; linear transformations and matrix representation. Prereq
or Coreq: MATH 311; MATH 310/520 recommended.

MATH 503: 4 s.h.

Probability and Stats for Tch

A rigorous one-semester study of probability, distribution theory and the
basics of statistical inference. Topics include probability, expectation,
discrete and continuous distributions, descriptive statistics and both
estimation and hypothesis testing for one- and two-sample problems.
Prereq: MATH 311.

MATH 504: 3 s.h.

Modern Algebra for Teachers

Algebraic properties of complex number systems, set theory, groups,
rings, integral domains and fields. MATH 310/520 and MATH 322/502.

MATH 505: 4 s.h.

Classical & Modern Geometry

Study of geometry from both classical and transformational points of
view. The classical part will focus on the axiomatic development of
various forms of geometry; the transformational part will focus on the
study of geometry in terms of two families of transformations: isometries
and similarities. Emphasis on investigating geometry using both classical
and transformational approaches and their interactions.

MATH 506: 3 s.h.

Modern Analysis for Teachers

Real number system, limits of sequences and functions, theory
of differentiation, Riemann integration, infinite series. Prereq:
MATH 310/520, 311, 322/502. MATH 345/504 recommended.

MATH 520: 3 s.h.

Logic and Foundations of Math

Theory of inference, symbolic logic, nature of axiom systems, validity
of proofs, consistency, independence, completeness, theory of sets and
cardinal numbers.

MATH 535: 3 s.h.

Statistical Methods 1

Survey of statistical methods used in research, education, behavioral
science and biomedical applications. Experimental designs discussed
regarding advantages, disadvantages, sampling problems and analysis.
Regression and analysis of variance. Prereq: An elementary probability or
statistics course. Offered in fall and periodically in summer.

MATH 536: 3 s.h.**Statistical Methods 2**

Continuation and extension of statistical methods introduced in Statistical Methods I (Math 535). Advanced topics in analysis of variance, randomized block designs and experimental designs. Prereq: Math 535 or permission of instructor. Offered in spring.

MATH 536H: 3 s.h.**Hon: Statistical Methods II****MATH 537: 1 s.h.****Statistical Problem Solving Seminar**

Capstone course designed to serve as outcome assessment for math majors enrolled in statistics option. Course involves problem solving, data analysis and statistical consulting. Materials drawn from real-world problems. Prereq: Math 535. Coreq: Math 536. Offered in spring.

MATH 566: 3 s.h.**Complex Variables**

Complex number system, analytic functions, elementary functions, contour integration, residues and poles, conformal mapping. Prereq: MATH 506 or equivalent. Offered infrequently.

MATH 577: 3 s.h.**Problems in Applied Math**

An investigation of one or more topics of current interest in applied mathematics. Specific topics to be covered vary but are announced each time the course is offered. Offered infrequently.

MATH 592: 3 s.h.**Graph Theory**

Finite graphs, multigraphs, digraphs and networks from theoretical, practical and historical perspectives. Specific topics include isomorphisms, graph variants, planarity and nonplanarity, traversability, colorings, flows, matchings and optimization algorithms. Prereq: MATH 502 or equivalent. Offered periodically.

MATH 592H: 3 s.h.**HNRS: Graph Theory****MATH 602: 3 s.h.****Equity Issues in Math Ed**

Designed for graduate level students with an interest in equity issues in mathematics education. In this course, we examine issues of equity in mathematics education from various theoretical and practical perspectives and long lines of race, gender, culture and socioeconomic status. It is a reading-intensive course that spans such topics as the achievement gap, tracking, culturally-relevant pedagogy, multiculturalism, the nature of mathematics and mathematics for democracy and social justice. Course assignments will be differentiated to ensure they are relevant to the concerns of both practicing teachers as well as students without a teaching background that intend to pursue further graduate study.

MATH 603: 3 s.h.**History of Mathematics**

Evolution of mathematical concepts from antiquity to the present century. Emphasis on eras of great mathematical activity.

MATH 604: 3 s.h.**Ethnomathematics**

This course aims to introduce Ethnomathematics as a field by examining mathematics across and within cultures. In addition, the course is designed to strengthen and expand students' understanding of mathematical topics (e.g., number systems, geometry, combinatorics, group theory) through study of the mathematics of world cultures. Furthermore, students will discuss ways in what is done in the course and develop school materials in Ethnomathematics.

MATH 606: 3 s.h.**Noyce - Transitioning**

Intended to address topics and concerns relevant to recently-certified NOYCE secondary mathematics teachers as they transition to their first year of teaching in a high-needs school district. Through readings, class discussions, individual presentations, and written assignments, participants reflect on their student teaching experiences, further explore challenges of working with diverse groups of students, and develop strategies to increase their effectiveness as a teacher in the context of a high-needs district. Instructor Permission required.

MATH 607: 3 s.h.**Noyce - Moving to Tenure**

Intended as an extension to MATH 606 and meant to address topics and concerns relevant to recently-certified NOYCE secondary mathematics teachers as they complete their first year of teaching in a high-needs school district. Through readings, class discussions, individual presentations, and written assignments, participants reflect on their experiences during the first year of teaching, further explore challenges of working with diverse groups of students, and develop strategies to increase their effectiveness as a teacher in the context of a high-needs district. Instructor Permission required.

MATH 610: 3 s.h.**Problem Solving Seminar**

Develops students' problem-solving abilities in mathematics and teaching of problem solving to high school students. Includes discussion of solutions to problems and the theories of problem solving. For both teachers and nonteachers. Offered periodically.

MATH 611: 3 s.h.**Learning Mathematics**

Investigation of the learning theory of constructivism and its application to the learning of mathematics. Emphasis on higher-order concept acquisition and schema development, and their relationship to mathematical instruction and teacher decision making. Individual differences in learning styles are also discussed. Prereq: teaching experience or permission of the instructor. Offered periodically.

MATH 613: 3 s.h.**Elem/Sec Math Connections**

This course is designed for graduate level students and will be of particular interest to practicing mathematics teachers of grades 7-12. In this course, we will explore the foundational concepts of the K-6 mathematics curriculum in significant depth while reflecting on ways to build strong connections between this elementary content and the content in the 7-12 curriculum. The goal is for students to see where their own teaching fits in the broader scheme of K-12 mathematics education so that they can design instruction that builds on their own students' prior understanding and contributes to a more holistic development for mid-level, middle, and high school mathematics learners. Course assignments may involve presentations, discussions, reading, written exams, papers, problem solving, problem posing, and instructional design.

MATH 614: 3 s.h.**Current Issues in Middle Schl**

Current issues relating to middle school mathematics instruction, including issues associated with teaching strategies as well as curricular issues. Central to this discussion will be the NCTM's Principles and Standards for School Mathematics and the PA Academic Standards for Mathematics. Prereq: teaching experience or permission of the instructor. Offered periodically.

MATH 615: 3 s.h.**Current Issues in Secndry Schl**

Current issues relating to secondary school mathematics instruction, including issues associated with teaching strategies as well as curricular issues. Central to this discussion will be the NCTM's Principles and Standards for School Mathematics and the PA Academic Standards for Mathematics. Prereq: teaching experience or permission of the instructor. Offered periodically.

MATH 617: 3 s.h.**Middle/Secdry Schl Innovatns**

Current curricular issues and teaching strategies associated with educational innovations that are invariant with respect to the middle school-secondary school boundary. Central to this discussion will be the NCTM's Principles and Standards for School Mathematics and the PA Academic Standards for Mathematics. Prereq: teaching experience or permission of the instructor. Offered periodically.

MATH 618: 3 s.h.**7-12 Assessment**

Course for secondary mathematics teachers who wish to explore the nature of the mathematics assessment from a variety of perspectives. The course will examine traditional and non-traditional forms to assessment as well as the purpose of formative and summative assessments - allowing for discussion of the pros and cons to each. The course will also examine the impact of assessment tools on individual classroom instruction as well as within local departments, schools, districts, states and national education issues. The course will seek to actively involve teachers in a productive dialogue about the mathematics that they teach and explore a variety of levels at which the mathematics can be assessed. In order to do this, it will be necessary at times to expand and explore K-16 mathematics assessment at some length.

MATH 619: 3 s.h.**Advanced Perspectives**

Course is for secondary mathematics teachers at the middle or high school level who wish to explore the nature of the mathematics that they teach from a different viewpoint. The course will look at typical secondary mathematics topics including the real number system, polynomials, number theory, trigonometry and Euclidean geometry while examining concept analysis, problem analysis and mathematical connections. The course will actively involve in-service and pre-service teachers in a productive dialogue about the mathematics that they teach, and potential developmental or extensions that could be put into practice at each level. The class will also explore a variety of levels at which it may be appropriate to address these issues with their own students.

MATH 622: 3 s.h.**21st Century Math**

The intent of the course, Teaching Mathematics in The 21st Century, is to examine, study, and analyze teaching techniques and alternate approaches to teaching and learning mathematics in the 21st century. Students will experiment with a variety of pedagogies that are more in-line with the way in which 21st century students live rather than how they are often taught. Comparisons of multiple pedagogies (current, past and potential future) will be frequently made and discussed.

MATH 642: 3 s.h.**Linear Algebra**

Vector spaces, linear transformations, matrices, systems of equations, determinants. Prereq: MATH 502 or equivalent. Offered infrequently.

MATH 650: 3 s.h.**Topics in Geometry**

Topics selected from the parallel postulate and models for Euclidean and non-Euclidean geometries; projective geometry; local geometry of smooth space curves; geometry of smooth surfaces in space; geometry of space-time; finite geometries; representation of a geometry as a group of transformations acting on a set. Prereq: teaching experience or permission of instructor. Offered infrequently.

MATH 670: 3 s.h.**Operations Research**

Principles of model building; examples from linear optimization, network analysis, dynamic programming, probabilistic decision theory, Markov chains, queuing theory, simulation and inventory models. Applications and theory. Prereq: MATH 642 or equivalent, and a statistics course or equivalent. Offered periodically.

MATH 672: 3 s.h.**Math Modeling in Secondary Sch**

of the process of mathematical modeling. Creative and empirical model construction, model analysis and model research. Problems taken from a variety of disciplines. Some problems suitable for algebra and geometry students; others require some knowledge of calculus and statistics. Prereq: MATH 502 or its equivalent. Offered periodically.

MATH 675: 3 s.h.**Numerical Analysis**

Numerical treatment of equations, matrices and systems of equations; interpolation and approximation by polynomials; numerical integration; method of least squares. Prereq: MATH 502 and MATH 506, or equivalent. Offered in fall.

MATH 679: 3 s.h.**Technol in Secondary Schl Math**

Introduction to technologies currently available for teaching secondary mathematics. Emphasis on the use of modern graphics calculators, although computer software is also presented. Capabilities of the technologies examined in depth, but emphasis will be on the use of this technology in the classroom. Mathematical topics selected from elementary algebra, geometry, algebra II, precalculus and calculus. Prereq: secondary teaching experience. Offered periodically.

MATH 683: 3 s.h.**General Topology**

Set theory, metric and topological spaces, cluster points, closure, interior and boundary, continuity, homeomorphisms, product and quotient spaces, separation, compactness, connectedness, completeness. Prereq: MATH 502, 504 and 506.

MATH 691: 3 s.h.**Combinatorics**

Counting techniques including the multiplication principle, the addition principle, the pigeon-hole principle, permutations, combinations, the principle of inclusion-exclusion, recurrence relations, generating functions and Polya's Theory of Enumeration. Prereq: MATH 502 or equivalent. Offered periodically.

MATH 693: 3 s.h.

Number Theory

The classic higher arithmetic of integers: mathematical induction, divisibility, congruences, prime numbers, diophantine equations. Euler-Fermat Theorem and quadratic reciprocity. Offered periodically.

MATH 695: 3 s.h.

Topics in Mathematics

Investigation of one or more mathematical topics of current interest not covered in regular courses. Topics and methods of instruction may vary according to the needs and interests of students and faculty involved. Offered infrequently.

MATH 696: 1-3 s.h.

Independent Study

Selected topics. Prereq: permission of chairperson. Offered infrequently.

MATH 697: 1-3 s.h.

Topics in Math Education

Investigation of one or more topics of current concern in mathematics education not covered in regular courses. Course content varies according to the needs and interests of students and faculty involved. Offered infrequently.

MATH 698: 1-3 s.h.

Independent Study

Selected topics. Offered infrequently.

MATH 699: 3-6 s.h.

Thesis:

Thesis

Mathematics Post-Baccalaureate Certificate

For post-baccalaureate information please see the "Certification" section of the Graduate Course Catalog.

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
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*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.

COURSE REQUIREMENTS FOR APS

FOUNDATIONS COURSES - Choose 1 of the following options 1-2:	6
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Option 1. Foundations Graduate Level

EDFN 590	Social Foundation of Educ
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EDFN 545	Advanced Educational Psychology
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Option 2. Foundations Undergraduate Level

EDFN 211	Foundations Modern Education
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EDFN 241	Psychological Foundations of Teaching
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ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)

3.0 Minimum Cert GPA

undefined - See separate block

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

Application for APS status

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours **6**

Major in Mathematics, Post-Baccalaureate Cert

Code	Title	Hours
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Credits Required for Major

true

Minimum GPA 2.0 for Major

true

REQUIRED MATHEMATICS COURSES

A grade of C- or higher is required in all required math courses, except MATH 464.

MATH 161	Calculus 1	4
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MATH 211	Calculus 2	4
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History of Mathematics - Choose 1 of the following:	3
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MATH 301	History of Mathematics
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MATH 603	History of Mathematics
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Intro Math Proof - Choose 1 of the following:	3
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MATH 310	Intro to Mathematical Proof
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MATH 520	Logic and Foundations of Math
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MATH 311	Calculus 3	4
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Linear Algebra I - Choose 1 of the following:	4
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MATH 322	Linear Algebra 1
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MATH 502	Linear Algebra
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Abstract Algebra I - Choose 1 of the following:	3
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MATH 345	Abstract Algebra 1
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MATH 504	Modern Algebra for Teachers
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Survey of Geometry or Transfrmtnl Geometry - Choose 1 of the following:	3-4
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MATH 353	Survey of Geometry
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MATH 355	Transformational Geometry
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MATH 505	Classical & Modern Geometry
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MATH 650	Topics in Geometry
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Real Analysis I - Choose 1 of the following:	3
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MATH 464	Real Analysis 1
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MATH 506	Modern Analysis for Teachers
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REQUIRED OPTION COURSES

STATISTICS REQUIREMENT - Choose 1 of the following options 1-2:	4-6
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Option 1. Intro to Probability and Statistics - Choose 1 of the following:

MATH 333	Probability and Statistics
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MATH 503	Probability and Stats for Tchr	
Option 2. Math Statistics I and Statistics II - Choose 2 of the following:		
MATH 335	Mathematical Statistics 1	
MATH 435	Mathematical Statistics 2	
MATH 535	Statistical Methods 1	
MATHEMATICS ELECTIVES - Choose 6 hours from:		6
MATH 333	Probability and Statistics	
MATH 335	Mathematical Statistics 1	
MATH 353	Survey of Geometry	
MATH 355	Transformational Geometry	
MATH 365	Ordinary Differential Equation	
MATH 370	Operations Research	
MATH 375	Numerical Analysis	
MATH 393	Number Theory	
MATH 395	Introduction Combinatorics	
MATH 408	Topics in Mathematics	
MATH 418	Topics in Math Education	
MATH 422	Linear Algebra 2	
MATH 435	Mathematical Statistics 2	
MATH 438	Topics in Statistics	
MATH 445	Abstract Algebra 2	
MATH 457	Elementary Differential Geometry	
MATH 465	Real Analysis 2	
MATH 467	Partial Differential Equations	
MATH 471	Mathematical Modeling	
MATH 472	Financial Mathematics II	
MATH 478	Topics in Applied Mathematics	
MATH 483	Point-Set Topology	
MATH 498	Independent Study	
MATH 503	Probability and Stats for Tchr	
MATH 535	Statistical Methods 1	
MATH 536	Statistical Methods 2	
MATH 566	Complex Variables	
MATH 577	Problems in Applied Math	
MATH 592	Graph Theory	
Any 6-level MATH course(s)		
Total Hours		41-44

Req Related for Mathematics, Post-Bacc Cert

Code	Title	Hours
REQUIRED RELATED COURSES		
Intro. to Computing I		4
CSCI 161	Introduction to Programming 1	
CSCI 140	Discrete Structures	4
Total Hours		8

Professional Education - Certification

Code	Title	Hours
FOUNDATIONS BLOC		
We recommend 590 and 545 for Post-Bacc students. These courses each require 35 hours field placement at an urban school. Offered in the evenings Fall and Spring. Also offered in Summer Session. If enrolling in EDFN 211/241, please register for both courses in the same block.		
Foundations of Modern Education - Choose 1 of the following:		3
EDFN 590	Social Foundation of Educ	
EDFN 211	Foundations Modern Education	
Psychological Foundations of Teaching - Choose 1 of the following:		3
EDFN 545	Advanced Educational Psychology	
EDFN 241	Psychological Foundations of Teaching	
APS - PROFESSIONAL BLOC		
Students must meet APS eligibility requirements prior to registering. Course Appropriate PRAXIS II Exam should be taken after Professional Bloc, but prior to Student Teaching.		
Issues in Secondary Education - Choose 1 of the following:		3
EDSE 521	Issues in Second Education	
EDSE 321	Issues in Secondary Education	
Content Area Literacy for Diverse Classrooms - Choose 1 of the following:		3
EDSE 340	Content Area Literacy for Diverse Classrooms	
EDSE 540	Cntnt Area Litrcy Divers Class	
Secondary Students w/Disabilities in Inclusive Settings - Choose 1 of the following:		3
SPED 346	Secondary Students w/Disabilities in Inclusive Settings	
SPED 546	Sec Stdnts w Disab Inclu Sttgs	
MATH 405	Teaching Math in Secondary Schools 2	3
STUDENT TEACHING SEMINAR		
File your Intent to Student Teach Card one year prior to the beginning of the semester in which you wish to Student Teach. Click here to access the Student Teaching Website		
EDSE 471	Student Teaching Seminar	3
STUDENT TEACHING SEMESTER		
Students must meet APS eligibility requirements prior to registering. Submit your Teacher Certification Packet 90 days prior to completion of your certification program. Click here to access the packet on the Certification Website.		
Student Teaching - Choose 9 hours from:		9
EDMA 461	Student Teaching in Math	
EDMA 462	Student Teaching in Math	
Total Hours		30

Mathematics, M.Ed.

The Department of Mathematics offers graduate coursework in mathematics and mathematics education, and offers the M.Ed. in mathematics education. Courses are designed to be of optimum value and relevance to teachers of mathematics in secondary schools. Mathematics teachers who are not pursuing a degree may enroll as nondegree students and elect any course in mathematics or mathematics education for which they have the prerequisites.

Mathematics Proficiencies - MED MATH

Code	Title	Hours
Demonstrated mathematical proficiency is required for the MED Mathematics. Deficiencies will be addressed in your offer of admission. If you have met proficiency requirements, and this is not reflected as complete, your advisor should notify the College of Graduate and Professional Studies		
Required Mathematics Proficiencies		
Linear Algebra Proficiency Needed		4
MATH 502	Linear Algebra	
Probability Statistics Proficiency Needed		4
MATH 503	Probability and Stats for Tchr	
Modern Algebra Proficiency Needed		3
MATH 504	Modern Algebra for Teachers	
Transformational Geometry Proficiency Needed		4
MATH 505	Classical & Modern Geometry	
Real Analysis Proficiency Needed		3
MATH 506	Modern Analysis for Teachers	
Total Hours		18

MED Professional Core Requirements

Code	Title	Hours
PROFESSIONAL CORE		
Methods of Research or Statistical Methods I - Choose 1 of the following:		3
EDFN 601	Research Methods	
MATH 535	Statistical Methods 1	
Psychological Core Requirement - Choose 1 of the following:		3
EDFN 545	Advanced Educational Psychology	
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
PSYC 625	Human Growth and Development	
Philosophical Core Requirement - Choose 1 of the following:		3
EDFN 511	Comparative Education	
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Total Hours		9

Major in Mathematics Education - MED

Code	Title	Hours
No more than 2 courses numbered lower than 510 may count toward your major. A B- or better must be earned.		
MATHEMATICS REQUIRED COURSES		
MATH 603 and 604 are considered equivalent courses. Credit will not be given for both.		
Required Math Courses - Choose 4 of the following:		12-15
MATH 502	Linear Algebra	
MATH 503	Probability and Stats for Tchr	
MATH 504	Modern Algebra for Teachers	
MATH 505	Classical & Modern Geometry	
MATH 506	Modern Analysis for Teachers	
MATH 520	Logic and Foundations of Math	

MATH 535	Statistical Methods 1
MATH 536	Statistical Methods 2
MATH 566	Complex Variables
MATH 577	Problems in Applied Math
MATH 592	Graph Theory
MATH 642	Linear Algebra
MATH 650	Topics in Geometry
MATH 670	Operations Research
MATH 675	Numerical Analysis
MATH 683	General Topology
MATH 691	Combinatorics
MATH 693	Number Theory
MATH 695	Topics in Mathematics
MATH 696	Independent Study

Required Math Education Courses - Choose 3 classes from:

MATH 602	Equity Issues in Math Ed
MATH 603	History of Mathematics
MATH 604	Ethnomathematics
MATH 610	Problem Solving Seminar
MATH 611	Learning Mathematics
MATH 613	Elem/Sec Math Connections
Any MATH 614-617 course(s)	
MATH 672	Math Modeling in Secondary Sch
MATH 679	Technol in Secondary Schl Math
MATH 697	Topics in Math Education
MATH 698	Independent Study

THESIS OR NON-THESIS REQUIREMENTS

undefined - Choose 1 of the following options 1-2:	6
Option 1. Non-Thesis Option - Mathematic Electives - Choose 6 hours from:	
Any MATH 510-698 course(s)	
Option 2. Thesis Option	
MATH 699	Thesis:

Field Experience

All students must complete a field experience through a math education thesis or a research project in math education.

Capstone Requirement

Comprehensive oral presentation required.

Total Hours **18-21**

Nursing

The Programs

The Department of Nursing offers:

- Nursing, D.N.P. (p. 476)
- Nursing, M.S.N. - Family Nurse Practitioner (p. 477)
- Nursing, M.S.N. - Nursing Education (p. 478)
- Nursing, M.S.N. - Nursing Informatics (p. 478)
- Nursing, M.S.N. - Nursing Leadership (p. 479)
- Nursing, M.S.N. - School Nursing (p. 479)
- Nursing, Post-Master's Certificate, Family Nurse Practitioner (p. 480)

- Nursing, Post-Master's Certificate, Nursing Informatics (p. 480)
- School Nursing, Post-Baccalaureate Certification (p. 480)

The Millersville University RN-BSN, MSN, post-MSN FNP certificate, and DNP programs are accredited by the National League for Nursing Commission for Nursing Education Accreditation (NLN CNEA) located at 2600 Virginia Avenue, NW, Washington, DC 20037. 202-909-2487.

Chronister, Michele; Assistant Professor
College of Science and Technology
B.S., University of Pittsburgh, 1993; M.N., Millersville University, 2014

Hartmann, Teresa; Assistant Professor
College of Science and Technology
B.S.N., Millersville University, 1987; M.S.N., Widener University, 1992;
Ph.D., Ibid., 2016

Kuhns, Kelly; Professor
College of Science and Technology
B.S.N., Lycoming College, 1994; M.S.N., Villanova University, 2000; Ph.D.,
Ibid., 2011

Lambert, Dawn; Associate Professor
College of Science and Technology
B.S.N., Millersville University, 1994; M.S.N., West Chester University, 2008;
Ph.D., Capella University, 2015

Lee, Linda; Assistant Professor
College of Science and Technology
B.S., East Stroudsburg University, 1982; M.S., University of Delaware,
1989

Matincheck, Tracee; Instructor
College of Science and Technology
A.A., Harrisburg Area Community College, 2002; B.S.N., Pennsylvania
State University, 2007; M.S.N., Millersville University, 2016

Minter, Cayleigh; Assistant Professor
College of Science and Technology
B.S.N., York College of Pennsylvania, 2008; M.S.N., Millersville University,
2014

Monn, Jenny; Associate Professor
College of Science and Technology
B.S., The Pennsylvania State University, 1987; R.N., St. Joseph Hospital
School of Nursing, 1995; B.S.N., Millersville University, 2003; M.S.N., Ibid.,
2007; D.N.P., York College of Pennsylvania, 2015

Moyer, Susan; Assistant Professor
College of Science and Technology
B.S.N., Bloomsburg University, 2001; M.S.N. Villanova University, 2007;
Ph.D., Ibid., 2019

Rotondo, Kelly; Assistant Professor
College of Science and Technology
B.S.N., LaRoche College, 2002; M.S.N., Waynesburg College, 2004; D.N.P.,
Waynesburg University, 2009

NURS 501: 3 s.h.

Role Development and Theoretical Foundations of Advanced Practice
Serves as the introductory course for the Master's of Science in Nursing degree. It is designed to provide a foundation to advance practice nursing. In this course, students will explore nursing concepts and theory. Emphasis is placed on bridging the theory-practice gap. Students will apply this theoretical basis in exploring advanced practice role development. Advanced practice core competencies will be introduced and analyzed.

NURS 502: 3 s.h.

Research and Evidence-Based Practice Methodology
Advanced research in nursing builds on previous knowledge of research and statistics to develop an evidenced-based approach to practice. The learner will analyze methods and techniques of research and interpret their usefulness for application in practice. Theory and practice will be used in defining nursing problems and in development of a literature review. 3 hrs. theory. Prereq/Coreq: NURS 501

NURS 503: 3 s.h.

Issues and Roles in Advanced Nursing Practice
In-depth study of the issues of advanced nursing practice, focusing on the historical, social and political forces which impact advanced nursing practice. Advanced practice roles in nursing are explored and analyzed. 3 hrs. theory. Offered in fall.

NURS 504: 3 s.h.

Technology, Informatics & Professional Nursing Practice
Discussion of the ways in which information and technology influence practice and decision making in various aspects of nursing practice, such as clinical, education, leadership and research, is the major focus of the course. Advances in technology that support and enhance the delivery of care and interdisciplinary communication are addressed. The legal, ethical, cultural, economic and social factors affecting healthcare information technology are also explored.

NURS 506: 3 s.h.

Sustainable Health
Discussion of advanced concepts regarding environmental health and evidence-based nursing in the context of sustainable development and global well-being. Using the 17 UN Sustainable Development Goals as a comprehensive framework for understanding health, the environment, and human interaction, as well as how to promote public, international, and planetary health including multinational, interdisciplinary systems supporting all of humanity. Explores and underscores the important role nurses fulfill in promoting local and global health within the framework of sustainability.

NURS 508: 4 s.h.

Advanced Clinical Knowledge
Builds upon previous knowledge in physical assessment, pathophysiology, and pharmacology. Using a systems approach, examines principles of select well and disease states. Provides the opportunity to assess, analyze, and explore the findings, treatment, and evaluation of common health issues. Analyzes the relationships between assessment findings, physiologic changes, and pharmaceutical treatments.

NURS 511: 3 s.h.

Pathophysiology for Advanced Practice
Advanced physiology and pathophysiology at the cellular, organic and systemic level. Interdependence of organ systems in health and disease is emphasized as a basis for clinical assessment and management. 3 hrs. theory. Offered in spring.

NURS 512: 3 s.h.**Health Assessment and Diagnostics Evaluation for Advanced Practice**

Clinical course. Provides framework for diagnosis and clinical decision making for the advanced practice nurse. Assessment skills and procedures for individuals across the life cycle will be developed. Information gathered in the assessment process will provide a basis for the evaluation of the health status of individuals. An analysis of an individual's response to wellness and illness will include examination of concepts of cultural influences, health-seeking behaviors, and stress and adaptation. 2 hrs. theory, 3 hrs. lab. Prereq: NURS 501, 502, 503 and 511. Offered in fall.

NURS 513: 3 s.h.**Pharmacology & Alternative Therapeutics in Nursing Practice**

Principles of pharmacology applied to the therapeutic management of the individual and the family across the life cycle. Emphasis on prescribing and monitoring pharmacology and alternative therapeutic regimens. Adverse drug reactions and multiple drug interactions are included. 3 hrs. theory. Prereq: NURS 501, 502, 503 and 511. Offered in fall.

NURS 515: 3 s.h.**Advanced Nursing Practice Clinical Practicum**

This course provides an opportunity to integrate theory and practice through an intensive practicum experience. The practicum provides the opportunity for the non-clinical track MSN student to develop advanced clinical experience within a selected population and/or setting. Prereq: NURS 508

NURS 521: 7 s.h.**Clinical Management of the Young Family**

This course provides the family nurse practitioner student with the necessary knowledge and clinical experience to assist young families with health promotion and chronic and acute health problems. The biophysical, cognitive and psychosocial development of members of the young family is explored. A focus on women's health issues is incorporated in the course content. The role of the family nurse practitioner in caring for the young family is identified. 3 hrs. theory, plus clinical component. Prereq: NURS 501, 503, 511, 512, 513.

NURS 522: 7 s.h.**Clinical Management of the Mature Aging Family**

This course provides the family nurse practitioner with the necessary knowledge and clinical experience to assist mature and aging families with health promotion and chronic and acute health problems. The biophysical, cognitive and psychosocial development of members of mature and aging families is explored. A focus on women's health issues is incorporated in the course content. The role of the family nurse practitioner in caring for mature and aging families is identified. 3 hrs. theory, plus clinical component. Prereq: NURS 521.

NURS 523: 5 s.h.**Family Nurse Practitioner Internship**

This course provides an opportunity to integrate theory and practice through an intensive internship experience. Focus is on the domains and competencies of the nurse practitioner as direct provider of primary healthcare. Biweekly seminars will be conducted to discuss current topics. The student will be guided in the practicum by nurse practitioner and physician preceptors in a variety of settings. 1 hr. theory, plus clinical component. Prereq: NURS 521 and 522.

NURS 550: 3 s.h.**School Nursing and Diverse Learners**

Focus on the specialty practice area of school nursing, examining the role of the school nurse with emphasis on the special health needs of children in the school setting. Management and evaluation of the special health care needs of diverse learners are discussed with an understanding of the need for outcome criteria. Emphasis is placed on identifying accommodations and adaptations for diverse learners. An overview of common physiological and psychological diagnoses of the school age population are discussed as well as the legal responsibilities of the school nurse when caring for this diverse population.

NURS 560: 5 s.h.**School Nursing Clinical Practicum**

Focus on the specialty practice area of school nursing. Laws pertaining to school nursing practice and legal considerations for school nurses are explored. Individualized health plans that address the special health needs of children in the school setting are developed. Management and evaluation of the comprehensive school health program are discussed with an understanding for the need of outcome criteria. Clinical experiences provide the student an opportunity to apply concepts learned in the various school nursing program courses in school health settings at both elementary and secondary levels. Prereq: Undergraduate: faculty permission; Graduate: Baccalaureate degree

NURS 579: 1-4 s.h.**Experimental Course**

Experimental Course Number for Nursing

NURS 586: 1-3 s.h.**Topics in Nursing**

In-depth investigation and development of one or more topics of current interest in nursing that are not normally covered in regular courses. Topics/methods will vary according to the needs of students and faculty.

NURS 587: 1-3 s.h.**Topics in Nursing**

In-depth investigation and development of one or more topics of current interest in nursing that are not normally covered in regular courses. Topics/methods will vary according to the needs of students and faculty.

NURS 588: 1-3 s.h.**Topics in Nursing**

In-depth investigation and development of one or more topics of current interest in nursing that are not normally covered in regular courses. Topics/methods will vary according to the needs of students and faculty.

NURS 610: 3 s.h.**School Nursing: Grades PK-4 Practicum**

In this course, the focus is on the role of the school nurse in caring for students in grades PK-4. There is an emphasis on the nursing process as it is applied to the school age population while considering acute, chronic, and episodic illness and the overall healthcare needs of the PK-4 grade school population including those with special health needs, disabilities, diverse cultures, and English Language Learners. The physical, emotional, psychosocial, and developmental needs of the PK-4 grade population are explored. Interprofessional collaboration within the school nurse role in the elementary school setting is examined. This course provides 50 of the required 100 hours of practicum experience focusing on the PK-4 grade population under the guidance of a certified school nurse. Prereq: Current unencumbered RN License

NURS 611: 3 s.h.**School Nursing: Grades 5-12 Practicum**

In this course, the focus is on the role of the school nurse in caring for students in grades 5-12. There is an emphasis on the nursing process as it is applied to the school age population while considering acute, chronic, and episodic illness and the overall healthcare needs of the 5-12 grade school population including those with special health needs, disabilities, diverse cultures, and English Language Learners. The physical, emotional, psychosocial, and developmental needs of the 5-12 grade age population are explored. Interprofessional collaboration within the school nurse role in the middle and high school setting is examined. This course provides 50 of the required 100 hours of practicum experience focusing on the 5-12 grade population under the guidance of a certified school nurse. Prereq: Current unencumbered RN License

NURS 612: 3 s.h.**School Nursing: Health Promotion and Disease Prevention**

This course focuses on the school nurse's role in promotion of health in individuals and the school community with an emphasis on vulnerable populations. The integration of evidence-based practice and epidemiological approaches to promote consistent and equitable care for individuals and diverse populations in school communities is explored.

NURS 613: 3 s.h.**School Nursing: Considerations for the Needs of Diverse Learners and English Language Learners**

This course focuses on the legal mandates of school nursing and how these laws affect the certified school nurse. There is an emphasis on the special health needs of children in the school setting and the nurse's role in identifying health and health education related accommodations and adaptations for diverse learners in order to support student health and promote optimal learning.

NURS 630: 3 s.h.**Effective Teaching: Theories and Methods in Nurse Ed**

Educational theories and methods are explored in this course. The advantages and challenges of technology-based teaching and learning are presented. Past and future trends in education are discussed. Theory and research findings about the learning process, the nature of the learner and the goals of instruction are discussed.

NURS 631: 3 s.h.**Measurement and Evaluation in Nurse Education**

This course introduces the student to the concepts of measurement and evaluation. Techniques in designing instructional objectives and test items are developed. Grading methods and test analysis are explored. The purpose of program evaluation is emphasized.

NURS 632: 3 s.h.**Nursing Curriculum and Program Design**

This course focuses on curriculum foundations, principles and issues. Through investigation and discussion, students learn about curriculum threads and designing effective programs. The importance of organizational mission and priority in relation to program development is emphasized.

NURS 633: 3 s.h.**Nursing Education Practicum I**

This course provides an opportunity to integrate theory and practice through a practicum experience in nursing academic education. Focus is on the role of the nurse educator and the learning environment. Seminars will be conducted to discuss current topics related to nursing academic education. The students will be guided in the practicum by preceptors who are nurse educators in academia. (Prereq: N630; N631, N632)

NURS 634: 3 s.h.**Nursing Education Practicum II**

This course provides an opportunity to integrate theory and practice through a practicum experience in nursing professional development. Focus is on the role of the nurse educator and the learning environment. Seminars will be conducted to discuss current topics related to nursing professional development. The students will be guided in the practicum by preceptors who are nurse educators in a professional development role. (Prereq: N630; N631, N632)

NURS 641: 3 s.h.**Advanced Nursing Informatics**

Advanced discussion the role and impact of the nursing informatics specialist. Analysis of the impact on health and safety (QSEN) outcomes, as well as the impact of the human-technology interaction is included. Additional focus on the impact of technological and societal trends on patients and patient outcomes, as well as compliance and regulatory mandates.

NURS 642: 3 s.h.**Healthcare Informatics Systems Analysis and Design**

Focused on the impacts of knowledge discovery and meta-analysis of data trends to impact healthcare outcomes. Understanding workflow processes, informatics solutions and their interplay are core concepts address. Methods to synthesize knowledge, use decision support and outcomes management to support reimbursement and advanced nursing science are addressed.

NURS 643: 3 s.h.**Healthcare Project Management**

Examination of the role of design thinking and project management on operational architecture and information management. Consideration of the system life cycle to manage information exchange and accomplish key clinical operations.

NURS 644: 3 s.h.**Healthcare Data Science and Data Analytics**

Introduction the principles of data science and data analytics in context of healthcare. Focus on use of data, data visualization, and data analysis to impact and improve patient care outcomes and healthcare workflow processes. Examination spans generation of quality data using common languages through analysis, application, and evaluation.

NURS 645: 3 s.h.**Practicum in Nursing Informatics**

This course provides an opportunity to integrate theory and practice through an intensive practicum experience. The practicum provides the opportunity for the nursing informatics student to develop advanced clinical experience within a selected population and/or setting (112 hours of practicum required).

NURS 650: 3 s.h.**Nursing Leadership and Administration**

Focused on the integration of the conceptual and theoretical frameworks of leadership into the role of the nurse leader. The role of the nurse leader to support the full spectrum of healthcare is addressed and analyzed. Additional focus on the role of change theory, organizational development, and complex healthcare systems.

NURS 651: 3 s.h.**Leading Quality and Safety**

Focused on the role of the nurse leader in advancing the quality of patient care within complex healthcare systems. Investigates the impact of performance and quality improvement on patient safety. Using the guidelines developed by the Quality and Safety Education for Nurses (QSEN), methods to positively impact patient safety and care quality are discussed.

NURS 652: 3 s.h.**Healthcare Financing and Value-Based Care**

Focus on the healthcare industry's shift to value-based and risk-based reimbursement. Analysis of the impact of the change on every component of healthcare. Focused on high-value, cost-effective, and evidence-based measures that incorporate innovation, resource stewardship, and systems thinking. Examines new payment models, where reimbursement is tied directly to clinical, organizational, and consumer outcomes.

NURS 653: 3 s.h.**Leading Others & Organizations**

Focus on the essential competencies of the nurse leader in relation to communication, conflict management, employee development, and building relationships. Developing a business acumen through use of change management, decision-making strategies, and systems thinking. Additional emphasis on strategic planning, project management, and policy development.

NURS 654: 3 s.h.**Nursing Leadership Practicum**

Provides an opportunity to integrate theory and practice through an intensive practicum experience. The practicum provides the opportunity for the nursing leadership students to engage in an advanced leadership experience within a selected setting (112 practicum hours required)

NURS 686: 1-3 s.h.**Topics in Nursing**

In-depth investigation and development of one or more topics of current interest in nursing that are not normally covered in regular courses. Topics/methods will vary according to the needs of students and faculty.

NURS 687: 1-3 s.h.**Topics in Nursing**

In-depth investigation and development of one or more topics of current interest in nursing that are not normally covered in regular courses. Topics/methods will vary according to the needs of students and faculty.

NURS 688: 1-3 s.h.**Topics in Nursing**

In-depth investigation and development of one or more topics of current interest in nursing that are not normally covered in regular courses. Topics/methods will vary according to the needs of students and faculty.

NURS 691: 1-3 s.h.**Ind Stdy Adv Nursing Practice**

In-depth approach to an individually structured problem. Focus will vary according to the needs of students and faculty involved.

NURS 698: 3 s.h.**Capstone Project**

Capstone project is intended to be innovative, scholarly, and relevant to advanced nursing practice. It is completed under the supervision of an individual faculty member. Taken during last year of MSN curriculum courses.

NURS 700: 3 s.h.**Transformational Leadership**

Synthesize political action related to the structure of healthcare delivery. Analyzes factors that influence the production, financing, and distribution of healthcare services in the United States and globally. Utilize the social justice model as framework for in-depth analysis and critique of the social, political and economic factors affecting advanced/doctoral nursing practice. Topics include basic economic theory, market drivers, healthcare financing and reimbursement, cost/benefit analysis and healthcare entrepreneurship.

NURS 701: 3 s.h.**Health Policy & Healthcare Econ**

Emphasizes the roles of the advanced practice nurse as a clinical scholar, clinical expert and as a leader in evidence-based practice and transformation of health care. Evolution and need for doctoral education in nursing is considered. Theories of leadership change and transformation, and innovation diffusion are introduced. Systems theory, organizational and other mid-level theories are addressed. The interface between ethical and regulatory/legal obligations will be examined.

NURS 702: 3 s.h.**Applied Research**

The relationships among basic and applied research, translational science, and evidence-based practice in healthcare settings are examined through this course. Research elements and methods are analyzed with an emphasis on research ethics and reading, interpreting, and evaluating quantitative and qualitative research studies that can be used to inform nursing practice.

NURS 703: 3 s.h.**Epidemiology & Health Promo**

Focus on the integration of evidence-based practice and epidemiological approaches to promote consistent and equitable care for diverse populations. Data will be critically analyzed to identify barriers to equitable quality healthcare. Analyze epidemiological, biostatistical, occupational, and environmental data in the development, implementation, and evaluation of clinical prevention and population health. Consideration of ethically sound solutions to complex issues related to individuals, communities and populations.

NURS 704: 3 s.h.**Complex Health Care Systems**

Focus on the major theories and approaches to sustainable healthcare business practices. Key areas of interest include application of organizational theory, consideration of organizational culture and ethical decision-making. Focus on quality improvement and ensuring patient safety, with an emphasis on outcome indicators and the relationship among processes, outcomes and costs.

NURS 705: 3 s.h.**Evidence-Based Practice Process**

Focuses on developing the necessary skills needed for applying ESP processes within the context of a practice setting, health care organization, or community. Provides the foundation for the DNP Capstone experience. Emphasis on the scholarly, systematic evidenced-based practice approach to problemsolving. The relationship between nursing interventions and patient outcomes is examined and opportunities for improvement are sought.

NURS 706: 3 s.h.**Statistical Methods**

Exploration of statistical methods commonly used by advanced practice nurses to understand human health patterns. Descriptive and inferential statistics are applied through the use of statistical software packages and manipulation of datasets. Appraisal of appropriateness of research methods and techniques is included.

NURS 707: 3 s.h.**Scholarly Project Design Sem**

Focus is on the design and defense of the student's proposed capstone project. Integration of foundational courses to develop, design and successful defend the proposed capstone project. Seminar style allows for increased interaction with faculty advisors and course peers. 3 cr; 1 cr lecture 2 cr (110 hours) clinical.

NURS 708: 3 s.h.**Informatics & Data Management**

Design, select, and use information systems/technology to evaluate programs of care, outcomes of care, and care systems. Examine how information systems/technology provide a mechanism to apply budget and productivity tools, practice information systems and decision supports, and web-based learning or intervention tools to support and improve patient care.

NURS 709: 3 s.h.**Implementation Seminar**

Focus is on the implementation of the student's capstone project, as well as collection of specified outcome data. Students will engage in their selected area of practice to enact the previously approved capstone project. Seminar style allows for increased interaction with faculty advisors and course peers. 3 cr, 1 cr lecture, 2 cr (110 hours) clinical.

NURS 710: 3 s.h.**Transforming Healthcare**

This culminating course reflects the student's ability to assume a leadership role, employ effective communication and collaboration skills, evaluate practice, and successfully negotiate transformational change in the healthcare setting. Special attention is paid to the theoretical underpinnings and the broader implications of the capstone projects.

NURS 711: 3 s.h.**Evaluation Seminar**

This seminar course focuses on the evaluation of the previously implemented EBP project. Students will engage in project evaluation/data analysis, as well as discussion with their class and committee. The seminar will culminate in the final defense of the capstone project. The defense will include an explanation of the project implementation and analysis. Successful defense will result in completion of the course of study. 3 cr, 1 cr. lecture and 2 cr. (110 hours) clinical.

NURS 786: 1-6 s.h.**Topics: Clin Adv Doct Nsg Prac**

In-depth clinical practice in the current interest or need in advanced nursing which are not normally covered in regular courses. This clinical topics course will vary according to the needs of students and faculty involved.

NURS 787: 1-6 s.h.**Topic Adv Doct Nsg Pract**

In depth investigation and development of one or more topics of current interest in advanced nursing which are not normally covered in current courses. Special topics to be covered and methods used will vary according to the needs of students and faculty involved.

NURS 791: 1-3 s.h.**Ind Stdy: Doct Nurs Practice**

In-depth approach to an individually structured problem. Focus will vary according to the needs of students and faculty involved.

NURS 799: 3,6 s.h.**Appl Supervsn:Schl Hlth Srvc**

Provides field experiences in a school setting, with emphasis on the comprehensive role of school health services supervision, methods for personnel evaluation, observing and supervising school health personnel budget, staff in-service development, health curriculum evaluation, and school health program assessment/revision and community relations. Prereq: EDSU 700, 701 and 703.

Nursing, D.N.P.

Doctor of Nursing Practice

The purpose of the Doctor of Nursing Practice program is to further educate clinical experts with the knowledge and skills in systems analysis and evidence-based integration and evaluation. It prepares individuals to design improved methodologies to promote safe, timely, effective, equitable and patient-centered care.

The DNP program is tailored to the needs of certified, advanced practice nurses, including nurse practitioners, clinical nurse specialists, certified nurse midwives and certified registered nurse anesthetists. The 36-credit program provides the advanced practice registered nurse with tools to engage in evidence-based, scholarly clinical practice. The two-year program uses a blended format to offer courses, with each course meeting on campus once per semester, with the remaining work conducted online. A minimum of 330 clinical hours are required and must be approved and academically supervised by a faculty member and/or preceptor. A scholarly project is required and will focus on utilizing evidence-based practice research to improve healthcare safety, quality and/or outcomes for individuals, groups or populations. The finished product will be a publishable manuscript.

The admission criteria requires a bachelor's degree in nursing and a master's degree in nursing or closely related field (i.e., MPH) with a minimum GPA of 3.5 in the master's degree. Applicants must have a valid RN nursing license. This is in addition to recommendations, curriculum vitae and a written statement outlining the goal of the DNP project.

The program is designed as a cohort model, beginning during the summer session each year. Courses are offered year-round, allowing for completion in a two-year time frame. Each student is assigned a faculty advisor based on his/her clinical interests.

Learning Outcomes and Assessment

The Doctor of Nursing Practice program outcomes integrate nursing science with advanced levels of system thinking and professional accountability to design, deliver and evaluate evidence-based practice to improve healthcare quality, safety and outcomes. These learning outcomes are:

- Initiate and participate in collaborative efforts with other disciplines to influence healthcare outcomes.
- Advocate for and provide leadership to develop policy that helps to share healthcare financing, regulation, access and delivery.
- Employ effective communication and collaborative skills in the development and implementation of practice models, peer review,

practice guide-lines, health policy, standards of care and/or other scholarly products.

- Use information technology and research methods to design, direct and evaluate quality improvement methodologies to promote safe, timely, effective, efficient, equitable and patient-centered care.

Major in Nursing (DNP)

Code	Title	Hours
Advanced Practice Nursing: Transformational Leadership		3
NURS 700	Transformational Leadership	
Health Policy Healthcare Economics		3
NURS 701	Hlth Policy & Healthcare Econ	
NURS 702	Applied Research	3
Epidemiology and Health Promotion		3
NURS 703	Epidemiology & Health Promo	
NURS 704	Complex Health Care Systems	3
NURS 705	Evidence-Based Practice Process	3
NURS 706	Statistical Methods	3
Capstone Design Seminar		3
NURS 707	Scholarly Project Design Sem	
NURS 708	Informatics & Data Management	3
Capstone Implementation Seminar		3
NURS 709	Implementation Seminar	
NURS 710	Transforming Healthcare	3
Capstone Evaluation Seminar		3
NURS 711	Evaluation Seminar	
Total Hours		36

Nursing, M.S.N. - Family Nurse Practitioner

Millersville University offers a Master of Science in Nursing (MSN) degree Family/individual across the lifespan nurse practitioner (FNP).

All class sessions are offered during weekday evenings in three-hour blocks of time face to face and/or in a multi-modal or distance learning format. Clinical courses for the FNP student require a minimum of 750 total clinical hours to successfully complete the program.

Individuals completing the MSN with family/individual across the lifespan nurse practitioner option are prepared to function as family nurse practitioners in a variety of settings, including clinics and primary-care settings.

The program (MSN) is accredited by the Commission of Collegiate Nursing Education (CCNE).

Admission Requirements

Applicants for the Master of Science in Nursing Family/individual across the lifespan family nurse practitioner program are referred to the *Admission Requirements* section for general criteria and guidelines for admission to the University.

Specific criteria required by the Department of Nursing include:

1. Baccalaureate degree in nursing from an accredited (ACEN, CNEA or CCNE) school of nursing.

2. Undergraduate grade-point average of at least 3.0 on a 4.0 scale. When GPA is below this, probational acceptance may be considered if the candidate demonstrates graduate study potential by other means.
3. Satisfactory completion of an undergraduate statistics course (equivalent to MATH 130 Elements of Statistics 1), physical assessment course, and a research course in nursing.
4. Computer literacy and access to a computer and internet service.
5. Three current academic and/or professional references.
6. Licensure as a registered nurse in Pennsylvania or in the state where clinical practice or internship is to be arranged.
7. Minimum of two years of clinical experience in nursing, three to five years is preferred.
8. Successful completion of a personal interview with the Nursing Admissions Committee.
9. Current résumé and statement of intent.
10. Verification of completion of statistics, research and physical courses.

Graduates are eligible to submit an application to the Pennsylvania State Board of Nursing (SBN) for designation as a Certified Registered Nurse Practitioner (CRNP) upon satisfactory completion of requirements and passing a national certification examination administered by either the American Nurses Credentialing Center (ANCC) or the American Academy of Nurse Practitioners (AANP).

A graduate of a nurse practitioner program may not practice as a CRNP unless authorized to do so by the Board. Board authorization is equivalent to receipt of a CRNP number. While the CRNP application is pending, the applicant may not be employed as a CRNP. (Refer to Pennsylvania CRNP Rules and Regulations Section 21:261 (b).)

Major in Nursing (MSN)

Code	Title	Hours
GRADUATE NURSING CORE		12
NURS 501	Role Development and Theoretical Foundations of Advanced Practice	
NURS 502	Research and Evidence-Based Practice Methodology	
NURS 503	Issues and Roles in Advanced Nursing Practice	
NURS 504	Technology, Informatics & Professional Nursing Practice	
ADVANCED NURSING PRACTICE CORE		9
NURS 511	Pathophysiology for Advanced Practice	
NURS 512	Health Assessment and Diagnostics Evaluation for Advanced Practice	
NURS 513	Pharmacology & Alternative Therapeutics in Nursing Practice	
NURSING CAPSTONE		3
NURS 698	Capstone Project	
FAMILY NURSE PRACTITIONER REQUIREMENTS - See separate block		
Total Hours		24

Concentration in Family Nurse Practitioner

Code	Title	Hours
NURS 521	Clinical Management of the Young Family	7
NURS 522	Clinical Management of the Mature Aging Family	7

NURS 523	Family Nurse Practitioner Internship	5
Total Hours		19

Nursing, M.S.N. - Nursing Education

Millersville University offers a Master of Science in Nursing (MSN) degree focus in Nursing Education (NUED). All classes are offered in an asynchronous online format. There two practicum courses, each requiring 112 hours of in person/precepted experiences. Graduates are prepared to function in various nurse educator roles, including academic educator, clinical instructor, and nurse professional development specialist.

The program (MSN) is accredited by the Commission of Collegiate Nursing Education (CCNE).

Admission Requirements

Applicants for the Master of Science in Nursing in Nursing Education program are referred to the *Admission Requirements* section for general criteria and guidelines for admission to the University.

Specific criteria required by the Wehrheim School of Nursing include:

1. Baccalaureate degree in nursing from an accredited (ACEN, CNEA or CCNE) school of nursing.
2. Undergraduate grade-point average of at least 3.0 on a 4.0 scale. When GPA is below this, probational acceptance may be considered if the candidate demonstrates graduate study potential by other means.
3. Satisfactory completion of an undergraduate statistics course (equivalent to MATH 130 Elements of Statistics 1), physical assessment course, and a research course in nursing.
4. Computer literacy and access to a computer and internet service.
5. Three current academic and/or professional references.
6. Licensure as a registered nurse in Pennsylvania or in the state where clinical practice or internship is to be arranged.
7. Successful completion of a personal interview with the Nursing Admissions Committee.
8. Current résumé and statement of intent.
9. Verified academic transcripts.

Major in Nursing (MSN)

Code	Title	Hours
GRADUATE NURSING CORE		12
NURS 501	Role Development and Theoretical Foundations of Advanced Practice	
NURS 502	Research and Evidence-Based Practice Methodology	
NURS 503	Issues and Roles in Advanced Nursing Practice	
NURS 504	Technology, Informatics & Professional Nursing Practice	
ADVANCED NURSING PRACTICE CORE		7
NURS 506	Sustainable Health	
NURS 508	Advanced Clinical Knowledge	
NURSING CAPSTONE		3
NURS 698	Capstone Project	

NURSING EDUCATION REQUIREMENTS - See separate block		
Total Hours		22

Concentration in Nursing Education

Code	Title	Hours
NURS 630	Effective Teaching: Theories and Methods in Nurse Ed	3
NURS 631	Measurement and Evaluation in Nurse Education	3
NURS 632	Nursing Curriculum and Program Design	3
NURS 633	Nursing Education Practicum I	3
NURS 634	Nursing Education Practicum II	3
Total Hours		15

Nursing, M.S.N. - Nursing Informatics

The MSN in informatics will be a critical role in the future of healthcare organizations. The MSN informatics track will help the student to interpret, analyze, and use electronic health record technology to promote quality/safe patient care. Every healthcare system is looking to be more efficient and effective in caring for patients and this degree will empower the graduates to take leadership roles toward this movement. The curriculum will include the following: nursing informatics, management of data and information, healthcare project management skills, and systems analysis and design. The career advancements that exist in this field are endless, they include responsibilities centered around automated patient and clinical data entry, operations, data analysis, patient-family access, and most importantly clinical decision-making tools for practitioners, such as nurses and physicians. The ability to provide timely, accurate, patient-centered care that improves outcomes is very much supported by nursing informatics departments. Many of the work hours of nurses are spent on documentation, which is important, but the ability to improve and stream-line workflows enhances job satisfaction for nurses and other healthcare employees. This also falls under the hand of the nursing informatics specialist. The literature clearly outlines the benefits of MSN informatics tracks in reducing medical errors, lowering costs, improving nurse/physician productivity, and care coordination and transitions. Nursing informatics will play a vital role in the future of healthcare. We must be ready!

Major in Nursing (MSN)

Code	Title	Hours
GRADUATE NURSING CORE		9
NURS 501	Role Development and Theoretical Foundations of Advanced Practice	
NURS 502	Research and Evidence-Based Practice Methodology	
NURS 503	Issues and Roles in Advanced Nursing Practice	
ADVANCED NURSING PRACTICE CORE		7
NURS 506	Sustainable Health	
NURS 508	Advanced Clinical Knowledge	
NURSING CAPSTONE		3
NURS 698	Capstone Project	
NURSING INFORMATICS REQUIREMENTS - See separate block		
Total Hours		19

Concentration in Nursing Informatics

Code	Title	Hours
NURS 504	Technology, Informatics & Professional Nursing Practice	3
NURS 641	Advanced Nursing Informatics	3
NURS 642	Healthcare Informatics Systems Analysis and Design	3
NURS 643	Healthcare Project Management	3
NURS 644	Healthcare Data Science and Data Analytics	3
NURS 645	Practicum in Nursing Informatics	3
Total Hours		18

Nursing, M.S.N. - Nursing Leadership

The MSN in Nursing Leadership program is designed for nurses with a passion for innovation and administration in nursing! Our fully online program allows students to learn about quality, safety multidisciplinary collaboration, financing, and management in health care. Clinical experiences are designed to meet your learning goals.

The Nursing Leadership program at MU allows you the flexibility you need with the faculty attention you deserve!

Admission Requirements

Applicants for the Master of Science in Nursing in Nursing Education program are referred to the *Admission Requirements* section for general criteria and guidelines for admission to the University.

Specific criteria required by the Wehrheim School of Nursing include:

1. Baccalaureate degree in nursing from an accredited (ACEN, CNEA, or CCNE) school of nursing.
2. Undergraduate grade-point average of at least 3.0 on a 4.0 scale. When GPA is below this, probational acceptance may be considered if the candidate demonstrates graduate study potential by other means.
3. Satisfactory completion of an undergraduate statistics course (equivalent to MATH 130 Elements of Statistics 1), physical assessment course, and a research course in nursing.
4. Computer literacy and access to a computer and internet service.
5. Three current academic and/or professional references.
6. Licensure as a registered nurse in Pennsylvania or in the state where clinical practice or internship is to be arranged.
7. Successful completion of a personal interview with the Nursing Admissions Committee.
8. Current résumé and statement of intent.
9. Verified academic transcripts.

Nursing, M.S.N. - School Nursing

The School Nurse Program is designed for the student who desires a PA Department of Education K4-12 School Nurse Certification. This program is offered as a stand-alone post-baccalaureate School Nurse Certification or as part of the MSN-School Nurse curriculum. In order to achieve certification, students progress through courses in Advanced Educational Psychology and School Nursing. The courses incorporate online instruction and experiential learning activities in a public school setting. All course content and time offerings are designed to meet the needs of the student as well as Pennsylvania standards for School

Nurse Certification. For students who do not reside in Pennsylvania, it is possible to complete the MSN in school nursing degree, but only students completing the 100 practicum hours in a Pennsylvania K-12 school district will be eligible for the PDE PK-12 certification.

Admission Requirements

Applicants for the Master of Science in Nursing in Nursing Education program are referred to the *Admission Requirements* section for general criteria and guidelines for admission to the University.

Specific criteria required by the Wehrheim School of Nursing include:

1. Baccalaureate degree in nursing from an accredited (ACEN, CNEA, or CCNE) school of nursing.
2. Undergraduate grade-point average of at least 3.0 on a 4.0 scale. When GPA is below this, probational acceptance may be considered if the candidate demonstrates graduate study potential by other means.
3. Satisfactory completion of an undergraduate statistics course (equivalent to MATH 130 Elements of Statistics 1), physical assessment course, and a research course in nursing.
4. Computer literacy and access to a computer and internet service.
5. Three current academic and/or professional references.
6. Licensure as a registered nurse in Pennsylvania or in the state where clinical practice or internship is to be arranged.
7. Successful completion of a personal interview with the Nursing Admissions Committee.
8. Current résumé and statement of intent.
9. Verified academic transcripts.

Major in Nursing (MSN)

Code	Title	Hours
GRADUATE NURSING CORE		12
NURS 501	Role Development and Theoretical Foundations of Advanced Practice	
NURS 502	Research and Evidence-Based Practice Methodology	
NURS 503	Issues and Roles in Advanced Nursing Practice	
NURS 504	Technology, Informatics & Professional Nursing Practice	
ADVANCED NURSING PRACTICE CORE		7
NURS 506	Sustainable Health	
NURS 508	Advanced Clinical Knowledge	
NURSING CAPSTONE		3
NURS 698	Capstone Project	
SCHOOL NURSING REQUIREMENTS - See separate block		
Total Hours		22

Concentration in School Nursing

Code	Title	Hours
School Nursing: Elementary Grades Practicum		3
NURS 610	School Nursing: Grades PK-4 Practicum	
School Nursing: Middle and High School Grades Practicum		3
NURS 611	School Nursing: Grades 5-12 Practicum	
NURS 612	School Nursing: Health Promotion and Disease Prevention	3

NURS 613	School Nursing: Considerations for the Needs of Diverse Learners and English Language Learners	3
Effective Teaching: Theories and Methods in Nursing Education		3
NURS 630	Effective Teaching: Theories and Methods in Nurse Ed	
Total Hours		15

Nursing, Post-Master's Certificate, Family Nurse Practitioner

A post-master's certificate is available in the family nurse practitioner option for individuals who already hold an MSN degree. Course requirements are contingent upon previous master's degree. An individualized gap analysis is provided to each post-MSN student candidate.

Nursing, Post-Master's Certificate, Nursing Informatics

A post-master's certificate is available in the nursing informatics option for individuals who already hold an MSN degree. Course requirements are contingent upon previous master's degree. An individualized gap analysis is provided to each post-MSN student candidate.

Post-Master Certificate in Nursing

Code	Title	Hours
NURSING INFORMATICS REQUIREMENTS - See separate block		
Total Hours		0

Concentration in Nursing Informatics

Code	Title	Hours
NURS 504	Technology, Informatics & Professional Nursing Practice	3
NURS 641	Advanced Nursing Informatics	3
NURS 642	Healthcare Informatics Systems Analysis and Design	3
NURS 643	Healthcare Project Management	3
NURS 644	Healthcare Data Science and Data Analytics	3
NURS 645	Practicum in Nursing Informatics	3
Total Hours		18

School Nursing, Post-Baccalaureate Certification

Admission Requirements

Applicants for the Master of Science in Nursing in Nursing Education program are referred to the *Admission Requirements* section for general criteria and guidelines for admission to the University.

Specific criteria required by the Wehrheim School of Nursing include:

1. Baccalaureate degree in nursing from an accredited (ACEN, CNEA, or CCNE) school of nursing.
2. Undergraduate grade-point average of at least 3.0 on a 4.0 scale. When GPA is below this, probational acceptance may be considered

if the candidate demonstrates graduate study potential by other means.

3. Satisfactory completion of an undergraduate statistics course (equivalent to MATH 130 Elements of Statistics 1), physical assessment course, and a research course in nursing.
4. Computer literacy and access to a computer and internet service.
5. Three current academic and/or professional references.
6. Licensure as a registered nurse in Pennsylvania or in the state where clinical practice or internship is to be arranged.
7. Successful completion of a personal interview with the Nursing Admissions Committee.
8. Current résumé and statement of intent.
9. Verified academic transcripts.

Major in School Nursing, Post-Bacc Certification

Code	Title	Hours
A baccalaureate degree is required in order to be eligible for school nurse certification. In addition to the course requirements below, you must have a PA Registered Nurse License.		

REQUIRED COURSEWORK FOR SCHOOL NURSE		
School Nursing: Elementary Grades Practicum		3
NURS 610	School Nursing: Grades PK-4 Practicum	
School Nursing: Middle and High School Grades Practicum		3
NURS 611	School Nursing: Grades 5-12 Practicum	
NURS 612	School Nursing: Health Promotion and Disease Prevention	3
NURS 613	School Nursing: Considerations for the Needs of Diverse Learners and English Language Learners	3

REQUIRED CLEARANCES		
ACT 114 - FBI Fingerprint Needed		
You must submit your FBI Fingerprint Clearance		
ACT 34 - Criminal Record Check Needed		
You must submit your Criminal Record Check		
ACT 151 - Child Abuse Clearance Needed		
You must submit your Child Abuse Clearance		
Negative TB Test or Chest X-ray Needed		
You must submit your Negative TB Test or Chest X-ray		
Total Hours		12

Technology and Innovation

The Program

The Department of Technology and Innovation offers:

- Entrepreneurial and Innovation Graduate Certificate (p. 482)
- Technology and Innovation, M.S. (p. 482)
- Technology and Innovation, M.S., Education Concentration (p. 482)
- Technology and Innovation, M.S., Enterprise Concentration (p. 486)
- Technology Education K-12, Post Baccalaureate Certification (p. 486)

Graduate Faculty

Len Litowitz, Department Chairperson. Ed.D., University of Minnesota, 1986. Power, Energy and Transportation, Professional.

Scott A. Warner, Graduate Program Coordinator. Ed.D., West Virginia University, 2000. Product Design, Manufacturing, Professional.
 Sharon A. Brusic. Ed.D., Virginia Polytechnic Institute and State University, 1991. Electronics, Professional.
 Barry G. David. Ed.D., Temple University, 1990. Production, Management.
 John Haughery, Ph.D., Iowa State University, 2020, Electronics
 Alex Johnson. Ph.D., University of North Dakota, 2010. Production Processes and Materials.
 Mehdi Khalighi. Ph.D., University of Utah, 2001. Environmental Health, Safety.
 Betty-Jo Legutko. Ph.D., Alvernia University, 2016. Occupational Safety, Environmental Health.
 Joseph M. McCade. Ed.D., Virginia Polytechnic Institute and State University, 1989. Power, Professional.
 Jack Ogutu. Ph.D., Auburn University, 2013. Ergonomics, Safety.
 Mark R. Snyder. Ed.D., Virginia Polytechnic Institute and State University, 1992. Graphic Communications.
 John R. Wright Jr. Ph.D., Iowa State University, 1998. Electronics, Power, Robotics.

EDTE 586: 1-3 s.h.**Topics in Industry & Tech**

Investigation of one or more topics of current interest in industry and technology. Topics vary according to needs and interests of students and faculty involved.

EDTE 587: 1-3 s.h.**Topics in Industry & Tech**

Investigation of one or more topics of current interest in industry and technology. Topics vary according to needs and interests of students and faculty involved.

EDTE 588: 1-3 s.h.**Sp Topics in Industry & Tech**

Investigation of one or more topics of current interest in industry and technology. Topics vary according to needs and interests of students and faculty involved.

EDTE 589: 1-3 s.h.**Sp Topics in Industry & Tech**

Investigation of one or more topics of current interest in industry and technology. Topics vary according to needs and interests of students and faculty involved.

EDTE 603: 3 s.h.**Fostering Creativity by Design**

This course will expose students to the concept of how creativity, within the context of the technological world, is manifested through design. Whether it is during the ideation, development, use, modification and updating, or disposal of the artifact or system of technology, design is the overarching force that is present through each stage. Students will also explore the latest theories on creativity as well as the ways that a designer uses creativity and design thinking toward solving problems in an increasingly technologically complex world. Design-based thinking skills such as problem solving, decision making, researching, designing and creating, will be emphasized. The course is appropriate for all graduate students especially those in education, technological fields, and entrepreneurship.

EDTE 604: 3 s.h.**Engineering Principles and Concepts for the Non-Engineer**

The innovations and inventions of engineering design are vital toward enhancing the standards of living for humanity. In this course, which is intended for the non-engineer, students will learn what engineers do and how they do it. The connections between the engineering profession and society will be examined. This will include a review of engineering organizations and their standards, problem solving techniques and the methods of modeling systems.

EDTE 605: 3 s.h.**Applying Critical Thinking and Decision Making**

An exploration of the nature and application of critical thinking toward acts of decision making. Students will learn how to understand, facilitate, and practice the techniques of disciplined critical thinking and decision-making while avoiding the pitfalls of thinking traps such as biases and irrational tendencies. The course has been designed to address a variety of audiences including all teachers at all levels as well as entrepreneurs and individuals from business and industry, the sciences and the technological fields.

EDTE 646: 3 s.h.**Writing the Professional Paper**

Development of competencies for identifying and developing graduate research topics and for publishing in professional literature. Emphasis on research methods, organization and effective writing. The satisfactory completion of this course is required before pursuit of EDTE 698 Research and Development in Technical Areas or EDTE 699 Thesis.

EDTE 679: 1-3 s.h.**Experimental****EDTE 690: 3 s.h.****Integrative Learning Experience**

The purpose of this course is to engage students in curriculum planning, design, and assessment that will enable them to identify, use, and evaluate experiential and integrative teaching-learning strategies that facilitate connections between all subjects in grades Pre-K to grade 6 (e.g., literacy, science, mathematics, social studies, arts, technology, physical education, engineering).

EDTE 691: 1-6 s.h.**Independent Study**

Pursuit of a topic of special interest and of potential application in technology education. Written proposal must be approved by an appropriate faculty sponsor, the graduate program coordinator and the department chairperson prior to the semester of formal registration in this course. Completion of an approved independent study includes a written research report, which partially determines the grade received.

EDTE 698: 6 s.h.**Research and Development Technical Project**

Design, execution and communication of applied research in technology education. Emphasis on recent technological advances and experimentation with contemporary processes, materials and techniques. Three types of applied research may be pursued: technical project, innovative instruction or technical research. Study is guided by a faculty adviser. Research and development results and applications are recorded as a research report.

EDTE 699: 6 s.h.**Thesis:**

Planning, conducting and recording basic research in technology education. Includes application of an experimental, descriptive, historical or other pertinent educational research method. Study is guided by research adviser and faculty committee. Research results and interpretation are recorded as a thesis.

ITEC 500: 3-12 s.h.**Co-Op Ed Experience in ITEC**

Co-Op Ed Experience in ITEC

ITEC 515: 3 s.h.**Adv Prob:**

Resources, processes and outcomes of selected technical areas in technology education. Technical area emphasized (e.g., computer-aided drafting and design, computer numerical control, desktop publishing, digital electronics, manufacturing, photography and robotics) varies with the course offering. Laboratory experiences focus on technological problem solving. 2 hrs. lec., 3 hrs. lab.

ITEC 525: 3 s.h.**Adv Prob:**

Resources, processes and outcomes of selected technical areas in technology education. Technical area emphasized (e.g., computer-aided drafting and design, computer numerical control, desktop publishing, digital electronics, manufacturing, photography and robotics) varies with the course offering. Laboratory experiences focus on technological problem solving. 2 hrs. lec., 3 hrs. lab.

ITEC 535: 3 s.h.**Adv Prob:**

Resources, processes and outcomes of selected technical areas in technology education. Technical area emphasized (e.g., computer-aided drafting and design, computer numerical control, desktop publishing, digital electronics, manufacturing, photography and robotics) varies with the course offering. Laboratory experiences focus on technological problem solving. 2 hrs. lec., 3 hrs. lab.

ITEC 579: 3 s.h.**Experimental**

Experimental

ITEC 586: 1-3 s.h.**Special Topics:**

Investigation of one or more topics of current interest in technology and innovation. Topics vary according to needs and interests of students and faculty involved. Offered periodically.

ITEC 587: 1-3 s.h.**Special Topics:**

Investigation of one or more topics of current interest in technology and innovation. Topics vary according to needs and interests of students and faculty involved. Offered periodically.

ITEC 588: 1-3 s.h.**Special Topics:**

Investigation of one or more topics of current interest in technology and innovation. Topics vary according to needs and interests of students and faculty involved. Offered periodically.

ITEC 589: 1-3 s.h.**Special Topics:**

Investigation of one or more topics of current interest in technology and innovation. Topics vary according to needs and interests of students and faculty involved. Offered periodically.

Entrepreneurial and Innovation Graduate Certificate

This certificate program is designed for postgraduate students and/or community members seeking advanced coursework to better conceptualize and deploy principles and practices of entrepreneurship. Individuals from industry can benefit from this graduate certificate by enhancing their existing knowledge while offering the opportunity for continued study beyond their bachelor's degree. Additionally, individuals who are considering starting a business or working within an entrepreneurial environment may elect to take this program of study.

The graduate certificate will serve as a stand-alone program for any interested student with a bachelor's degree from an accredited four-year college or university. The degree need not be in business; students electing this certificate program come from diverse backgrounds and various undergraduate majors and may not have had any significant, formal business training or experience. This certificate program can also provide a specialization or gateway for Millersville University graduate students seeking a master's degree in technology and innovation. Courses will address concepts including corporate, social and educational entrepreneurship. Students will investigate opportunities for developing a business while learning how to evaluate opportunities, assess overall resources and manage growth. Students will also learn to promote themselves and their businesses, especially those students without experience in advertising, branding or internet marketing, and apply modern and emerging concepts that are directly applicable to small and developing businesses.

Technology and Innovation, M.S. Technology and Innovation, M.S., Education Concentration

The Master of Science in Technology and Innovation degree program has been created for students from a variety of backgrounds, including education; business and industry; science and technology; and entrepreneurship. The program has two concentrations from which to choose— education and enterprise. The courses in the program are designed to develop and engage students in creativity, design thinking, innovation, ingenuity, problem solving, critical thinking, decision making, research, curiosity, scholarship, leadership and professionalism. The thinking processes of professionals such as designers, engineers and entrepreneurs are the foundation of the Technology and Innovation core courses. These thinking processes are universal and enduring concepts and are widely considered important tools for success in a world submerged in technology. Experiences in this program provide students with insight as to how their own thinking processes affect them in both their personal and professional lives, and how those thinking processes can be modified to meet the circumstances. Teachers, employees and business leaders alike will learn to think about their own thinking. The Technology and Innovation program is structured to be flexible enough to allow students to customize their graduate studies to a significant degree. This flexibility enables students in the program to make choices, including which option works best to complete the program, the topic to explore through a thesis or research and development technical project, or the variety of courses from which to choose to address one's areas of interest or professional development needs.

Admission Requirements

Applicants must possess a baccalaureate degree. Students holding a variety of baccalaureate degrees can benefit from the completion of the Master of Science in technology and innovation. Admission to the program is granted after a favorable review of application materials. A minimum undergraduate cumulative average of 3.0 is required. Applicants with less than a 3.0 GPA are required to submit test scores from either the Miller Analogies Test (MAT) or the Graduate Record Examination (GRE) that are determined to be acceptable by the department. Probationary admission may be granted at the discretion of the department. See the *Admission Requirements* section for additional application information. Selected graduate courses may be credited toward both graduate-level certificates or teaching endorsements and the master's degree in technology and innovation. See the department chairperson or graduate program coordinator for further information.

Degree Requirements

Each student is required to complete all four courses in the technology and innovation core and either the education core or the enterprise core (depending on the degree concentration selected), and the identified expectations of one of the three degree-completion options.

1. Option 1 - the Thesis Option. A thesis (EDTE 699 Thesis:) must be satisfactorily completed as part of a minimum of 30 s.h. of approved graduate study.
2. Option 2 - the Applied Research Option. Requires satisfactory completion of EDTE 698 Research and Development Technical Project as part of 33 s.h. of approved graduate study.
3. Option 3 involves the completion of 36 s.h. of graduate study by taking five approved elective courses which have been selected based on their fit to the professional development needs of the student.

Technology and innovation and approved courses in related disciplines are elected to complete the semester-hour requirements. The graduate program coordinator serves as the advisor for all graduate students pursuing a master's degree. Master's degree candidates who elect the thesis option will select, in consultation with the graduate coordinator, a thesis advisor from the Department of Applied Engineering, Safety and Technology. This advisor will work with at least two other members of a student's thesis committee. These other committee members must consist of at least one other graduate-level faculty member of the Department of Applied Engineering, Safety and Technology. The third member must come from outside of the department and can be someone who is a recognized expert in a given field.

Major in Technology and Innovation - MS

Code	Title	Hours
Depending on the completion option you choose, your total credits needed for degree completion will vary. Thesis option=30 credits. RD Report option=33 credits. Elective option=36 credits.		
TECHNOLOGY INNOVATION PROGRAM COMMON CORE		12
EDTE 603	Fostering Creativity by Design	
EDTE 604	Engineering Principles and Concepts for the Non-Engineer	
EDTE 605	Applying Critical Thinking and Decision Making	
EDTE 646	Writing the Professional Paper	
DEGREE COMPLETION OPTIONS - Choose 1 of the following:		9-15
THESIS OPTION - 30 CREDITS - See Appendix 1		

RESEARCH DEVELOPMENT TECHNICAL PROJECT - 33 CREDITS - See Appendix 2	
TECHNOLOGY INNOVATION ELECTIVES - 36 CREDITS - See Appendix 3	
Concentration in Education - See separate block	
Total Hours	21-27

Appendix 1. THESIS OPTION - 30 CREDITS

Code	Title	Hours
Technology Innovation Thesis		6
EDTE 699	Thesis:	
Technology Innovation Electives - Choose 3 hours from:		3
ACTE 625	Technology and Assessment for Learning	
ACTE 630	Current Technology for Online Instruction	
ACTE 632	Online Learning Environments	
ACTE 633	Learners in Online Classrooms	
ACTE 634	Legal and Ethical Issues in Online Education	
ACTE 635	Instructional and Curricular Design for Online, Blended and Customized Instruction	
ACTE 651	Science Curriculum and Reform	
ACTE 655	Integrative STEM Education	
ART 526	Trends Art Ed:	
ART 584	Intro Studio Art:	
COMM 610	Seminar in Organizational Comm	
CSCI 501	Coding for Educators	
ECHD 614	Advanced Curriculum in ECHD	
EDFN 520	Instructional Technology in Elem Ed	
EDFN 530	Instructional Technology, Design and Assessment	
EDLD 610	Theory and Organizatnl Behav	
EDLD 614	School Community Relations	
EDLD 620	School Law and Public Policy	
EDLD 667	Leadership Seminar 1	
EDLD 668	Leadership Seminar 2	
EDLD 669	Leadership Seminar 3	
EDTE 586	Topics in Industry & Tech	
EDTE 587	Topics in Industry & Tech	
EDTE 588	Sp Topics in Industry & Tech	
EDTE 589	Sp Topics in Industry & Tech	
EDTE 690	Integrtrve Lrning Exprntl Strgy	
EDTE 691	Independent Study	
EDUC 575	Current Trends in Education	
EDUC 580	Methods for Teaching English Language Learners	
EDUC 651	Math in the School Program	
EDUC 661	Science in the School Program	
EMGT 601	Principles & Practices of Emergency Management	
EMGT 605	Social Dimensions of Disaster	
EMGT 607	Emergency Mental Health and Trauma	
EMGT 615	Emergency Preparedness for Industry	
EMGT 619	Emergency Management Planning	
EMGT 629	Topics: (Topics: Business Continuity)	
ENTR 510	ENTR Promotions & Branding	
ENTR 511	Entre: Networking & Sales	
ENTR 540	Entrepreneurship Capstone	

GFED 670	Psychology of the Gifted	ECHD 614	Advanced Curriculum in ECHD
GFED 674	Program for the Gifted	EDFN 520	Instructional Technology in Elem Ed
GFED 675	Eval Instructionl Effectivness	EDFN 530	Instructional Technology, Design and Assessment
GFED 676	Tchg Gftd Lnrs:Instruct Strat	EDLD 610	Theory and Organizatnl Behavr
AENG 515	Adv Prob:	EDLD 614	School Community Relations
AENG 525	Adv Prob:	EDLD 620	School Law and Public Policy
AENG 535	Adv Prob:	EDLD 667	Leadership Seminar 1
AENG 586	Special Topics:	EDLD 668	Leadership Seminar 2
AENG 587	Special Topics:	EDLD 669	Leadership Seminar 3
AENG 588	Special Topics:	EDTE 586	Topics in Industry & Tech
AENG 589	Special Topics:	EDTE 587	Topics in Industry & Tech
MATH 622	21st Century Math	EDTE 588	Sp Topics in Industry & Tech
SOWK 501	Principles and Philosophies of Social Work	EDTE 589	Sp Topics in Industry & Tech
SOWK 505	Understanding Social Work Practices w Diverse Pops	EDTE 590	
SOWK 510	Human Behavior in the Social Environment I	EDTE 592	
SOWK 511	Human Behavior in the Social Environment II	EDTE 690	Integrtve Lrning Exprntl Strgy
SOWK 515	Social Welfare Policy	EDTE 691	Independent Study
SOWK 619	Global Perspectives in SOWK	EDUC 575	Current Trends in Education
SPED 600	Orientation to Special Education	EDUC 580	Methods for Teaching English Language Learners
SPED 601	Psyc of Stdnts w/ Disabilities	EDUC 651	Math in the School Program
SPED 651	Accomplished SPED Advocacy	EDUC 661	Science in the School Program
SPED 671	Behavior Management	EMGT 601	Principles & Practices of Emergency Management
WSSD 551	Coaching of Sport	EMGT 605	Social Dimensions of Disaster
WSSD 601	Organization and Administration of Sport Programs	EMGT 607	Emergency Mental Health and Trauma
WSSD 602	Sport in American Culture	EMGT 615	Emergency Preparedness for Industry
WSSD 604	Event Management	EMGT 619	Emergency Management Planning
WSSD 610	Women in Sport	EMGT 629	Topics: (Topics: Business Continuity)
WSSD 615	Campus Recreation Program	ENTR 510	ENTR Promotions & Branding
WSSD 622	Sport Finance	ENTR 511	Entre: Networking & Sales
Any WSSD 686-689 course(s)		ENTR 540	Entrepreneurship Capstone
WSSD 691	Ind Stdy:	GFED 670	Psychology of the Gifted
		GFED 674	Program for the Gifted
		GFED 675	Eval Instructionl Effectivness
		GFED 676	Tchg Gftd Lnrs:Instruct Strat
		AENG 515	Adv Prob:
		AENG 525	Adv Prob:
		AENG 535	Adv Prob:
		AENG 586	Special Topics:
		AENG 587	Special Topics:
		AENG 588	Special Topics:
		AENG 589	Special Topics:
		MATH 622	21st Century Math
		SOWK 501	Principles and Philosophies of Social Work
		SOWK 505	Understanding Social Work Practices w Diverse Pops
		SOWK 510	Human Behavior in the Social Environment I
		SOWK 511	Human Behavior in the Social Environment II
		SOWK 515	Social Welfare Policy
		SOWK 619	Global Perspectives in SOWK
		SPED 600	Orientation to Special Education
		SPED 601	Psyc of Stdnts w/ Disabilities
		SPED 651	Accomplished SPED Advocacy

Appendix 2. RESEARCH & DEVELOPMENT TECHNICAL PROJECT - 33 CREDITS

Code	Title	Hours
	Research Development Report	6
EDTE 698	Research and Development Technical Project	
	Technology Innovation Electives - Choose 6 hours from:	6
ACTE 625	Technology and Assessment for Learning	
ACTE 630	Current Technology for Online Instruction	
ACTE 632	Online Learning Environments	
ACTE 633	Learners in Online Classrooms	
ACTE 634	Legal and Ethical Issues in Online Education	
ACTE 635	Instructional and Curricular Design for Online, Blended and Customized Instruction	
ACTE 651	Science Curriculum and Reform	
ACTE 655	Integrative STEM Education	
ART 526	Trends Art Ed:	
ART 584	Intro Studio Art:	
COMM 610	Seminar in Organizational Comm	
CSCI 501	Coding for Educators	

SPED 671	Behavior Management
WSSD 551	Coaching of Sport
WSSD 601	Organization and Administration of Sport Programs
WSSD 602	Sport in American Culture
WSSD 604	Event Management
WSSD 610	Women in Sport
WSSD 615	Campus Recreation Program
WSSD 622	Sport Finance
WSSD 686-689	
WSSD 691	Ind Stdy.

Appendix 3. TECHNOLOGY & INNOVATION ELECTIVES - 36 CREDITS

Code	Title	Hours
Technology Innovation Electives - Choose 15 hours from:		15
ACTE 625	Technology and Assessment for Learning	
ACTE 630	Current Technology for Online Instruction	
ACTE 632	Online Learning Environments	
ACTE 633	Learners in Online Classrooms	
ACTE 634	Legal and Ethical Issues in Online Education	
ACTE 635	Instructional and Curricular Design for Online, Blended and Customized Instruction	
ACTE 651	Science Curriculum and Reform	
ACTE 655	Integrative STEM Education	
ART 526	Trends Art Ed:	
ART 584	Intro Studio Art:	
COMM 610	Seminar in Organizational Comm	
CSCI 501	Coding for Educators	
ECHD 614	Advanced Curriculum in ECHD	
EDFN 520	Instructional Technology in Elem Ed	
EDFN 530	Instructional Technology, Design and Assessment	
EDLD 610	Theory and Organizatnl Behavr	
EDLD 614	School Community Relations	
EDLD 620	School Law and Public Policy	
EDLD 667	Leadership Seminar 1	
EDLD 668	Leadership Seminar 2	
EDLD 669	Leadership Seminar 3	
EDTE 586	Topics in Industry & Tech	
EDTE 587	Topics in Industry & Tech	
EDTE 588	Sp Topics in Industry & Tech	
EDTE 589	Sp Topics in Industry & Tech	
EDTE 590		
EDTE 592		
EDTE 690	Integrvtve Lrning Exprntl Strgy	
EDTE 691	Independent Study	
EDUC 575	Current Trends in Education	
EDUC 580	Methods for Teaching English Language Learners	
EDUC 651	Math in the School Program	
EDUC 661	Science in the School Program	
EMGT 601	Principles & Practices of Emergency Management	
EMGT 605	Social Dimensions of Disaster	
EMGT 607	Emergency Mental Health and Trauma	

EMGT 615	Emergency Preparedness for Industry
EMGT 619	Emergency Management Planning
EMGT 629	Topics: (Topics: Business Continuity)
ENTR 510	ENTR Promotions & Branding
ENTR 511	Entre: Networking & Sales
ENTR 540	Entrepreneurship Capstone
GFED 670	Psychology of the Gifted
GFED 674	Program for the Gifted
GFED 675	Eval Instructionl Effectivness
GFED 676	Tchg Gftd Lrnrs:Instruct Strat
AENG 515	Adv Prob:
AENG 525	Adv Prob:
AENG 535	Adv Prob:
AENG 586	Special Topics:
AENG 587	Special Topics:
AENG 588	Special Topics:
AENG 589	Special Topics:
MATH 622	21st Century Math
SOWK 501	Principles and Philosophies of Social Work
SOWK 505	Understanding Social Work Practices w Diverse Pops
SOWK 510	Human Behavior in the Social Environment I
SOWK 511	Human Behavior in the Social Environment II
SOWK 515	Social Welfare Policy
SOWK 619	Global Perspectives in SOWK
SPED 600	Orientation to Special Education
SPED 601	Psyc of Stdnts w/ Disabilities
SPED 651	Accomplished SPED Advocacy
SPED 671	Behavior Management
WSSD 551	Coaching of Sport
WSSD 601	Organization and Administration of Sport Programs
WSSD 602	Sport in American Culture
WSSD 604	Event Management
WSSD 610	Women in Sport
WSSD 615	Campus Recreation Program
WSSD 622	Sport Finance
WSSD 686-689	
WSSD 691	Ind Stdy.

Concentration in Education

Code	Title	Hours
EDFN 601	Research Methods	3
Social Foundations - Choose 1 of the following:		3
EDFN 511	Comparative Education	
EDFN 590	Social Foundation of Educ	
EDFN 603	Philosophy of Education	
EDFN 604	Education and Public Policy	
Psychology Area - Choose 1 of the following:		3
PSYC 525	Advanced Child Psychology	
PSYC 526	Advanced Adolescent Psychology	
PSYC 625	Human Growth and Development	
EDFN 545	Advanced Educational Psychology	

Field Experience in Technology Innovation

Students in the Education Concentration must complete a Field Experience during the duration of their program. Please consult your program coordinator for options.

Culminating Experience in Technology Innovation

Culminating Experiences include but are not limited to published articles, curriculum artifacts and professional presentations

Total Hours**9**

Technology and Innovation, M.S., Enterprise Concentration

The Master of Science in Technology and Innovation degree program has been created for students from a variety of backgrounds, including education; business and industry; science and technology; and entrepreneurship. The program has two concentrations from which to choose— education and enterprise. The courses in the program are designed to develop and engage students in creativity, design thinking, innovation, ingenuity, problem solving, critical thinking, decision making, research, curiosity, scholarship, leadership and professionalism. The thinking processes of professionals such as designers, engineers and entrepreneurs are the foundation of the Technology and Innovation core courses. These thinking processes are universal and enduring concepts and are widely considered important tools for success in a world submerged in technology. Experiences in this program provide students with insight as to how their own thinking processes affect them in both their personal and professional lives, and how those thinking processes can be modified to meet the circumstances. Teachers, employees and business leaders alike will learn to think about their own thinking. The Technology and Innovation program is structured to be flexible enough to allow students to customize their graduate studies to a significant degree. This flexibility enables students in the program to make choices, including which option works best to complete the program, the topic to explore through a thesis or research and development technical project, or the variety of courses from which to choose to address one's areas of interest or professional development needs.

Admission Requirements

Applicants must possess a baccalaureate degree. Students holding a variety of baccalaureate degrees can benefit from the completion of the Master of Science in technology and innovation. Admission to the program is granted after a favorable review of application materials. A minimum undergraduate cumulative average of 3.0 is required. Applicants with less than a 3.0 GPA are required to submit test scores from either the Miller Analogies Test (MAT) or the Graduate Record Examination (GRE) that are determined to be acceptable by the department. Probationary admission may be granted at the discretion of the department. See the *Admission Requirements* section for additional application information. Selected graduate courses may be credited toward both graduate-level certificates or teaching endorsements and the master's degree in technology and innovation. See the department chairperson or graduate program coordinator for further information.

Degree Requirements

Each student is required to complete all four courses in the technology and innovation core and either the education core or the enterprise core (depending on the degree concentration selected), and the identified expectations of one of the three degree-completion options.

1. Option 1 - the Thesis Option. A thesis (EDTE 699 Thesis:) must be satisfactorily completed as part of a minimum of 30 s.h. of approved graduate study.
2. Option 2 - the Applied Research Option. Requires satisfactory completion of EDTE 698 Research and Development Technical Project as part of 33 s.h. of approved graduate study.
3. Option 3 involves the completion of 36 s.h. of graduate study by taking five approved elective courses which have been selected based on their fit to the professional development needs of the student.

Technology and innovation and approved courses in related disciplines are elected to complete the semester-hour requirements. The graduate program coordinator serves as the advisor for all graduate students pursuing a master's degree. Master's degree candidates who elect the thesis option will select, in consultation with the graduate coordinator, a thesis advisor from the Department of Applied Engineering, Safety and Technology. This advisor will work with at least two other members of a student's thesis committee. These other committee members must consist of at least one other graduate-level faculty member of the Department of Applied Engineering, Safety and Technology. The third member must come from outside of the department and can be someone who is a recognized expert in a given field.

Degree Candidacy

The student will apply for admission to degree candidacy after completing six to 15 s.h. of graduate-degree credits. Graduate faculty will evaluate the student's performance and provide a written recommendation regarding the individual as a degree candidate. At the time of admission to degree candidacy, the student will consult with the graduate program coordinator to review and update his or her program of studies for completing the degree requirements.

Technology Education K-12, Post Baccalaureate Certification

For post-baccalaureate information please see the "Certification" section of the Graduate Course Catalog.

Advanced Professional Studies - Post-Bacc Cert

Code	Title	Hours
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*Clearances are valid for one year from the date that appears in the header of this degree audit in the field 'Clearance Date.' Clearances cannot expire in the middle of a semester.

COURSE REQUIREMENTS FOR APS

FOUNDATIONS COURSES - Choose 1 of the following options 1-2:	6
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Option 1. Foundations Graduate Level

EDFN 590 Social Foundation of Educ

EDFN 545 Advanced Educational Psychology
--

Option 2. Foundations Undergraduate Level

EDFN 211 Foundations Modern Education

EDFN 241 Psychological Foundations of Teaching
--

ACT 126 - Educator Ethics Training

You must submit your Educator Ethics Training (If applying to APS AFTER Jan 15, 2020)

3.0 Minimum Cert GPA

undefined - See separate block

If you are given the 2.8 GPA Exception for graduation and you graduate with a GPA lower than 3.0, you must have higher certification test scores in order to meet PA state certification requirements.

No dispositions-related holds

If the requirement above is checked as complete, then there are currently no dispositions-related holds on your APS Status. Registration for APS courses is permitted when all APS requirements have been met. If it is incomplete, you have a hold and APS registration will not be allowed.

APS registration status

You ARE NOT eligible to register for courses requiring APS status.

Application for APS status

When all requirements are met, you must submit application for admission to APS status. Click here for the application.

Total Hours **6**

Technology Education - Post-Bacc Certification

Code	Title	Hours
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TECHNOLOGY LITERACY CORE

AENG 110	Communication and Information Systems	3
AENG 120	Energy Systems	3
AENG 130	Production Materials & Processes	3
AENG 140	Bio-related Technologies	3

TECHNICAL CORE

AENG 322	Transportation	3
AENG 241	Drafting Communications	3

Print Media Systems or Web Publishing Interactive Media - Choose 1 of the following: 3

AENG 251	Print Media Systems	
AENG 252	Web Publishing Systems	

AENG 261 Electronic Systems 3

Processing Nonmetallic or Metallic Materials - Choose 1 of the following: 3

AENG 271	Processing Nonmetallic Materials	
AENG 281	Processing Metallic Materials	

AENG 327 Engineering Structures 3

AENG 344 Product Design 3

AENG 346 Architectural Drawing 3

AENG 435 Manufacturing Enterprise 3

TECHNOLOGY ELECTIVE

Laboratory Electives - Choose 3 of the following: 9-10

AENG 243	Technical Sketching, Design & Rendering	
AENG 251	Print Media Systems	
AENG 252	Web Publishing Systems	
AENG 262	Semiconductor Electronics	
AENG 271	Processing Nonmetallic Materials	
AENG 281	Processing Metallic Materials	
AENG 325	Power Conversion and Control	
AENG 326	Fluid Power	
AENG 331	Construction Technology 1	
AENG 332	Construction Technology 2	
AENG 342	Computer-Aided Engineering Drawing	
AENG 345	Statics/Strength of Materials	

AENG 351	Digital Imaging	
AENG 355	Contemporary Printing	
AENG 356	Desktop Publishing	
AENG 357	Packaging Specialty Printing	
AENG 364	Digital Electronics	
AENG 375	Polymer and Ceramic Technology	
AENG 376	Woodworking Technology	
AENG 382	Automated Manufacturing	
AENG 425	Industrial Robotic Systems	
AENG 427	Programmable Logic Controllers	
AENG 448	Machine Tool Design	
AENG 455	R&D in Graphic Communications and Packaging	
AENG 467	Mobile Robotics	
AENG 485	Adv Manufacturing Systems	
AENG 498	Independent Study	
AENG 515	Adv Prob:	
AENG 525	Adv Prob:	
AENG 535	Adv Prob:	

REQUIRED EDTE COURSES - count in major GPA

EDTE 291	Foundations of Technology & Engineering Ed	3
EDTE 391	Curr & Inst in Tech & Eng Ed	3
EDTE 491	Seminar in Techn & Engring Ed	1
EDTE 496	Innovatrn/Design Methodologies	2

Total Hours **57-58**

Req Related for Technology Education

Code	Title	Hours
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ENGL 110 English Composition 3

General Education (G2) Math course

Choose one MATH course with attribute G2

Science Elective - Choose 1 of the following: 3-4

BIOL 100	General Biology	
CHEM 103	Gen Organic and Biochemistry 1	
PHYS 103	Elements of Physics	
PHYS 104	Applied Physics	

Total Hours **6-7**

Professional Education - Certification

Code	Title	Hours
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FOUNDATIONS BLOC

We recommend 590 and 545 for Post-Bacc students. These courses each require 35 hours field placement at an urban school. Offered in the evenings Fall and Spring. Also offered in Summer Session. If enrolling in EDFN 211/241, please register for both courses in the same block.

Foundations of Modern Education - Choose 1 of the following: 3

EDFN 590	Social Foundation of Educ	
EDFN 211	Foundations Modern Education	

Psychological Foundations of Teaching - Choose 1 of the following: 3

EDFN 545	Advanced Educational Psychology	
EDFN 241	Psychological Foundations of Teaching	

APS - PROFESSIONAL BLOC

Students must meet APS eligibility requirements prior to registering. Course Appropriate PRAXIS II Exam should be taken after Professional Bloc, but prior to Student Teaching.

Content Area Literacy for Diverse Classrooms - Choose 1 of the following: 3

- EDSE 340 Content Area Literacy for Diverse Classrooms
- EDSE 540 Cntnt Area Litrcy Divers Class

Secondary Students w/Disabilities in Inclusive Settings - Choose 1 of the following: 3

- SPED 346 Secondary Students w/Disabilities in Inclusive Settings
- SPED 546 Sec Stdnts w Disab Inclu Sttgs

Foundations of Technology Education 3

- EDTE 291 Foundations of Technology & Engineering Ed

Curriculum/Instruction in Technology Education 3

- EDTE 391 Curr & Inst in Tech & Eng Ed

Innovation and Design Methods - Choose 1 of the following: 2-6

- EDTE 496 Innovatn/Design Methodologies
- EDTE 698 Research and Development Technical Project

STUDENT TEACHING SEMINAR

File your Intent to Student Teach Card one year prior to the beginning of the semester in which you wish to Student Teach. Click here to access the Student Teaching Website

EDSE 471 Student Teaching Seminar 3

Seminar in Technology Education 1

- EDTE 491 Seminar in Techn & Engring Ed

STUDENT TEACHING SEMESTER

Students must meet APS eligibility requirements prior to registering. Submit your Teacher Certification Packet 90 days prior to completion of your certification program. Click here to access the packet on the Certification Website.

Student Teaching - Choose 9 hours from: 9

- EDTE 461 Edte Stu Teaching
- EDTE 462 EDTE Stu Teaching

Total Hours 33-37

University Administration

President of the University, Daniel A. Wubah, Ph.D.

Provost and Senior Vice President for Academic Affairs, Gail Gasparich, Ph.D.

Associate Provost for Academic Administration, James A. Delle, Ph.D.

Assistant Vice President for Institutional Assessment and Planning, Carole E. Runge, D.M.

Dean, College of Education and Human Services, Lara Willox, Ph.D.

Associate Dean, College of Education and Human Services, Marcia V. Bolton, Ed.D.

Dean, College of Science and Technology, Marc A. Harris, Ph.D.

Dean, Lombardo College of Business, Marc Tomljanovich, Ph.D.

Dean, College of Arts, Humanities and Social Sciences, Ieva Zake, Ph.D.

Dean, College of Graduate Studies and Adult Learning, James A. Delle, Ph.D.

Vice President for Advancement, Victor E. Ramos, M.B.A.

Vice President for Finance and Administration/CFO, Nafez Alyan, Ph.D.

Vice President for Student Affairs, Mary Beth E. Williams, Ph.D.

Associate Provost for Student Success & Dean of University College, Dr. Rachel Finley-Bowman, Ph.D.

Associate VP for Grants Sponsored Programs & Research, Mr. Jeffry B. Porter

Associate Vice President and Dean of Admissions, Enrollment Management, Douglas Zander, Ed.D.

Governing Boards Commonwealth of Pennsylvania

Tom Wolf
Governor

State System of Higher Education

Chancellor Daniel Greenstein

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- Ms. Holly L. Trego '98
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General Information

- Special Features and Resources (p. 489)
- University Services (p. 490)

Routes To Millersville University

Directions to the Campus

From Baltimore and South

Take Route I-83 north to Route 30 east. Then follow "From Route 30."

From Harrisburg and West

Take Route 283 east to exit for Route 741 east. Then follow "From Route 30."

From the Pennsylvania Turnpike, Traveling East

Take Exit 19/247 (Harrisburg East) onto Route 283 east. From Route 283, take exit for Route 741 east. For about five miles, follow Route 741 east (the name Rohrerstown Road will change to Millersville Road), then turn right at the light at Route 999. Follow "Almost There."

From the Pennsylvania Turnpike, Traveling West

Take Exit 21/286 (Reading/Lancaster) and follow Route 222 south to Route 30 west. Then follow "From Route 30."

From Route 222 South

Take the exit for Route 30 west, then follow "From Route 30."

From Route 30

Take the exit for Route 741 east. Follow Route 741 east (the name Rohrerstown Road will change to Millersville Road). About four miles beyond Route 30, turn right at the light onto Route 999. Follow "Almost There."

From Lancaster City

Go west on Orange Street, turn left on Charlotte Street and then bear right onto Manor Street. It will become Route 999 (Manor Avenue). When you cross Route 741 (Millersville Road), follow "Almost There."

Almost There

At the third traffic light (after Route 741), turn left onto George Street. After you cross West Cottage Ave., you will be on the campus.

Regional Maps

Special Features and Resources

Art Galleries

The Winter Visual and Performing Arts Center Gallery and Sykes Gallery each feature significant exhibitions of professional artists of national and international stature. Swift Gallery displays both undergraduate and graduate student artwork. Sykes and Swift galleries are housed in Breidenstine Hall. Contact the art department, 717-871-7249, for further information.

Cultural Events Series

The Cultural Affairs Committee's mission is to bring to Millersville University's campus both enriching and entertaining programs that broaden the visual and performing arts experiences of our students and the Millersville community. It is the committee's goal to provide cultural offerings that reinforce the importance of the arts in the development of a well-rounded individual and a civil society. Although the series varies

from year to year, varied types of performing arts are included. Call 717-871-5802 for further information.

Library

The Francine G. McNairy Library and Learning Forum is a learner-centered hub for the University community, dedicated to educating, inspiring and connecting people with ideas, information and each other. Librarians and information professionals are available to assist students with research, information literacy and accessing information resources appropriate for their studies. Students and members of the University community can access library resources by visiting the library or at www.library.millersville.edu (<http://www.library.millersville.edu>). Library collections include electronic journals, databases, streaming video and eBooks, as well as physical collections of books, films curriculum, and archives and special collections — a repository for unique historical documents and records focused on the University and local region. The library features state-of-the-art facilities for research and learning, such as the Digital Learning Studio, where students can seek assistance with digital content creation, 3D printing and other current technologies. Students, faculty, staff and administrators can use flexible spaces for group and individual study and meetings.

In addition, the Francine G. McNairy Library and Learning Forum is home to the Writing Center Annex, Office of Sponsored Programs and Research Administration, the Instructional Technologies and Support Team, the Center for Academic Excellence, the Coordinator of General Education, the Career and Life Studies office and the Starbucks Café.

The Ware Center

Situated in the heart of the arts district, the Ware Center serves as a satellite campus for Millersville University. The Ware Center is Millersville University's premier performing arts center, where several undergraduate and graduate courses are offered. Students enrolled in courses at the Ware Center are able to experience Lancaster's charm, history and culture while visiting unique shops and eateries. Classes are held during the evening, with parking conveniently located at no charge to students who have a MU permit. The Ware Center provides a distinctive learning experience, with technology-enhanced classrooms, a computer lab, vending machines and comfortable study spaces. Noncredit adult learning courses are also offered at the site during the day.

Organizations

Graduate Student Organization (GSO)

The purpose of this association is to provide a forum for academic and social interests. The GSA has representatives on the Faculty Senate, the Graduate Course and Program Review Committee, and other administrative, advisory or policy-making bodies of the University. All graduate students, regardless of degree status, are automatically members of the GSA and are encouraged to hold offices and participate in the activities of the association. For further information, visit www.millersville.edu/graduate/current-student-resources/graduate-student-organization-gso.php (<https://www.millersville.edu/graduate/current-student-resources/graduate-student-organization-gso.php>), or contact the College of Graduate Studies and Adult Learning at 717-871-4723.

Graduate Student Ambassadors

The College of Graduate Studies and Adult Learning seeks graduate students interested in volunteering their time as Graduate Student Ambassadors. The ambassadors talk and interact with prospective

students to answer questions, provide one-on-one tours, serve as the face and voice of their programs, and assist with various events such as commencement, graduate orientations and open houses. Participation is based on an as-available basis. For further information, contact the College of Graduate Studies and Adult Learning at 717-871-4723.

University Services

Office of Experiential Learning and Career Management

The Office of Experiential Learning and Career Management houses Career Services, Academic Internship Program, the Mentorship Office, and Volunteer Central. Career Services offers programs and services to help students clarify and attain educational and career goals. Services include career counseling, presentations to enhance résumé writing, job search and interviewing skills, resource information, job vacancy announcements, job fairs, on-campus interviewing, and electronic and in-person résumé critiques. Volunteer Central links agencies to Millersville students seeking community-service opportunities. Graduate students and alumni may utilize these services at the Office of Experiential Learning and Career Management, Bedford House, 717-871-7655. Office hours are Monday through Friday, 8 a.m. to 4:30 p.m. For up-to-date information on programs and services, check the web page: www.millersville.edu/elcm (<https://www.millersville.edu/elcm/>).

Center For Counseling and Human Development

The Center for Counseling and Human Development offers students the opportunity to discuss any matter freely in a confidential, professional setting at no cost. Licensed psychologists help students reach greater self-understanding and enhance their abilities to manage immediate and future concerns. Individual counseling, workshops, group experiences and consultations are available. Drug and alcohol counseling is provided by a certified addictions counselor. The center is located on the third floor of Lyle Hall and is open when classes are in session: Monday, Tuesday, Thursday and Friday from 8 a.m. to 4 p.m., and Wednesday from 8 a.m. to 6 p.m. To make an appointment, please call 717-871-7821. **All services are strictly confidential.**

Students With Disabilities

Millersville University encourages prospective students with disabilities to contact the Office of Learning Services in Lyle Hall at 717-871-5554 to discuss their needs. Students requesting assistance must complete a Special Assistance Request form and provide detailed documentation from their professional or healthcare practitioner regarding the nature of and limitations imposed by their disability. Accommodations are arranged upon completion of this process.

Health Services

Health Services, located in the Witmer Building, provides medical care to all registered students. They have a professional staff of physicians, nurse practitioner, and registered nurses. There is no charge to be evaluated by a provider for acute illnesses or injuries. Most treatments and over-the-counter medications are free. They have a dispensary in house which has common antibiotics that can be prescribed to the students for a small fee. Services provided include treatment for minor illness and injuries, monitoring and management of chronic health conditions, sexual health, physical examinations, TB testing, and immunizations (including FREE influenza vaccines), in-house

laboratory testing, and medical procedures such as EKGs, wound care, and laceration repair. Students who do not need to be seen can obtain over-the-counter medications and supplies from the Self Care Cart, located in the reception area. A health evaluation form which includes medical history, physical exam, and immunization records are required to be submitted by all students. Refer to the Health Services website, www.millersville.edu/healthservices/ (<http://www.millersville.edu/healthservices/>) for forms and further information. Appointments are available by calling 717-871-5250.

Identification Cards

Graduate students are required to have a Millersville University student identification card, which may be obtained at the Campus ID Office in Boyer Computer Center. This identification serves as a library and activity card. Personal photo can be uploaded in advance for quick pickup. There is no charge for the initial ID card; replacement cost is \$25. The Campus ID Office is open Monday through Friday, 8 a.m. to 4 p.m., 717-871-7008.

Off-Campus Housing

Student Lodging, Inc. (SLI) wants to help you find affordable and safe student housing conveniently located adjacent to Millersville's campus. Graduate students can explore SLI's various housing options at the Brookwood Court Apartments and Healthy Living (Wellness) Apartments. You can visit www.studentlodginginc.com (<https://www.studentlodginginc.com>) for more information or call 717-871-4611.

College of Graduate Studies and Adult Learning

The College of Graduate Studies and Adult Learning (CGSAL) is the administrative hub for graduate studies, including admissions, preadmissions and nondegree student advisement. CGSAL offers doctoral degrees and over 50 master's degrees as well as professional certifications across a wide variety of arts, science, education and other professional disciplines. Programs and course offerings are tailored to the educational needs and lives of adult learners. CGSAL also offers a wide variety of noncredit programs for adult learners, businesses, industries, schools and various agencies through Educator Source, the Nonprofit Resource Network and the Corporate University. Courses can be designed to meet the specific needs of clientele. Corporate University works with companies to facilitate their access to training grant funds.

The College of Graduate Studies and Adult Learning is open Monday to Friday, 8 a.m. to 5 p.m., and is located on the second floor of Lyle Hall. Please visit www.millersville.edu/graduate (<https://www.millersville.edu/graduate/>) or contact gradadmissions@millersville.edu for additional information on all programs in the College of Graduate Studies and Adult Learning.

Parking Permits

Prior to parking on campus, all drivers must obtain a parking permit to be displayed on the parked vehicle. Parking permits are required on campus Monday through Friday, 8 a.m. to 4 p.m. Parking is open to park on campus (no permit required) after 4 p.m. weekdays and all weekend. The current permit fees for all parking permits, including semester, full-year, temporary and visitor permits, are available at the University Police Department in the Lebanon House. Information about parking is also available online at www.millersville.edu/police (<https://www.millersville.edu/police/>).

Lost and Found

This service is located at the main desk of the Student Memorial Center, 717-871-4636, and the hours coincide with those of the center. Miscellaneous possessions are held there. Valuables are held by the University Police in the Lebanon House, 717-871-4357.

Dining

Graduate students may purchase meal plans. Descriptions and prices for each of the meal plans are available at www.millersville.edu/dining (<http://www.millersville.edu/dining/>). Sign up to be a meal-plan member by going to MAX; click on Student Services and then select My Dining. Click login under My Housing; select dining tab on the left-hand side. Select continue, select dining plan, submit My Dining Plan Selection. Payment options are available at www.millersville.edu/bursar/mealplans/php (<https://www.millersville.edu/bursar/mealplans/php/>). For billing inquiries, contact the bursar's office at 717-871-5101.

Students may purchase salads, sandwiches, pizza, pasta and other light fare in The Galley and Juice Bar in the Student Memorial Center; the Cove in Lyle Hall; and The Anchor, a deli-convenience store in Gordinier Lobby, as well as from several private enterprises in close proximity to the University.

Student Memorial Center

The Student Memorial Center has six furnished conference rooms and a large multipurpose room that can handle various setups for weekly meetings, guest speakers and special events. Reservations for conference rooms and the multipurpose room can be made online via the SMC website.

The **Department of Campus Life**, formerly known as the Center for Student Involvement and Leadership (CSIL) oversees Fraternity and Sorority life, clubs and organizations, campus activities, leadership programs, commuter student support and the mascot team. The Campus Life suite is located in SMC 118 near the clock tower entrance of the SMC. Student organization offices that are located inside of the SMC include the Student Government Association, University Activities Board, Society of Latino Affairs (SOLA), Gender and Sexuality Alliance (GSA), Black Student Union (BSU), NAACP, WIXQ campus radio station, Touchstone Yearbook and *The Snapper* newspaper. The Dr. Rita Smith Wade-El Intercultural Center (ICSE) and the Vice President for Student Affairs and Enrollment Management suite is located in the SMC across from the Galley.

The **Dr. Rita Smith Wade-El Intercultural Center** is located on the main level just around the corner from the Department of Campus Life suite. Also known as the Intercultural Center or ICSE, the Center provides a sense of belonging, education and identity-development opportunities for students. The space has a resource room which includes a robust library of books and information related to race, gender, sexual orientation, equity and social justice. Lounge and study space options are available to students.

The **Business Office** is located on the main level of the SMC. This area houses the banking services for registered student organizations. Personal checks up to \$50 can be cashed with a valid MU ID card. This office also exchanges cash for change needed for laundry machines.

Located towards the center of the building, **The Galley** serves as both a cafeteria and a grab-and-go. This popular dining and gathering area

features salads, sandwiches, cheesesteaks, hamburgers, pastas and pizza.

Located towards the center of the building, the **Ticket Office** provides ticket sales services to Millersville University departments, offices, local community, and student clubs and organizations. Here you can purchase tickets for all ticketed events, athletic events and ticket plans, and receive commencement ticket information.

The **IT Technical Operations** office is located in the SMC lower level. Technical operations specializes in audio, video, lighting and other electronic support for campus functions. Meetings, conferences, lectures, cultural affairs and concerts are just a few of the events serviced by the technical operations department.

Towards the center of the SMC is the PSECU e-Center. **PSECU** is a member-owned, self-service provider of financial services, including checking and savings accounts. Millersville University students may set up a bank account at the e-Center inside of the SMC. There are also several PSECU ATMs located on campus, including inside of the SMC.

The **SMC Rec Center** is a facility utilized daily for all students. It contains:

- Various fitness equipment
- Indoor track
- Three-court field house (Marauder Courts)
- Multi-activities court (MAC)
- Two racquetball courts – one of which has been converted into a Martial Arts room
- Functional training room
- Dance studio

The Rec Center also provides group fitness classes and personal training.

The Campus Recreation Office suite is located in the SMC Rec Center in SMC 38, just across from the dance studio. Along with the SMC Rec Center, the Campus Recreation Department oversees Club Sports, Intramurals, Outdoor Recreation/Ropes Course, and various special events. The Ville Rec app, which can be downloaded on any smartphone, is a one-stop shop version of IMLeagues.com (<http://IMLeagues.com>) for everything Campus Recreation at the university.

The **University Store** is located in the northern end of the SMC. A large selection of imprinted campus apparel and school spirit items is available for purchase. For your convenience, the store also offers art supplies and materials required for classes, store gift cards, postage stamps, computer accessories, and a selection of items students may need while on campus. While The University Store does not stock textbooks, online textbook orders placed through Textbook may be conveniently picked up here.

Veterans

Millersville is approved to offer training to veterans under Title 38, United States Code, Section 3675, under the following: Chapter 30—Montgomery G.I. Bill; Chapter 31—Vocational Rehabilitation (Disabled Veterans); Chapter 32—Post-Vietnam Era Veterans; Chapter 33—Post-9/11 Era Veterans; Chapter 35—War Orphans and Widows Educational Assistance Act; and Chapters 1606 and 1607—Selected Reserves. For further information, contact the Veterans Resource Center, Mercer House, 717-871-4343 or vrc@millersville.edu.

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Accounting (ACCT)

ACCT 179: 3 s.h.

Experimental

Experimental course in Accounting.

ACCT 279: 3 s.h.

Experimental

Experimental Course in Accounting

ACCT 302: 3 s.h.

Organizations and Transactions

Continuation of BUAD 202. Includes such topics as consumer law, debtor-creditor law, secured transactions, bankruptcy, forms of business organization, securities regulation, antitrust, labor-management relations, employment discrimination, environmental law, international business, wills and trusts. Recommended for students studying for the CPA exam, or for business students who wish to broaden their knowledge of the legal environment of business. Counts as a business administration departmental elective, or as an accounting elective in the accounting option. Offered annually. Prereq: BUAD 202.

ACCT 361: 3 s.h.

Intermediate Accounting 1

Financial statement preparation with special attention to revenue recognition and asset valuation. Emphasis on generally accepted accounting principles and accounting theory. Students will develop a familiarity with the official pronouncements. Offered in fall, spring. Prereq: C- or higher in BUAD 162.

ACCT 362: 3 s.h.

Intermediate Accounting 2

Examination of generally accepted accounting principles as they apply to long term liabilities and equity. This course is a continuation of Intermediate Accounting I. Includes issues of current interest. Selected readings from pronouncements. Offered in fall, spring. Prereq: C- or higher in BUAD 341 and ACCT (formerly BUAD) 361.

ACCT 363: 3 s.h.

Accounting Information System

Special emphasis on current problems and issues using small business accounting software. Offered infrequently. Prereq: C- or higher in ACCT (formerly BUAD) 361.

ACCT 364: 3 s.h.

Cost Accounting

Investigates cost accounting techniques such as budgeting, accounting controls, standard cost, operation evaluation techniques, variance analysis and performance analysis. The role of cost accounting in profit planning and decision making is examined. Offered in fall, spring. Prereq: C- or higher in BUAD 162, 206 (formerly 306).

ACCT 365: 3 s.h.

Not-For-Profit Accounting

A review of fund accounting, application of fund accounting to nonprofit organizations such as state and local governments and health care institutions. Offered infrequently. Prereq: BUAD 161.

ACCT 366: 3 s.h.

Federal Income Tax 1

Study of federal income tax laws as they relate to individuals and businesses. Topics include gross income, deductions, basis, gains and losses and tax computations. Students are introduced to tax research techniques and applications. Offered annually. Prereq: C- or higher in both BUAD 162 and 202.

ACCT 367: 3 s.h.

Federal Income Tax 2

Study of corporate, S Corporations and partnership taxation. Topics include corporate organization, distribution, reorganization, accumulated earnings, S elections, partnership formation, operation, and transfers. Introduction to estate planning and wealth accumulation. Offered annually. Prereq: ACCT (formerly BUAD) 366.

ACCT 368: 3 s.h.

Business Applications: Excel

Application of Microsoft Excel for accounting and other business functions. Preparation for the official Microsoft Excel Certification exams. Prereq: BUAD 206

ACCT 379: 3 s.h.

Experimental

Experimental Course in Accounting

ACCT 405: 3 s.h.

Topics in Accounting

Advanced, innovative, or exploratory topics and disciplines within accounting. Specific content items developed by instructor. Most topics will be for business majors only. Offered periodically. Prerequisites may vary. Consult the current course offering.

ACCT 461: 3 s.h.**Auditing**

Study of the attest function of the independent auditor and review of theory and procedures for evaluating internal control and financial information. Includes generally accepted auditing standards as developed and applied to different audit areas in order to establish the fairness of financial information. Offered annually. Prereq: C- or higher in ACCT (formerly BUAD) 361.

ACCT 465: 3 s.h.**Advanced Accounting**

Accounting formation, operation and liquidation of the partnership and corporate forms of business. Emphasis on preparing consolidated financial statements. Review of topics such as nonprofit accounting and multinational business. Offered annually. Prereq: ACCT (formerly BUAD) 362.

ACCT 479: 3 s.h.**Experimental**

Experimental Course in Accounting

ACCT 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

Accounting/Finance (ACFN)

ACFN 300: 3-12 s.h.**Co-Op Ed Exp in Acct/Fin**

Cooperative Education in Accounting and/or Finance

ACFN 400: 3-12 s.h.**Co-Op Ed Exp in Acct/Fin**

Cooperative Education Experience in Accounting/Finance

ACFN 489: 1-4 s.h.**Honors Course**

Honors Course

ACFN 498: 1-4 s.h.**Independent Study**

Independent Study in Accounting and Finance. See catalog or department for eligibility and registration information.

ACFN 500: 3-12 s.h.**Co-Op Ed Exp in Acct/Fin**

Cooperative Education Experience in Accounting/Finance

African American Studies (AFAM)

AFAM 179: 1-3 s.h.**Experimental**

Experimental

AFAM 201: 3 s.h.**Intro to African American Studies (D, G3)**

Provides an overview of African-American culture and history. African-American perspectives and contributions in the areas of literature, art, theater, music, politics, economics, science and technology, medicine, male-female relationships, family, the church and the media will be presented. Offered annually.

AFAM 300: 3-12 s.h.**Co-Op Ed Experience in Afam**

Co-Op Ed Experience in Afam

AFAM 400: 3-12 s.h.**Co-Op Ed Experience in Afam**

Co-Op Ed Experience in Afam

AFAM 401: 3 s.h.**Senior Seminar in African American Studies**

An examination and discussion of current research issues in African-American studies. May be taken in conjunction with a 2 to 3 credit independent study.

AFAM 496: 3 s.h.**Topics African American Study**

Presents a detailed investigation on a topic of current interest in African-American studies. Topics will be announced.

AFAM 498: 1-3 s.h.**Ind Stdy:**

Ind Stdy:

Anthropology (ANTH)

ANTH 121: 3 s.h.**Cultural Anthropology (G3)**

Introduces basic concepts and topics: culture, fieldwork, communication, sex roles, social organization, politics, economics, belief systems, culture change and applied anthropology.

ANTH 121H: 3 s.h.**Hnrs:Cultural Anthropology (G3)****ANTH 122: 3 s.h.****Physical Anthropology (G3)**

The anthropological study of human evolution: paleoanthropology, primatology and human population genetics, and the study of human variation— the ways humans adapt biologically to their environments. Offered annually.

ANTH 123: 3 s.h.**Introduction To Archeology (G3)**

Introduces methods and theory of contemporary archaeology using examples from Old and New World prehistory. The relationship of archaeology to anthropology is emphasized. Offered annually.

ANTH 179: 1-3 s.h.**Experimental**

Experimental

ANTH 220: 3 s.h.**Ethnographic Methods (W)**

Introduces ethnographic research methods through individual or group fieldwork, emphasizing the ethnographic interview and participant observation. Prereq: ENGL 110 or permission of instructor.

ANTH 222: 3 s.h.**American Indian (G3, W)**

Examination of past and present cultures of the native peoples of North America. Offered periodically. Prereq: ENGL 110.

ANTH 223: 3 s.h.**People and Cultures Of Mediter (G3)**

Comparison and contrast of the history and culture of rural and urban society in the Mediterranean region. Focus is on topics and themes of importance to the circum-Mediterranean culture area. Offered periodically.

ANTH 226: 3,6 s.h.**Compar Societs: (G3, W)**

Comparative investigations of a topic or region of current interest in the field of anthropology. Offered annually. Prereq: ENGL 110.

ANTH 227: 3 s.h.**Culture Through Film (G3, W)**

Comparative study of cultures through the medium of film using anthropological theories, perspectives and texts. Offered annually. Prereq: ENGL 110.

ANTH 227H: 3 s.h.**Culture Through Film (G3, W)**

Comparative study of cultures through the medium of film using anthropological theories, perspectives and texts. Offered annually. Prereq: ENGL 110.

ANTH 233: 3 s.h.**Topics In Archaeology (G3)**

Examines human cultural evolution before and after the advent of writing, using archaeological and related records. Topics vary from the rise of civilization to the decline of local communities. Offered annually.

ANTH 233H: 3 s.h.**Hon: Topics in Archaeology (G3)****ANTH 235: 3 s.h.****Historical Archaeology (G3)**

A comparative study of methods and aims in the discipline of historical archaeology (the excavation of sites dating post-1500), including excavation and analysis techniques, approaches to archaeological research, and case studies of specific excavations.

ANTH 279: 3 s.h.**Experimental**

Experimental

ANTH 300: 3-12 s.h.**Co-Op Ed Experience in Anthro**

Co-Op Ed Experience in Anthro

ANTH 320: 3 s.h.**Archeological Method and Theory**

Focus on current developments in archaeological method and theory, with specific emphasis on contract archaeology, survey methods, artifact analysis and contemporary theoretical approaches. Offered annually. Prereq: ANTH 123 plus 3 additional hours of anthropology or permission of instructor.

ANTH 320H: 3 s.h.**Hon: Arch Method and Theory****ANTH 325: 3 s.h.****Medical Anthropology**

Cross-cultural study of health and healing, including comparative medical systems, theories of disease, patients/healers in the context of culture, mental health, bioethics, interaction of culture, biology and environment, and the effects of cultural change. Offered periodically.

ANTH 326: 3 s.h.**Anthropology of Religion (G3)**

A cross-cultural examination of religious diversity. Primary emphasis will be placed on the five major world religions, although other religious traditions may also be considered. The course examines religion as a form of cultural practice, how people utilize religion to orient themselves to the social worlds in which they live, and the ways in which religion shapes peoples' lives. Pre-req: C- or higher in ANTH 121, restricted to Juniors and Seniors, Majors and Minors in the Sociology/Anthropology department, or instructor permission.

ANTH 327: 3 s.h.**Urban Anthropology (G3)**

This course focuses on urbanism (the social and cultural dynamics of humans living within a large, dense city environment). Various topics to be examined in this course include the rise of urbanism, globalization, the dynamic nature of ethnic and class relations within urban communities, social and political activism among urban populations, migration, and settlement. 3 credits. Pre-requisite: ANTH 121

ANTH 336: 3 s.h.**Language & Communication (G3)**

A Comparative Course that examines language as humans' primary means of communication. Although virtually all animals communicate in some form, language is considered distinctly human as a result of cognitive, cultural, and physiologically distinct features of our species. The course examines language as both a system and performance. The systematic approach towards language study examines the structural components of language: phonemes, morphemes, syntax, grammar, etc., while a performance approach towards language study examines the art and style of communication (regional accents and dialects, slang, etc.). Anthropologists widely consider language to be the single most important aspect of human culture, as language is the means by which culture is transmitted to others. Other key topics to be examined in the course include language and identity, bilingualism, the critical age of language development, language shift vs. language maintenance, the development of pidgins and Creole languages (with a particular focus on Black English Vernacular, Spang/ish, and the Ca/6 dialect of the Southwestern United States), the prescriptive vs. descriptive debate within linguistics, linguistic profile, language prejudice, and the rise of linguistic nationalism (as seen in cases such as the situation in Quebec among Franco-Canadian nationalists and the "English as the Official Language" debate in the United States. Pre-req: ANTH 121 and Junior class standing.

ANTH 344: 3 s.h.**Gender, Race, and Class (P)**

The intersecting role of gender, race and class on human social life in the U.S. and other cultures. An interdisciplinary and comparative examination of the ways social categories define, limit and liberate human potential. Offered annually. Prereq: COMM 100, ENGL 110, junior status and at least two social science courses.

ANTH 344H: 3 s.h.**Hnrs:Gender, Race, and Class (P)**

Hnrs:Gender, Race, and Class

ANTH 379: 3 s.h.**Experimental**

Experimental

ANTH 400: 3-12 s.h.**Co-Op Ed Experience in Anthro**

Co-Op Ed Experience in Anthro

ANTH 422: 3 s.h.**History of Anthropological Theory**

Examines, in a developmental fashion, the attempts made by anthropologists to explain human similarities and differences, and the dynamics of culture change. Offered annually. Prereq: junior/senior status and a minimum of 9 s.h. in anthropology.

ANTH 425: 1-6 s.h.**Field Study**

Individual or group research in any of the subdisciplines of anthropology, including archaeological field school and ethnographic field projects. Offered periodically. Prereq: permission of instructor.

ANTH 458: 3-6 s.h.**Seminar In Anthropology**

Research and group discussions for advanced students on various topics of interest. A total of 6 s.h. may be taken. Offered in alternate years. Prereq: permission of instructor.

ANTH 479: 3 s.h.**Experimental**

Experimental

ANTH 489: 1-4 s.h.**Honors Course**

Two to four semesters of supervised research by highly motivated students capable of conducting independent research projects. Prereq: 3.0 GPA and recommendation by faculty mentor. For further information, see the Special Academic Opportunities section.

ANTH 498: 1-6 s.h.**Independent Study**

For further information, see the Special Academic Opportunities section.

ANTH 499: 1-4 s.h.**Departmental Honors**

Two to four semesters of supervised research by highly motivated students capable of conducting independent research projects. Prereq: 3.0 GPA and recommendation by faculty mentor. For further information, see the Special Academic Opportunities section.

ANTH 500: 3-12 s.h.**Co-Op Ed Experience in Anthro**

Co-Op Ed Experience in Anthro

Applied Engineering (AENG)

AENG 101: 3 s.h.**Introduction to Engineering (G2)**

This course engages learners in using scientific and mathematical reasoning to explore and engage in engineering design, covers the fundamentals of the engineering design process, and exposes students to a wide range of career paths available to engineers, including engineering, applied engineering, and engineering technology areas. In this course, students will follow the creativity-based engineering design process through laboratory-based activities. Students will design and manufacture physical artifacts to meet a specific engineering challenge, and must defend their decisions with scientific and mathematical reasoning. This course focuses on how engineers apply their creativity, resourcefulness, mathematical, scientific and technical knowledge and skills in the creation or refinement of technological products/systems.

AENG 110: 3 s.h.**Communication and Information Systems**

Communication technology to design, compose, send, receive and understand ideas and information. Emphasis on graphic and electronic media. Experiences with graphic design, graphic reproduction, desktop publishing, web-page development, photography, and digital video and audio. 2 hrs. lec., 3 hrs. lab.

AENG 120: 3 s.h.**Energy Systems**

An introduction to energy and power systems. Principles of conventional and alternative energy resources and energy conservation, and electrical, fluid, and mechanical power will be studied along with environmental concerns associated with power production. 2 hours lecture, 3 hours lab.

AENG 130: 3 s.h.**Production Materials & Processes**

The integration and interrelationships of materials and processes for construction and manufacturing, including the application of math and scientific principles and the technological impacts on industry and society. Requires experiences in materials processing and production tooling. 2 hrs. lec., 3 hrs lab.

AENG 140: 3 s.h.**Bio-related Technologies**

Agriculture, medicine and other technologies in which living organisms are used to solve problems and modify products and systems. Includes problem solving, design and research activities for understanding biorelated technologies, issues and impacts. 2 hrs. lec., 3 hrs. lab. Reserved for EDTE majors.

AENG 179: 3 s.h.**Experimental**

Experimental

AENG 241: 3 s.h.**Drafting Communications**

Introductory technical sketching, conventional drafting and computer-aided drafting (CAD). Experiences with equipment use and care, lettering, geometric constructions, multiview projection, dimensioning, sectioning and pictorial representation. 2 hrs. lec., 3 hrs. lab.

AENG 243: 3 s.h.**Technical Sketching, Design & Rendering**

Freehand sketching and basic elements of two-dimensional design and rendering. Various sketching and shading techniques are developed. Elements and principles of design, methods of designing, and evaluation and design of products are included. An application software is used to render design sketches. 2 hrs. lec., 3 hrs. lab.

AENG 251: 3 s.h.**Print Media Systems**

Contemporary resources, processes and impacts of graphic reproduction. Emphasis on workflows relative to offset lithography, flexography, gravure, digital printing and screen printing. Covers graphic design; digital-image composition; digital photography; scanning; prepress, press and postpress production. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 110 or ART 244 or COMM 201 or by permission.

AENG 252: 3 s.h.**Web Publishing Systems**

Planning, creating, and publishing of web media. Topics include information design, optimization of graphic and audio files, navigation systems and website technologies. Multimedia authoring software will be utilized to produce and publish websites that include digital animations and interactive forms. 2 hrs. lec., 3 hrs. lab. Prereq: AENG 110, DESN 201 or permission of instructor.

AENG 258: 3 s.h.**Package Engineering Fundmentls**

An introduction to the packaging industry with an emphasis on package design and engineering. Includes a study of materials used in packaging and an introduction to the purposes and requirements of packaging. Laboratory activities include the structural design of package components using software. Prereq: AENG 251.

AENG 261: 3 s.h.**Electronic Systems**

Survey of electricity and electronics, including typical direct current and alternating current applications, safe practices and technological impacts. Experiences include breadboarding, design and problem solving, use of test equipment and electronic project assembly/troubleshooting. 2 hrs. lec., 3 hrs. lab.

AENG 261H: 3 s.h.**H:Electronic Systems****AENG 262: 3 s.h.****Semiconductor Electronics**

In-depth study of semiconductor theory, including diodes, transistors and silicon-controlled rectifiers. Emphasizes digital, linear and hybrid integrated circuits. Covers surface mount and emerging technologies, such as nanotechnology and biotechnology. Practical applications include prototyping circuits, design and problem solving, use of test equipment and troubleshooting. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 261 or permission of instructor.

AENG 271: 3 s.h.**Processing Nonmetallic Materials**

Various nonmetallic materials, processes, products and impacts, including polymers, ceramics, wood, clay, composites and glass. Instruction and experiences provided on safety and the use of tools and machines associated with nonmetallics. Includes production activities in each of the specified nonmetallic material areas. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 130.

AENG 279: 3 s.h.**Experimental**

ITEC 279

AENG 281: 3 s.h.**Processing Metallic Materials**

Examination of metallic materials, including their structures, properties and the processes used to convert them into products. Particular attention is paid to the relationship between microstructural characteristics, physical and mechanical properties and production methods. Connections are made between the properties of metals and their applications. Laboratory experiences include manual and automated production techniques, conditioning processes and characterization methods to quantify process-property-performance relationships. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 130.

AENG 300: 3-12 s.h.**Co-Op Ed Experience in AENG**

Co-Op Ed Experience in AENG

AENG 301: 3 s.h.**Technology and Humans (P)**

Analysis of the development of technology and its impact on humans and a realization of the importance of human technological behavior on the environment, social/cultural systems and the future. Students use analytical skills on a written independent research project and oral skills to present and defend positions on technological problems facing our society. Prereq: COMM 100, ENGL 110 and junior class standing.

AENG 301H: 3 s.h.**Hnrs:Technology and Humans (P)**

Hnrs:Technology and Humans

AENG 302: 3 s.h.**Futurology (P)**

A nontechnical interdisciplinary course to help students identify and analyze forces causing technological and social change. Using an understanding of the processes of technological and social change and research techniques for forecasting the future, students complete a written independent research project. Develops skills to project future technological and social developments and their impacts. Prereq: COMM 100, ENGL 110 and junior class standing.

AENG 302H: 3 s.h.**H: Futurology (P)****AENG 303: 3 s.h.****Tech Assessmnt:Amish and Othrs (D, P)**

A nontechnical course designed for all students to help learners analyze the use of technology, with focus on Anabaptists (particularly Amish, Old Order Mennonites and certain Brethren groups) of Lancaster County. Contrasting the way these groups assess and use technology with that of their own culture will allow students to better understand their own approach to technology. Students will develop their own technology-assessment system based on independent research. Prereq: COMM 100, ENGL 110 and junior class standing.

AENG 303H: 3 s.h.**H:Tech Assessmnt:Amish/Others (D, P)****AENG 304: 3 s.h.****Energy, Sustainability (P)**

A non-technical course for all students dealing with energy sustainability, energy resources and conservation, and the effects of energy use on our environment. This course contains up-to-date information on essential subjects such as solar energy, wind energy, nuclear energy and energy conservation. Contemporary alternatives such as photovoltaic electricity and wind power generation will be addressed. Individual transportation to field sites is required (discuss with instructor before registering for class if this is an issue). Prereq: COMM 100, ENGL 110, MATH 100 or higher and Junior class standing.

AENG 304H: 3 s.h.**Hon: Energy, Sustainability (P)****AENG 322: 3 s.h.****Transportation**

Includes the application of scientific and mathematical principles to the solution of land, air, space, and/or water transportation challenges. Incorporates the investigation of a variety of robotics and control systems with emphasis on computational thinking. 2 hours lecture, 3 hours lab. Prerequisites: ITEC 120, ITEC 261, Math 100 or higher

AENG 325: 3 s.h.**Power Conversion and Control**

Electric motors as conversion devices explored. Experiences include designing, creating and testing fluid and electrical energy conversion circuitry to perform specific control applications. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 120 or 261.

AENG 326: 3 s.h.**Fluid Power**

Investigation of scientific, mathematical and technological principles. Experiences with the design, creation, use and repair of hydraulic and pneumatic systems. A research and development activity required. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 120 or 325.

AENG 326H: 3 s.h.**Hon: Fluid Power****AENG 327: 3 s.h.****Engineering Structures**

Students will design, construct, and evaluate model structures. Emphasis is placed on the use of science, technology, engineering, and mathematical (STEM) principles as they relate to structures. 2 hours lecture, 3 hours lab. Prerequisites: ITEC 120, 130, 241, and Math 100 or higher.

AENG 331: 3 s.h.**Construction Technology 1**

Utilization of materials for the construction of residential and light commercial structures. Includes the effects of these changes on people and their environment. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 271 or permission of instructor.

AENG 332: 3 s.h.**Construction Technology 2**

Methods, materials and processes employed in heavy and industrial construction technologies. Includes field-engineering techniques, equipment, civil engineering fundamentals and use of modeling and simulation techniques. Emphasis given to construction projects such as bridges, roads, industrial and commercial buildings, utilities, tunnels and dams. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 271 or permission of instructor.

AENG 342: 3 s.h.**Computer-Aided Engineering Drawing**

Advanced study of threads, gears and standard fasteners; geometric dimensioning and tolerancing (GD&T); schematic, production and assembly drawings; and introduction to solids modeling. Builds on view orientation, projection systems and basic CAD. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 241.

AENG 344: 3 s.h.**Product Design**

An exploration of the thinking processes, problem solving strategies, documentation techniques, and making skills used by designers toward creating new products. The use of the elements and principles of design, aesthetics, ergonomics, and social/cultural considerations as tools toward designing for manufacture, designing for sustainability, and universal design are emphasized. Other topics explored include the role of human emotion toward design and design's influence on human history.

AENG 344H: 3 s.h.**Hhrs: Product Design****AENG 345: 3 s.h.****Statics/Strength of Materials**

Elementary, analytical and practical approaches to the principles and physical concepts of statics. Covers force systems; equivalent force/moment systems; distributed forces; internal forces; principles of equilibrium; application to trusses, frames and beams; stress and strain; and mechanical properties of materials. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 241 and MATH 151, 160 or 161; or permission of instructor.

AENG 346: 3 s.h.**Architectural Drawing**

Study of principles of residential design and architectural styles with an emphasis on the development of a complete set of original working and presentation drawings using computer-aided design (CAD) and Building Information Modeling (BIM). 2 hours lecture, 3 hours lab. Prerequisite: ITEC 241.

AENG 347: 3 s.h.**Engineering Visualization**

Students study the relationships of three-dimensional lines, angles, surfaces, and solids by projecting three-dimensional reality onto a two-dimensional surface such as a computer screen. The students gain the necessary tools and principles to graphically visualize, manipulate, and solve engineering and architectural design problems. Traditionally these problems were solved by doing mathematical calculations. In contrast, this class uses descriptive geometry to solve three-dimensional spatial problems graphically. The computer is used as the main drafting tool. Engineering visualization extends beyond the principles of descriptive geometry. Students use visualization techniques and spatial reasoning to solve fundamental engineering concepts and related problems, represent their design proposals, view the 3D environment from any angle using a flying camera, and support their spatial, numeric, algebraic and quantitative thinking. 2 hrs. lec., 3 hours lab. Prereq: ITEC 241.

AENG 348: 3 s.h.**Green Building and Sustainable Systems**

This course covers fundamentals of green buildings and sustainable energy technologies and their dynamic costs and benefits. Green buildings are designed and constructed to maximize the energy efficiency of the envelope and provide superior quality in the indoor environment. This course allows students to explore the integration of design principles and application of renewable energy, natural building materials, and ecological landscape into building design and community development. Pre-requisite: MATH 130 and ITEC 241

AENG 351: 3 s.h.**Digital Imaging**

Create digital images using cameras and scanners. Set up and characterize a digital workstation and produce digitally imaged products. Hands-on activities will require students to demonstrate their proficiency using contemporary hardware and software to compose, capture, convert, color and tonal correct, manipulate and print digital images and products. 2 hrs. lec., 3 hrs. lab. Offered annually.

AENG 355: 3 s.h.**Contemporary Printing**

Advanced study of today's major printing processes, especially offset and screen. Experiences include layout and design, computerized electronic composition, copy preparation, line and halftone photography, special-effects photography, exposure unit calibration, image assembly, platemaking, printing and finishing complex graphic products. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 251.

AENG 356: 3 s.h.**Desktop Publishing (W)**

Utilization of desktop microcomputer systems to design, compose and publish graphic materials. A research and development activity required. 2 hrs. lec., 3 hrs. lab. Prereq: ENGL 110.

AENG 357: 3 s.h.**Packaging Specialty Printing**

In-depth study of problems and processes related to printing and converting in package, label and specialty printing. Students study and experience package design structures, materials flexographic printing, screen container printing, converting methods and bar code applications. Current industry practices explored. 2 hrs. lec., 3 hrs. lab. Prereq: AENG 241, 251, and 258; or DESN 348.

AENG 357H: 3 s.h.**Hon: Packaging Spec Prnting****AENG 364: 3 s.h.****Digital Electronics**

Practical applications of digital logic for processing electronically encoded information. Covers numbering systems, logic design, basic gates, sequential and combination logic, and digital troubleshooting. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 262 or permission of instructor.

AENG 375: 3 s.h.**Polymer and Ceramic Technology**

Design, development and production of polymer and ceramic products. Covers contemporary pattern and molding materials along with industrial forming processes. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 271.

AENG 376: 3 s.h.**Woodworking Technology**

Use of hand tools and machine woodworking techniques to fabricate wood products. Covers technological problems and contributions of using wood in daily living. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 271.

AENG 379: 3 s.h.**Experimental**

Experimental

AENG 382: 3 s.h.**Automated Manufacturing**

A comprehensive experience in the design, programming and implementation of computer-controlled manufacturing processes. Emphasis is placed on understanding machine code, utilizing computer-aided design and manufacturing (CAD/CAM) software and identifying proper process controls to increase productivity and reduce cost. Laboratory experiences develop a combination of software and hardware competencies. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 130; and ITEC 241; and ITEC 271 OR 281 OR 342; or permission of instructor.

AENG 392: 3 s.h.**Intro to Industrial Training (W)**

Techniques and procedures required to conceptualize, prepare, deliver and evaluate training programs. Includes experiences in preparing instructional media, presenting a unit of instruction and developing appropriate evaluation instruments. Prereq: ENGL 110.

AENG 400: 3-12 s.h.**Co-Op Ed Experience in AENG**

Co-Op Ed Experience in AENG

AENG 400H: 3-12 s.h.**H: Co-Op Ed Experience in AENG****AENG 425: 3 s.h.****Industrial Robotic Systems**

This course focuses on the study of industrial robotics and modern machine vision technology. Topics include the evaluation, justification, programming, safety, and integration of industrial robotic devices with machine vision systems. 2 hours lecture, 3 hours lab. Prerequisite: ITEC 325.

AENG 427: 3 s.h.**Programmable Logic Controllers**

Focus on the integration and application of the programmable logic controller (PLC). Students design, construct and troubleshoot a variety of industrial control systems utilizing programmable logic controllers, networks, human-machine interfaces, variable frequency drives, control loops and sensors. 2 hrs. lec., 3 hrs. lab. Prereq: AENG 325; and MATH 151 or 161 or permission of instructor.

AENG 433: 3 s.h.**Construction Project Management**

Methods, processes and information necessary to manage a construction project. Includes cost and risk control; developing and applying policies and procedures; subcontractor management; specifying and purchasing materials; scheduling; and contract development. Experiences include use of project-planning and cost-estimation software for development of a complete project plan. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 332 or permission of instructor.

AENG 435: 3 s.h.**Manufacturing Enterprise**

Exploration of the technological and management processes for conceptualizing and manufacturing a product. Experiences with product engineering, production engineering, manufacturing management and enterprise operations in a student-centered learning environment. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 110, 120, 130, 140, 241 and 271 or 281, and a major in technology education (TECE).

AENG 446: 3 s.h.**Advanced Applications in Drafting and Design**

Focuses on advanced techniques, applications, and field-related career interactions in drafting, design, modeling, and rendering based on industry standards and advancements. Research, development, and presentation activities, plus completion of projects are required. 2 hrs. lecture, 3 hrs. lab. Prereq: AENG (ITEC) 342.

AENG 448: 3 s.h.**Machine Tool Design**

Analysis, planning, design, construction and application of tools, methods and procedures necessary to increase manufacturing productivity. Integrated with machining and fabrication practices. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 342.

AENG 455: 3 s.h.**R&D in Graphic Communications and Packaging**

This course involves testing various components of the manufacturing processes involved in creating print and digital/web media. Typical activities will involve testing colorants (e.g., inks, toners, etc.) and substrates used in lithography, flexography, screen-printing and digital printing systems. Optimum conditions for specific printing methods will be determined through controlled testing and examination. Students may also propose to examine specific interrelationships between production procedures used in various digital media processes. The course will also cover color separation and reproduction, which includes the study of process color theory, desktop color separations and color reproduction. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 355 or permission of instructor.

AENG 457: 3 s.h.**Print Production Management & Cost Estimating**

A study of current topics and systems for setting printing production standards, cost estimating, production scheduling, job planning and the consideration of new equipment and technologies. Students will integrate the technical knowledge learned through previous graphics laboratory classes with other course work in management, marketing, science, business, etc., with a focus on how it all relates specifically to the printing production process. The course is structured to offer an overview in several areas of print production management, with emphasis on cost estimating and current printing industry topics. 2 hours lecture/3 hours lab. Prereq: ITEC 355 and MATH 130, or permission of instructor.

AENG 467: 3 s.h.**Mobile Robotics**

Study of the development of mobile robotic solutions. Emphasis is placed on the programming and interfacing of microcontrollers to control autonomous mobile robots in known environments. A research and development activity is required. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 262 or permission of instructor.

AENG 467H: 3 s.h.**Hon: Mobile Robotics****AENG 468: 3 s.h.****Control Network Integration**

This course utilizes both theory and applications related to industrial network architectures for system control and data acquisition integration. Course topics include design methodologies, installation, commissioning, troubleshooting, grounding/bonding, standards, serial, parallel, wired and wireless protocols. A research and development project is required. 2 hours lecture, 3 hours lab. Prerequisite: AENG 427; Prerequisite or Co-requisite: AENG 425.

AENG 479: 3 s.h.**Experimental****AENG 485: 3 s.h.****Adv Manufacturing Systems**

Computer-integrated manufacturing (CIM) systems, strategies and implementation across the manufacturing enterprise. Focus on the integration of systems such as design of products; computer-aided engineering (CAE); the control of quality, design and construction of production tooling, rapid prototyping, computer-aided process planning (CAPP), finite element analysis (FEA), computer-aided design (CAD), computer-aided manufacturing (CAM) and computer numerical control (CNC). Manufacturing, automation and robotics emphasized. Advanced-level production experiences with an intensive research and development component required. 2 hrs. lec., 3 hrs. lab.

AENG 489: 1-4 s.h.**Honors Course**

Preparation of honors thesis proposal. For the definition of honors course and student eligibility, refer to the departmental honors section of this catalog. EDTE, ARET, MFET, PET, AETM and OSEH majors may enroll in the Department of Applied Engineering, Safety & Technology honors program. Contact the department office for guidelines and an application.

AENG 492: 3 s.h.**Technical Entrepreneurship**

A capstone Applied Engineering & Technology Management course in which students study and apply technical, managerial, and entrepreneurial concepts to the development and operation of a student-centered venture. Students organize and operate a model enterprise to develop manufacture and market a consumer product.

AENG 494: 3 s.h.**Total Quality Management**

The history and development of quality movements; factors influencing the total quality concept; the scope of modern quality systems; management organization and strategies for quality; engineering technology for quality; and statistical tools for measurement and monitoring of quality. 2 hrs. lec., 3 hrs. lab. Prereq: MATH 130 or permission of instructor.

AENG 498: 1-4 s.h.**Independent Study**

See Independent Study section of this catalog. Written permission of faculty sponsor and department chairperson required.

AENG 499: 1-4 s.h.**Departmental Honors (W)**

Completion and defense of thesis research. See departmental honors section of this catalog. Contact the Department of Applied Engineering, Safety & Technology office for guidelines.

AENG 499H: 1-4 s.h.**Hon: Departmental Honors****AENG 500: 3-12 s.h.****Co-Op Ed Experience in AENG**

Co-Op Ed Experience in AENG

AENG 515: 3 s.h.**Adv Prob:**

Resources, processes and outcomes of selected technical areas in technology education. Technical area emphasized (e.g., computer-aided drafting and design, computer numerical control, desktop publishing, digital electronics, manufacturing, photography and robotics) varies with the course offering. Laboratory experiences focus on technological problem solving. 2 hrs. lec., 3 hrs. lab.

AENG 525: 3 s.h.**Adv Prob:**

Resources, processes and outcomes of selected technical areas in technology education. Technical area emphasized (e.g., computer-aided drafting and design, computer numerical control, desktop publishing, digital electronics, manufacturing, photography and robotics) varies with the course offering. Laboratory experiences focus on technological problem solving. 2 hrs. lec., 3 hrs. lab.

AENG 535: 3 s.h.**Adv Prob:**

Resources, processes and outcomes of selected technical areas in technology education. Technical area emphasized (e.g., computer-aided drafting and design, computer numerical control, desktop publishing, digital electronics, manufacturing, photography and robotics) varies with the course offering. Laboratory experiences focus on technological problem solving. 2 hrs. lec., 3 hrs. lab.

AENG 579: 3 s.h.**Experimental**

Experimental

AENG 586: 1-3 s.h.**Special Topics:**

Investigation of one or more topics of current interest in technology and innovation. Topics vary according to needs and interests of students and faculty involved. Offered periodically.

AENG 587: 1-3 s.h.**Special Topics:**

Investigation of one or more topics of current interest in technology and innovation. Topics vary according to needs and interests of students and faculty involved. Offered periodically.

AENG 588: 1-3 s.h.**Special Topics:**

Investigation of one or more topics of current interest in technology and innovation. Topics vary according to needs and interests of students and faculty involved. Offered periodically.

AENG 589: 1-3 s.h.**Special Topics:**

Investigation of one or more topics of current interest in technology and innovation. Topics vary according to needs and interests of students and faculty involved. Offered periodically.

Art (ART)

ART 100: 3 s.h.**Art in Culture (G1)**

A general study of the role of historical and contemporary art in society. Critical analysis of art that addresses the following: What is art? Why is it made? How is it made? What is the context in which it was created? An understanding of the importance of art and of the creative process. Does not count towards any art major. Offered fall, spring, periodically summer.

ART 111: 4 s.h.**Survey 1 (G1)**

Survey 1 Offered at Franklin and Marshall

ART 115: 4 s.h.**Arts Of East Asia I (G1)**

Arts Of East Asia I Offered at Franklin and Marshall

ART 117: 4 s.h.**E Asian Art:Medieval to Modern (G1)**

E Asian Art:Medieval to Modern Offered at Franklin and Marshall

ART 118: 4 s.h.**Intro to Architectural Design (G1)**

Intro to Architectural Design Offered at Franklin and Marshall

ART 128: 3 s.h.**Art Integration (G1)**

This course provides education majors with a theoretical and practical knowledge base about art and its role in learning. Topics to be explored include: art vocabulary; children's artistic development; art resources, media, materials, tools and techniques; and how these elements are appropriately and authentically incorporated into other content areas. This will provide the prospective educator with the fundamentals for developing an interdisciplinary approach to teaching art across the curriculum.

ART 133: 3 s.h.**Drawing 1 (G1)**

Introduces drawing as artistic expression as well as a form of nonverbal communication. Traditional and contemporary perspectives. Emphasis on original creative solutions to visual problems. Students explore artistic composition employing various drawing media and techniques. Includes criticism, analysis and evaluation. For both the non-art major and the art major. Offered in fall, spring and periodically in summer.

ART 140: 3 s.h.**Digital Foundations of Art (G1)**

An introductory studio course that allows for investigation of contemporary digital media methods used by artists and designers. Image making will utilize raster, vector, and interactive techniques. Primary course emphasis is on creative problem solving followed by technical skill building while using the computer as a tool.

ART 142: 3 s.h.**2D Design (G1)**

Introduces two-dimensional design and composition, applicable to all art forms, in which students seek original, creative solutions to problems. Design principles and methods are employed as students learn language and visual communications techniques. Artistic production, criticism, analysis and evaluation are central to this course. For both non-art and art majors. Offered in fall, spring.

ART 167: 3 s.h.**Experimental Photography (G1)**

Nontraditional, historical and hybrid photographic processes are explored, including pin-hole cameras, photograms and antique processes. Covers criticism, history, analysis and mounting prints for display. Students do not need a camera. Offered fall.

ART 175: 4 s.h.**Islamic Art and Architecture**

Islamic Art and Architecture Offered at Franklin and Marshall

ART 179: 3 s.h.**Experimental**

Experimental

ART 200: 4 s.h.**Chinese Brush and Ink Painting**

Chinese Brush and Ink Painting Offered at Franklin and Marshall

ART 201: 3 s.h.**History and Aesthetics of Photography (G1)**

A survey of the history, principles and theory of photography in the 19th and 20th centuries as it is used as an aesthetic medium and for visual communication. Differentiation between photographs made as art vs. snapshots, photojournalism, scientific record and commercial art is emphasized. Offered periodically.

ART 201H: 3 s.h.**H:Hist and Aesthtcs of Photog (G1)**

H:Hist and Aesthtcs of Photog

ART 202: 3 s.h.**Survey of Art History 1: Prehistoric to c 1400 (G1)**

This course is an introduction to art and to the discipline of art history, beginning with Prehistory through the early Italian Renaissance. The course focuses on the functions and meanings of individual works of art, visual culture, and art history as a discipline. It is designed as an introduction to art history for both non-art and art majors. Offered fall, spring.

ART 203: 3 s.h.**Survey Art History 2: 1400 through 20th Century (G1)**

This course is an introduction to art and to the discipline of art history, beginning with the early Italian Renaissance period through the 20th century. The course focuses on the functions and meanings of individual works of art, visual culture, and art history as a discipline. It is designed as an introduction to art history for both non-art and art majors. Offered fall, spring.

ART 221: 3 s.h.**Introduction to Art Education**

An overview of art education with particular emphasis on historical and contemporary rationales for teaching art, the identification of authentic assessment practices, and the observation of art instruction and alternative career options through a variety of field experiences. Offered fall, spring. Art majors only.

ART 233: 3 s.h.**Drawing 2**

Fundamental drawing skills are stressed and personal expression is emphasized. A variety of techniques and observational exercises will be used. Working from the figure, short and extended studies will be developed. Offered in fall, spring and periodically in summer. Prereq: ART 133.

ART 242: 3 s.h.**3D Design**

Introduces visual composition as related to organizing and working with three-dimensional space. The student seeks original, creative solutions to visual problems by exploring methods and techniques. Covers fundamental visual grammar and principles. Offered in fall, spring. Prereq: ART 142.

ART 245: 4 s.h.**History of Photography (G1)**

History of Photography Offered at Franklin and Marshall

ART 270: 2-4 s.h.**Art Hist Topics:**

Art Hist Topics: Offered at Franklin and Marshall

ART 271: 4 s.h.**Topics:**

Topics: Offered at Franklin and Marshall

ART 273: 4 s.h.**Survey Japanese Art (G1)**

Survey Japanese Art Offered at Franklin and Marshall

ART 275: 4 s.h.**Art History Topics (G1)**

Art History Topics Offered at Franklin and Marshall

ART 279: 3 s.h.**Experimental**

Experimental

ART 282: 3 s.h.**Sculpture 1 (G1)**

An introduction to sculpture as a three-dimensional form of artistic expression, through a variety of sculptural approaches. Covers the critical, the productive, and the evaluative aspects of sculpture as art. Offered fall, spring.

ART 291: 3 s.h.**Intro: Fine Art Metals/Jewelry (G1)**

Introduces jewelry and metals as a form of artistic expression. The student seeks creative solutions to visual problems while employing various metal working techniques and media. Emphasizes basic techniques of cutting, piercing, soldering, forging, forming and finishes of non-ferrous metals. Critical analysis and evaluation of jewelry and metal art are central to the course. For both art majors and non-art majors. Offered in fall and spring.

ART 295: 3 s.h.**Ceramics:Hand Building (G1)**

Introduces ceramic materials and the processes utilizing handbuilding and sculpting methods. Emphasis on the productive, critical, cultural and historical aspects of ceramics as a form of artistic expression. Students seek creative solutions to visual problems. Offered fall, spring.

ART 296: 3 s.h.**Ceramics:Wheel Throwing (G1)**

Introduces ceramic materials and processes utilizing the potter's wheel. Emphasis on the productive, critical, cultural and historical aspects of ceramics as a form of artistic expression. Wheel throwing and glazing techniques are employed as students seek original creative solutions relating to function and aesthetics. For both non-art and art majors.

ART 297: 3 s.h.**Ceramics 2**

Development of ceramic materials and processes as a means of self expression. Introduces glaze preparation, experimentation and basic glaze chemistry and firing techniques. Prereq: ART 295 or 296.

ART 297H: 3 s.h.**Hon: Ceramics 2****ART 300: 3-12 s.h.****Co-Op Ed Experience in Art**

Co-Op Ed Experience in Art

ART 301: 3 s.h.**The Ancient World (G1)**

A survey of Western painting and sculpture from the Paleolithic through the Hellenistic periods. Prereq: ART 202

ART 302: 3 s.h.**The Italian Renaissance (G1)**

A comprehensive analysis of painting and sculpture produced in Florence and Siena from the 13th through the 15th centuries. Prereq: ART 202 or by permission of instructor. Offered periodically.

ART 303: 3 s.h.**The 19th Century (G1)**

A survey of European art of the 19th century. Offered periodically. Prereq: ART 203 or by permission of instructor.

ART 304: 3 s.h.**The 20th Century (G1, W)**

The varied schools and styles of painting and sculpture in the 20th century. Prereq: ENGL 110 and ART 203 or by permission of instructor.

ART 305: 3 s.h.**Women in Art (D, G1, W)**

This course will address ways in which gender issues have affected the visual arts, with an emphasis on art and culture since World War II. This class explores the role of the visual in constructing ideas of "woman" and the ways in which women artists have addressed these constructions in their works and in their lives. Students will critically examine the ways Western culture has defined art and artists in gendered terms, and will extend this study to contemporary art practice globally with attention to intersectionality and difference. Through weekly readings, class discussions, written assignments, oral presentations, and an exam, students will consider how gender is relevant to the creation and study of art and culture. This course is designed to be cross-listed within the Women and Gender Studies Program. No prior knowledge of art or art history is necessary.

ART 306: 3 s.h.**Intro Photography: Darkroom (G1)**

Beginning black and white darkroom course with an emphasis on fine art, including operation of camera, developing film, making enlargements and mounting prints for display. Covers criticism, history and analysis. Students must have a 35mm single-lens reflex film camera with fully manual focusing/exposure capabilities. Offered in fall, spring.

ART 306H: 3 s.h.**H: Intro Photography: Darkroom (G1)****ART 313: 3 s.h.****Art in America (G1)**

A comprehensive survey of 18th and 19th century American painting, concentrating on those influences and traditions that were significant in the development of the art of the new world. Offered periodically. Prereq: ART 203 or by permission of instructor.

ART 316: 4 s.h.**Problems in Advncd Sculpture**

Problems in Advncd Sculpture Offered at Franklin and Marshall

ART 324: 3 s.h.**Designing Meaningful Art Education Experiences (W)**

Build on the rationales for art education addressed in ART 221 with an investigation into designing meaningful art education experiences for PK-12 students. Design art education experiences and will consider how policies at the state and local level influence how teachers enact curriculum in their classrooms. Offered annually. Prereq: Act 34/151 & FBI clearances & TB test results, ENGL 110, ART 221, EDFN 211, 241.

ART 325: 3 s.h.**Methodology and Pedagogy of Art (W)**

An examination of classroom strategies, materials and technologies used in teaching art to develop creative and critical thinking in all students. An emphasis on self-reflection and professionalism though team teaching and service learning in a variety of field experiences. Offered fall, spring. Prereq: Admission to Advanced Professional Studies, ENGL 110, ART 322.

ART 331: 3 s.h.**Book Arts**

Explores the concept of the book as an art form. Emphasis will be on the use of sequencing to express artistic storytelling, narrative, multiples and one-of-a-kind books. Both traditional and contemporary bookbinding techniques will also be reviewed and utilized. Offered periodically.

ART 333: 3 s.h.**Drawing 3**

Continued drawing skill development using a variety of subjects including the figure. Traditional and nontraditional approaches to methods and materials are encouraged. Individual development of a personal idiom of expression will be required. Offered periodically. Prereq: ART 233. Offered periodically.

ART 345: 3 s.h.**Introduction to Computer Art**

Explores and develops design capabilities for aesthetic expression through the use of contemporary digital media. Offered periodically.

ART 345H: 3 s.h.**Hon: Intro to Computer Art****ART 352: 3 s.h.****Painting 1**

An introduction to painting in oil, acrylic and related media in which the student explores basic techniques and approaches to painting through the use of drawing, design and color. Offered in fall and spring. Prereq: ART 133, 142 or permission of instructor.

ART 353: 3 s.h.**Watercolor 1**

Introduces watercolor techniques through a series of problems related to the development of skill in handling the medium. Prereq: ART 133 and ART 142 or permission of instructor.

ART 354: 3 s.h.**Painting 2**

Continued development of painting skill with the emphasis on sustained individual development and technical expression. Offered in fall and spring. Prereq: ART 352 or permission of instructor.

ART 354H: 3 s.h.**H: Painting 2****ART 355: 3 s.h.****Watercolor 2**

Continued development of painting in watercolor with the emphasis on sustained individual development and technical expression. Prereq: ART 353 or permission of instructor.

ART 361: 3 s.h.**Survey Printmaking 1**

Introduction to the four areas of printmaking: relief, intaglio, lithography, and silkscreen. Projects in each of these areas will develop technical skills and understanding of the physical nature of creating original prints. Issues of subject matter, content, and intent will be discussed and explored. Creative and original solutions to visual problems will be emphasized. Offered fall, spring. Prereq: ART 133, 142.

ART 363: 3 s.h.**Lithography Printmaking 1**

Explores multiple approaches to creating lithographic prints. Starts at an introductory level technically and builds with each new process into an intermediate understanding and working knowledge of the process. Covers stone lithography, aluminum plate lithography, and waterless lithography. Offered periodically. Prereq: ART 133, 142.

ART 364: 3 s.h.**Relief Printmaking 1**

Explores multiple approaches to creating relief prints. Starts at an introductory level technically and builds into an intermediate understanding and working knowledge of the process. Covers linocut, alternative relief matrices, color reduction and multiple block relief printing. Offered periodically. Prereq: ART 133, 142

ART 365: 3 s.h.**Intaglio Printmaking 1**

Explores multiple approaches to creating intaglio prints. Starts at an introductory level technically and builds with each new process into an intermediate understanding and working knowledge of the process. The course will cover drypoint etching (hardground/ softground), aquatint and sugar lift, white ground, toner transfers, spitbite, and will introduce color printing (ala poupee/monoprinting). Offered periodically. Prereq: ART 133, 142.

ART 367: 3 s.h.**Water Based Silkscreen 1**

Explores multiple approaches to creating water-based silkscreen prints. Starts at an introductory level technically and builds with each new process into an intermediate understanding and working knowledge of the process. Covers basic to intermediate stencil preparation including photographic processes. Offered periodically. Prereq: ART 133, 142.

ART 368: 3 s.h.**Collage**

Offers a historical look at the last 100 years of collage as a media for fine art. Highlights of its history will be discussed and followed by a hands-on application of the ideas and imagery that it encompasses. Offered infrequently. Prereq: ART 133, 142.

ART 371: 4 s.h.**Art History Topics (G1)**

Art History Topics Offered at Franklin and Marshall

ART 376: 3 s.h.**Intro to Photo: Digital (G1)**

Beginning digital course that introduces the basic skills and concepts associated with digital photography as used by contemporary visual artists and communicators. Covers cameras, computer hardware, photo-editing software, printing, file management, criticism, history and analysis. Students must have a digital single-lens reflex camera.

ART 379: 3 s.h.**Experimental**

Experimental

ART 382: 3 s.h.**Sculpture 2**

Emphasis on continued development of individual artistic expression, with emphasis on contemporary sculptural approaches. Offered fall, spring. Prereq: ART 282.

ART 390: 4 s.h.**Independent Study**

Independent Study Offered at Franklin and Marshall

ART 391: 3 s.h.**Fine Art Metals: Casting (G1)**

Continued development of individual artistic expression in jewelry and metals with the emphasis on artistic inventiveness and personal style. Covers lost wax casting for jewelry scale work, alternative casting methods, mold making, chain making and marriage of metals. Critical analysis and evaluation of jewelry and metal art are central to the course. Offered in fall and spring. Prereq: ART 291.

ART 396: 3 s.h.**Ceramics 3**

Development of the student's own investigation of material and means of self expression using ceramic materials and processes. An in-depth study related to the work being produced. Prereq: ART 297.

ART 400: 3-12 s.h.**Co-Op Ed Experience in Art**

Co-Op Ed Experience in Art

ART 403: 3 s.h.**Northern Renaissance**

An in-depth study of Flemish, Dutch, Bohemian and German painting from the 14th through 16th centuries. Offered periodically. Prereq: ART 202 or by permission of instructor.

ART 403H: 3 s.h.**Hnrs:The Northern Renaissance**

Hnrs:The Northern Renaissance

ART 404: 3 s.h.**Contemporary Movements in Art (G1, W)**

An in-depth study of the contemporary art scene, including an exploration of its cultural and historical roots. Prereq: ENGL 110 and ART 203 or permission of instructor.

ART 406: 3 s.h.**Interm Photography: Darkroom**

Intermediate photography course with an emphasis on fine art, self-expression and creating a body of work, including color techniques, black and white techniques, studio lighting techniques, making enlargements, presenting prints for display. Covers criticism, history and analysis. Students must have a 35mm single-lens reflex film camera with fully manual focusing/exposure capabilities. Offered fall, spring. Prereq: ART 306 or permission of instructor.

ART 409: 3 s.h.**Advanced Photography**

Advanced photography course with an emphasis on fine art, self-expression and creating a long-term body of work, including color techniques, black and white techniques, studio lighting techniques, digital techniques, making enlargements and presenting prints for display. Covers criticism, history and analysis. Students must have a 35mm single-lens reflex film or digital camera. Offered fall, spring. Prereq: ART 406 or permission of instructor.

ART 410: 3 s.h.**Interm Photography:Digital**

Digital course with a focus on fine art, including operation of camera, using Adobe Photoshop software, editing images, outputting images, making prints and matting prints for display. Covers criticism, history and analysis. Students should have a digital single-lens reflex camera. Loan cameras are also available. Offered spring. Prereq: ART 142, 306.

ART 431: 4 s.h.**Politics of Gndr in Contmp Art**

Politics of Gndr in Contmp Art Offered at Franklin and Marshall

ART 433: 3 s.h.**Drawing 4**

Advanced drawing in which individual style and technique are emphasized. An intensive course of independent research including creation of a portfolio. Prereq: ART 333. Offered periodically.

ART 445: 3 s.h.**Advanced Computer Art**

Offered in fall and/or spring. Prereq: ART 345.

ART 452: 3 s.h.**Painting 3**

Further study in painting as the individual student works toward developing a personal idiom of expression. Offered in fall and spring. Prereq: ART 354 or permission of instructor.

ART 454: 3 s.h.**Painting 4**

An advanced course in which students continue to develop style and technique as they seek their own direction in painting. Offered in fall and spring. Prereq: ART 452 or permission of instructor.

ART 463: 3 s.h.**Lithography Printmaking 2**

Explores multiple approaches to creating color lithography prints. A continuation of Lithography Printmaking I, this course technically builds with each new process into an advanced understanding and working knowledge of the process. Uses stone lithography, plate lithography, and waterless lithography to explore printed color and individual investigations into artmaking. Offered periodically. Prereq: ART 363.

ART 464: 3 s.h.**Relief Printmaking 2**

Builds on the information presented in Relief Print-making I. Starts at an intermediate level technically and builds with each process into an advanced understanding and working knowledge of the process. Covers linocut, woodcut, alternative relief matrices, color reduction, large format, mixed media, relief monoprinting, and multiple block relief printing. Students will be expected to develop a cohesive body of works from the projects and a personal investigation into artmaking. Offered periodically. Prereq: ART 364.

ART 465: 3 s.h.**Intaglio Printmaking 2**

Explores multiple approaches to creating intaglio prints. Builds on the techniques in Intaglio Printmaking I and builds into an advanced understanding and working knowledge of the process. Covers sugar lift, white ground, toner transfers, spitbite, versacel, collograph solar plates, chine colle, ala poupee inking, monoprinting, and multiple plate color printing. Offered periodically. Prereq: ART 365.

ART 467: 3 s.h.**Water Based Silkscreen 2**

Explores multiple approaches to creating water-based silkscreen prints. Starts technically with the information presented in Water-based Silkscreen I and builds into an advanced understanding and working knowledge of the process. Covers variations on previous stencil preparations and printing including large format, mixed media, and monoprinting. A strong focus will be on the application of the process to develop a body of work based on a personal investigation into artmaking. Offered periodically. Prereq: ART 367.

ART 468: 3 s.h.**Mixed Media Printmaking**

Explores the strengths of multiple printmaking techniques to create editions of color prints. Utilizes information previously covered in any of the 300-level printmaking courses. Starts at an intermediate technical level and builds into an advanced understanding and working knowledge of the printmaking process. Covers monoprinting, chine colle, collage, relief samples, electrostatic printmaking, solar plate etching, waterless lithography, hand coloring, and color printing. Offered periodically. Prereq: 300-level printmaking course.

ART 469: 3 s.h.**Contemp Issues in Printmaking**

Explores current trends, conceptual applications and contemporary formats surrounding printmaking. Utilizes information previously covered in any of the 300-level printmaking courses as the base for additional techniques and to build a working knowledge of printmaking. Starts at an intermediate technical level and builds into an advanced understanding and working knowledge of the processes. Covers artist's books, mail art, nontraditional surfaces, computer applications for traditional prints, mixed media prints, and discusses commercial processes and their application in fine art. Offered infrequently. Prereq: 300-level printmaking course.

ART 476: 3 s.h.**Picturing the Body (G1)**

Explore the role photography plays in constructing and representing the human form, with an emphasis on visual thinking, self-expression and creating a body of work. Includes studio-lighting techniques, working with Adobe Photoshop software, making prints, image sequencing, criticism, and presenting images for display. Topics include: beauty, self portraiture, street photography, studio portraiture, environmental portraiture, body image, and the nude. Intermediate level. Offered periodically.

ART 477: 3 s.h.**Photography as Narrative (G1)**

Explore the way photographs have been used to construct narratives that shape our understanding of ourselves and the world around us, with an emphasis on visual thinking, self-expression and creating a body of work. Includes image editing, image sequencing, criticism, studio-lighting techniques, working with Adobe Photoshop software, making prints, and presenting images for display. Topics include: selecting a subject, the photo essay, staged photography, incorporating text, and the single image narrative. Intermediate level. Offered periodically.

ART 478: 3 s.h.**Documentary Photography (G1)**

Explores documentary photography with an emphasis on people and place, visual storytelling, self-expression, and developing a long-term documentary project. Includes studio-lighting techniques, working with photo-editing software, image sequencing, criticism, and presenting images for display. Topics include: Portraiture, Street Photography, Community Building, and the Photo Series. Offered periodically.

ART 479: 3 s.h.**Experimental**

Experimental

ART 482: 3 s.h.**Sculpture 3**

Covers further study in sculpture. Students work toward developing a personal idiom of expression. Offered fall, spring. Prereq: ART 382.

ART 483: 3 s.h.**Sculpture 4**

Advanced study in sculpture. Student continues to develop style and technique while discovering personal artistic direction. Offered in fall and spring. Prereq: ART 482.

ART 486: 3 s.h.**Sp Topics:**

Repeatable to 6 credits if topics vary. Prereq: ART 242, junior or senior standing.

ART 488: 3 s.h.**Topics in Art History (G1, W)**

Offered periodically. This course examines special topics in art history. Prereq: ART 202 or 203 and ENGL 110.

ART 489: 1-4 s.h.**Honors Course**

Honors Course

ART 490: 3 s.h.**Beyond Making Art for Success (W)**

This course explores strategies for success in the fine art world beyond the college classroom and prepares students to tackle the business aspects of a fine art career. Students will build their formal portfolio, conduct an exhibition of their work, and learn standard arts business practices such as exhibiting work, networking, advertising, branding, marketing, and self-promotion. Entrepreneurial practice is utilized while students learn to write professional materials while building an online presence.

ART 491: 3 s.h.**Fine Art Metals: Form Emphasis**

Further study of jewelry and metals as an art form in which the student is encouraged to develop an original aesthetic style while exploring and employing advanced technical processes. Covers forming non-ferrous metals using techniques such as anticlastic and sinclastic forming, raising, fold forming, chasing and repousse and tool making. Projects will focus on creating volume using these various techniques. Problem solving and critical analysis are emphasized in this course along with professional practices and portfolio development. Offered in fall. Prereq: ART 391.

ART 492: 3 s.h.**Advanced Fine Art Metal/Jewelry**

Advanced study in jewelry and metals in which the student continues to develop style and techniques while discovering personal artistic direction. Covers techniques including surface embellishment, filigree, stonemaking, and mechanisms to be used as tools for aesthetic expression. Expands student awareness of historical and contemporary jewelry/metal work while incorporating concept with craft. Problem solving and critical analysis are emphasized in this course, along with professional practices and portfolio development. Offered in spring. Prereq: ART 391.

ART 494: 3 s.h.**Studio Capstone:**

A capstone studio seminar that focuses on a rotating theme. Studio assignments are used to encourage creative problem solving and intellectual risk taking to create a range of solutions using different artistic media. Students will be presented with challenging ideas, historical precedents, theory and contemporary artistic approaches related to the selected theme.

ART 497: 3 s.h.**Ceramics 4**

Advanced study in ceramics in which students continue to develop ideas, techniques and style as they pursue their own artistic direction. Prereq: ART 396.

ART 497H: 3 s.h.**H: Ceramics 4****ART 498: 1-3 s.h.****Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

ART 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

ART 500: 3-12 s.h.**Co-Op Ed Experience in Art**

Co-Op Ed Experience in Art

ART 522: 3 s.h.**Art Education Methods I**

Designed for post-baccalaureate certification students. An overview of art education, with particular emphasis on historical and contemporary rationales for teaching art, the observation of art instruction, and alternative career options through a variety of field experiences.

ART 523: 3 s.h.**Art Curriculum Seminar/Wkshp**

Survey of theories, problems and methods in developing curriculum in art education. Offered every other year.

ART 524: 3 s.h.**Art Education Methods II**

Designed for post-baccalaureate certification students. Build on the rationales for art education addressed in Art Education Methods I with an investigation into designing meaningful art education experiences for PreK-12 students. Design art education experiences and consider how policies at the state and local levels influence how teachers enact curriculum in their classrooms.

ART 525: 3 s.h.**Art Education Methods III**

Designed for post-baccalaureate certification students. An examination of classroom strategies, materials and technologies used in teaching art to develop creative and critical thinking in all students. An emphasis on self-reflection and professionalism through team teaching and service learning in an intensive field experience.

ART 526: 3 s.h.**Trends Art Ed:**

Seminar course designed to address current trends, theories, concepts and strategies in art education. Offered every other year.

ART 533: 3 s.h.**Drawing**

Independent investigation of advanced drawing techniques. Prereq: 9 s.h. of drawing.

ART 534: 3 s.h.**Drawing**

Independent investigation of advanced drawing techniques. Prereq: 9 s.h. of drawing.

ART 552: 3 s.h.**Painting**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 553: 3 s.h.**Watercolor**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 554: 3 s.h.**Painting**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 555: 3 s.h.**Water Color and Related Media**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 563: 3 s.h.**Printmaking**

Exploration of experimental printmaking techniques, development of individual style and critique skills. 9 s.h. of printmaking.

ART 564: 3 s.h.**Printmaking**

Exploration of experimental printmaking techniques, development of individual style and critique skills. 9 s.h. of printmaking.

ART 566: 3 s.h.**Collage**

This course offers an advanced historical look at the last 100 years of collage as a media for fine art. Highlights of collage history will be discussed and followed by a progressive hands-on application of the ideas and methods.

ART 567: 3 s.h.**Advanced Photography 2**

Advanced photography course with an emphasis on fine art, self-expression and creating a professional portfolio of work, including color techniques, black and white techniques, studio lighting techniques, digital techniques, making enlargements and presenting prints for display. Covers criticism, history and analysis. Students must have a 35mm single-lens reflex film or digital camera. Offered fall, spring. Permission of instructor.

ART 579: 3 s.h.**Experimental**

Experimental

ART 581: 3 s.h.**Sp Topics in Art Education**

Graduate Art Education Special Topics Course that focuses on one or more topics of current interest not addressed in current curriculum. Topics will vary according to the needs of students and the faculty involved.

ART 582: 3 s.h.**Sculpture**

Exploration of experimental techniques in sculpture, development of individual style, and critique skills.

ART 583: 3 s.h.**Sculpture**

Exploration of experimental techniques in sculpture, development of individual style, and critique skills.

ART 584: 3 s.h.**Intro Studio Art:**

Fine Art intro level studio topics course designed for the Post Baccalaureate or Graduate Student. Topics will vary each semester.

ART 585: 3 s.h.**Intro Studio Art:**

Fine Art intro level studio topics course designed for the Post Baccalaureate or Graduate Student. Topics will vary each semester.

ART 586: 3-6 s.h.**Topics In Art Education**

Independent investigation of topic(s) in art education. Prereq: Graduate standing or permission of the instructor.

ART 587: 3-6 s.h.**Topics In Art Education**

Independent investigation of topic(s) in art education. Prereq: Graduate standing or permission of the instructor.

ART 588: 3-6 s.h.**Art Hist Top:**

Independent investigation of topic(s) in art history. Prereq: Graduate standing or permission of the instructor.

ART 589: 3-6 s.h.**Topics In Art History**

Independent investigation of topic(s) in art history. Prereq: Graduate standing or permission of the instructor.

ART 591: 3 s.h.**Fine Art Metals**

Independent investigation of metalsmith development of individual style, and critique skill. Prereq: 9 s.h. of metalsmithing.

ART 592: 3 s.h.**Fine Art Metals**

Independent investigation of metalsmith development of individual style, and critique skill. Prereq: 9 s.h. of metalsmithing.

ART 596: 3 s.h.**Ceramics**

Independent investigation of ceramics, development of individual style, and critique skills. Prereq: 9 s.h. of ceramics.

ART 596H: 3 s.h.**Hon: Ceramics****ART 597: 3 s.h.****Ceramics**

Independent investigation of ceramics, development of individual style, and critique skills. Prereq: 9 s.h. of ceramics.

ART 602: 3 s.h.**Qualtve & Arts-Based Rsrch Mth**

For graduate students from across the university community whose research questions may best be answered through qualitative research and/or arts-based research methods. This course provides students an opportunity to investigate and consider the applications of a number of qualitative and arts-based research methods to their emerging ideas and designs for conducting research in their respective fields. The emphasis will be on identifying and evaluating prospective research problems and questions, examination of related research literature, and development of a research project proposal. This course is an intermediate level methods class with a prerequisite of EDFN 601 or enrollment in the Expressive Arts certificate program.

ART 603: 3 s.h.**Assessment in Art Education**

Examine various theories and methods of assessment of why, what, and how to assess art. Students will work together to identify assessment dilemmas present in their classrooms and using texts, each other, and their own experiences, work together to create potential solutions. The aims of this course are to help students build relevant and immediately applicable tools to use in K-12 classrooms and to build a learning community for art educators in which they can explore assessment issues particularly relevant for their subject matter.

ART 633: 3 s.h.**Drawing**

Independent investigation of advanced drawing techniques. Prereq: 9 s.h. of drawing.

ART 634: 3 s.h.**Drawing**

Independent investigation of advanced drawing techniques. Prereq: 9 s.h. of drawing.

ART 635: 3 s.h.**Drawing**

Independent investigation of advanced drawing techniques. Prereq: 9 s.h. of drawing.

ART 641: 3 s.h.**Design**

Independent investigation of design. Prereq: 9 s.h. of design.

ART 642: 3 s.h.**Design**

Independent investigation of design. Prereq: 9 s.h. of design.

ART 643: 3 s.h.**Design**

Independent investigation of design. Prereq: 9 s.h. of design.

ART 652: 3 s.h.**Painting**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 654: 3 s.h.**Painting**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 656: 3 s.h.**Painting**

Exploration of experimental painting techniques, development of individual style, and critique skills. 9 s.h. of painting.

ART 663: 3 s.h.**Printmaking**

Exploration of experimental printmaking techniques, development of individual style and critique skills. 9 s.h. of printmaking.

ART 664: 3 s.h.**Printmaking**

Exploration of experimental printmaking techniques, development of individual style and critique skills. 9 s.h. of printmaking.

ART 665: 3 s.h.**Printmaking**

Exploration of experimental printmaking techniques, development of individual style and critique skills. 9 s.h. of printmaking.

ART 666: 3 s.h.**Fine Art Photography**

Exploration of experimental fine art photography techniques, development of individual style and critique skills. Prereq: 9 s.h. of photography

ART 667: 3 s.h.**Fine Art Photography**

Fine Art Photography

ART 668: 3 s.h.**Fine Art Photography**

Exploration of experimental fine art photography techniques, development of individual style and critique skills. Prereq: 9 s.h. of photography

ART 678: 3-6 s.h.**Documented Study**

In-depth investigation of an issue in art education under the direction of appropriate faculty.

ART 682: 3 s.h.**Sculpture**

Exploration of experimental techniques in sculpture, development of individual style, and critique skills.

ART 683: 3 s.h.**Sculpture**

Exploration of experimental techniques in sculpture, development of individual style, and critique skills.

ART 684: 3 s.h.**Sculpture**

Exploration of experimental techniques in sculpture, development of individual style, and critique skills.

ART 686: 3-6 s.h.**Topics in Studio Art**

Independent investigation of topic(s) in an art studio.

ART 687: 3-6 s.h.**Topics in Studio Art**

Independent investigation of topic(s) in an art studio.

ART 688: 3 s.h.**Topics in Art Hist**

Independent investigation of topic(s) in art history. Prereq: Graduate standing or permission of the instructor.

ART 691: 3 s.h.**Fine Art Metals**

Independent investigation of metalsmith development of individual style, and critique skill. Prereq: 9 s.h. of metalsmithing.

ART 692: 3 s.h.**Fine Art Metals**

Independent investigation of metalsmith development of individual style, and critique skill. Prereq: 9 s.h. of metalsmithing.

ART 693: 3 s.h.**Fine Art Metals**

Independent investigation of metalsmith development of individual style, and critique skill. Prereq: 9 s.h. of metalsmithing.

ART 695: 3 s.h.**Ceramics**

Independent investigation of ceramics, development of individual style, and critique skills. Prereq: 9 s.h. of ceramics.

ART 696: 3 s.h.**Ceramics**

Independent investigation of ceramics, development of individual style, and critique skills. Prereq: 9 s.h. of ceramics.

ART 697: 3 s.h.**Ceramics**

Independent investigation of ceramics, development of individual style, and critique skills. Prereq: 9 s.h. of ceramics.

ART 699: 3,6 s.h.**Thesis**

In-depth investigation of a topic relevant to art education within a recognized research format under the direction of appropriate faculty.

ART 799: 3,6 s.h.**Applied Supv: Art Education**

Field-based experience to develop candidate's leadership abilities, articulation of philosophy of art education, and supervisory competencies. Activities may include curriculum and staff development, budgeting and the public relations function, among others. Prereq: ART 524 and EDSU 700, 701 and 703. A student may petition the Department of Art for a waiver of the 9 s.h. prerequisite.

Assess, Curric, Teaching (ACTE)

ACTE 561: 4 s.h.**Student Teaching in the Secondary Classroom**

Taken in sequence with EDSE 572: Inquiry into Inclusive Classroom Instruction, ACTE 561 will provide a field-based experience for ACTE students who are seeking teacher certification. As part of the ACTE program, students will serve as the instructor of record in schools and University supervisors will provide formal observations in compliance with PDE regulations.

ACTE 625: 3 s.h.**Technology and Assessment for Learning**

Technology and Assessment for Learning is designed for the practicing teacher to fully realize the role of assessment as a foundation for student learning and growth. The incorporation of assessment practices and technology in the classroom is grounded in practical classroom applications. This course intends to provide in-service teachers with a set of assessment and technological strategies and tools that can be used to provide different paths for student achievement and enhance student learning.

ACTE 630: 3 s.h.**Current Technology for Online Instruction**

Students will develop skills in using current and emerging instructional technology to support online learning environments. Instructional design and assessment as well as national standards are used as a basis for planning and evaluating student-centered distance education. The methodologies and technologies used in the course are updated each semester according to current trends, practices, and research in the field of instructional technology.

ACTE 631: 3 s.h.**Social Foundations of Online Ed**

A consideration of K-12 distance education from a social foundations perspective including philosophy of education, study of the history and evolution of distance education, public policy implications, economic implications, and other current issues in distance education. Students will complete an online field experience in a K-12 online environment.

ACTE 632: 3 s.h.**Online Learning Environments**

Students will examine methods of engaging students in online learning environments and ways to effectively foster communication and interaction between students, content and instructor. Current research studies will be used to inform the creation of online learning environments that supports and assesses student learning. Students will complete an online field experience in a K-12 online environment.

ACTE 633: 3 s.h.**Learners in Online Classrooms**

Fosters teachers' understanding and ability to respond to various characteristics that impact students' learning within the online environment. Course content examines individual differences across learning, development, cognitive abilities, reading proficiency and student readiness for online learning, while acknowledging the influences of prior educational experiences, home environment, and necessary special education accommodations. Emphasis is placed on adapting instruction by working with students and their families, other community stakeholders, and additional professionals who support student learning and achievement.

ACTE 634: 3 s.h.**Legal and Ethical Issues in Online Education**

With the wealth of online learning tools and resources available, teachers need an understanding of the legal issues that impact their use with learners in the k-12 setting. This course addresses current legislation pertaining to the use of copyrighted digital media in the classroom, best practice in the use of online tools and applications with children over and under 13 years of age, and current controversies and legal challenges related to children's online behaviors. While the content of the course is updated every semester the course goal remains the same: to investigate the legal issues pertaining to the use of digital media and online tools in the classroom by teachers and students.

ACTE 635: 3,6 s.h.**Instructional and Curricular Design for Online, Blended and Customized Instruction**

This course is designed as an integrative, project-based experience for students. The course applies instructional design methodology to the development of online, blended and customized courses that are engaging, effective and in alignment with standards and best practices as identified by learning research. Participants will enact a unit of instruction as either the lead teacher or as an intern co-teaching role. Participants are guided through the process of conducting needs assessments; defining course goals and objectives; and designing instructional lesson plans, activities and materials, and assessments. Consideration is given to various models of online delivery, content organization and presentation, and design principles.

ACTE 640: 3 s.h.**Universal Design for Learning: Curricular Access for All Students**

The challenge and opportunity of individual differences confront every teacher, administrator, and curriculum designer. To meet that challenge and to capitalize on that opportunity, educators are typically equipped with media and materials that are "one size fits all" and that have been designed primarily for a narrow and illusive group of learners. In this course, we will explore an alternative approach—universal design for learning (UDL)—that creates curricula, informs instructional methods, and upholds learning environments that are designed to achieve success for a much wider range of student abilities and disabilities. To do that, the UDL approach takes advantage of advances in two fields: (1) the cognitive neuroscience of learning and individual differences and (2) the universal design of educational technologies and multimedia. This course will explore recent advances in both of these fields as they relate to content area instruction through appropriate readings and through media construction exercises designed to prepare and support participants to optimize the challenge of individual differences through universal design for learning.

ACTE 641: 3 s.h.**Foundations of Multicultural Ed**

This course lays the foundational framework about knowledge of multicultural education. It offers an in-depth examination of the history and evolution of multicultural education. Definitions of multicultural education are presented as these were shaped by events in history. Topics will include the theoretical and pedagogical content knowledge of multicultural education and their connections to learning about diversity in secondary classrooms. Models and dimensions of diversity will be analyzed as these relate to stages of identity development within a global context.

ACTE 642: 3 s.h.**Teaching About Diversity**

This course builds on the topic of diversity by examining multicultural issues in contemporary society and how they impact the educational system, equity, inclusion, and cultural tolerance. It will help candidates understand the positive attributes of pluralism and how this knowledge can be used effectively in the classroom and within schools to educate all children.

ACTE 643: 3 s.h.**Disciplinary Thinking**

Effective teaching requires more than disciplinary content knowledge and an understanding of ways of knowing in the discipline. It also requires understanding of pedagogical content-specific knowledge that is uniquely helpful in the work of teaching. Studies of teaching have elaborated on pedagogical content knowledge to apply knowledge to specific content-related inquiry as well as the broad and flexible knowledge of how students think about content upon which to base instructional decisions that arise in unanticipated ways. This suggests that the disciplines are more than just accumulated bodies of knowledge or epistemic frameworks, but rather unique sets of ideas about what it might mean to generate knowledge, often referred to as the syntactic structure of the discipline. This course will engage students in the inquiry necessary to access the syntactic structure of their discipline and demonstrate their new knowledge in multiple modalities.

ACTE 650: 3 s.h.**Science Teaching and Learning**

Teaching and learning are inseparable, in that learning is the goal of teaching. Someone has not taught unless someone else has learned. Science teaching requires attention to both the content of the course and the process of moving students from their initial state of knowledge and understanding to a more informed way of knowing. Students in this course will critically examine the latest research about science teachers and learners and use this information to assess their current instructional practices. The emphasis of the course will be on gaining the skills necessary to improve inquiry teaching in science classrooms.

ACTE 651: 3 s.h.**Science Curriculum and Reform**

The purpose of the course is to develop a better understanding of school science curriculum. This course examines literature that provides the foundation for modern reform in science education. With the past in the background and current issues in the forefront, the course analyzes the implications of reform initiatives for classroom practice with a focus on student learning. In class discussions we examine how different assumptions and perceived goals of science education influence what is taught, how it is taught, and how it is assessed and interpreted.

ACTE 655: 3 s.h.**Integrative STEM Education**

Integrative STEM (iSTEM) education is a standards-based metadiscipline integrating Science, Technology, Engineering, and Math. This course examines the goals and outcomes of integrative STEM teaching and learning. iSTEM instruction is grounded in inquiry methodologies by using project-based learning strategies, technological tools, equipment, and procedures in innovative ways. The goal of iSTEM instruction is to prepare students to address societal needs and challenges in order to compete in the global workforce by improving college-readiness skills, and increasing the number of students who may consider a career in a STEM-related field.

ACTE 660: 3 s.h.**Teach & Learn Secondary Ed**

This course introduces candidates to a variety of evidence-based pedagogies appropriate for secondary classroom environments. Candidates will critically examine the syntax of instructional models that can be applied across a variety of content areas for the 7-12 classroom. Candidates will demonstrate their understanding of various teaching models and assessment strategies through the development of lesson plans and units in their content area. In addition, candidates will become engaged in critical analysis and evaluation of these instructional plans in order to develop a self-reflective approach to praxis.

ACTE 699: 6 s.h.**Inquiry for Teaching/Learning**

Design, execution and communication of applied research in emerging fields of online teaching or STEM education. Two types of applied research may be pursued: (1) basic research using experimental, descriptive or other traditional research methodologies, (2) documented study of innovative curricular development. In either approach, candidates must demonstrate use of emerging technologies, effective instructional design and use of assessment data for improving curricular design. Permission of instructor required to register.

ACTE 700: 1 s.h.**Seminar 1**

Seminar 1

ACTE 701: 1 s.h.**Seminar 2**

Seminar 2

ACTE 702: 1 s.h.**Seminar 3**

Seminar 3

Biology (BIOL)

BIOL 100: 3 s.h.**General Biology (G2)**

An introduction to biology with emphasis on cell structure, metabolism, genetics, behavior, ecology, adaptations, organ systems and evolution. 2 hours lec., 2 hours lab. No credit toward BIOL major.

BIOL 101: 4 s.h.**Foundations of Biology (G2)**

This introduction of biological principles provides the foundation of modern biological knowledge essential for all higher-level courses. Topics include cell structure and function, cellular reproduction, energy acquisition, biochemical pathways, mechanisms of inheritance, natural selection, speciation and evolution. 2 hrs. lec., 1 hr. discussion, 3 hrs. lab. Offered in fall, spring. Prereq: Biology major or biology minor or permission of instructor.

BIOL 108H: 1 s.h.**Hnrs:Freshman Biology Seminar**

Emphasis on the intellectual and historical context of the core ideas of BIOL 100 and an in-depth exploration of ideas raised in lecture and laboratory. Satisfies the honors lab when taken with Biology 100. 1 hr. seminar. Offered in fall, spring. Prereq or coreq: BIOL 100 or 101.

BIOL 140: 3 s.h.**Introductory Ecology (G2)**

Introductory course in ecology (interactions of living organisms with the environment), evolution (adaptations of living organisms to the environment) and the environment of life on planet Earth. Important applied ecological topics such as agriculture and forestry, exploitation of populations, effects of disturbance and climate change, and conservation of biological diversity also are examined. The course covers significant content of the Academic Standards for Environment and Ecology and the Middle-Level Science Competencies as required by the Pa. Dept. of Education. 2 hrs. lec., 2 hrs. lab. No credit toward BIOL major. Prereq: ENGL 110, COMM 100 and completion of one course of MATH (101 or higher) or MPT of 160. In addition, BIOL 100 or 101 is recommended but not required. Offered during spring semester.

BIOL 179: 3 s.h.**Experimental**

Experimental

BIOL 204: 3 s.h.**Human Biology (G2, W)**

A non-laboratory course in human biology designed specifically for those students planning to specialize in social work, psychology or related fields. An overview of the changes that take place in the course of a human lifetime; basics of human evolution, ecology, behavior, anatomy and physiology of the human organism are discussed. 3 hrs. lec. Offered fall, spring. Prereq: BIOL 100 or BIOL 101, or permission of instructor, and ENGL 110. No credit toward BIOL major.

BIOL 205: 3 s.h.**Heredity and Human Affairs (G2)**

Genetics for non-majors with reference to human heredity and development. The social implications of recent advances in genetics are considered. 3 hrs. lec. Offered periodically. Prereq: BIOL 100 or BIOL 101, or permission of instructor or RN, and MATH 1**. No credit toward BIOL major.

BIOL 207: 3 s.h.**Human Sexuality (D, G2, W)**

Study of the nature of human sexuality, particularly as it relates to biological phenomena. Discussions and films will cover the biology of human reproduction, biology of human sexual behavior and its implications. 3 hrs. lec. Offered periodically. Prereq: BIOL 100 or BIOL 101, or permission of instructor or RN, and ENGL 110. No credit toward BIOL major.

BIOL 208: 3 s.h.**Plants and People (G2)**

Explores uses of plants and plant products by man and their impact on the development of civilization. Characteristics of plants that make them suitable for food, shelter, clothing, energy, medicines, entertainment, objects of worship, microclimate modification and aesthetic objects are discussed. 3 hrs. lec. Offered periodically. Prereq: BIOL 100 or BIOL 101, or permission of instructor. No credit toward BIOL major.

BIOL 211: 4 s.h.**Concepts of Zoology (G2)**

Study of invertebrate and vertebrate animals. Classification, reproduction, development, ecology, physiology, behavior, genetics, scientific methodology (including simple statistical approaches), and evolution. Laboratory studies include microscopy, dissections, live observations, computer exercises and experimentation. 3 hrs. lec., 3 hrs. lab. Prereq: BIOL 101 or BIOL 100 with a grade of C- or higher for non-majors; B- or higher in BIOL 100 for biology majors.

BIOL 212H: 1 s.h.**Hnrs:Zoology Seminar**

Continuation of BIOL 211. Original investigations and/or readings and discussions of the zoological literature about the diverse adaptations of animals to their environments. Completion of both BIOL/HNRS 212 and BIOL 211 earns 5 credits to be counted as one course in the G2 block. BIOL/HNRS 212 may not be used independently to fulfill a G2 requirement. 1 hr. seminar. Offered periodically. Prereq: completion of BIOL 211 with a grade of B- or higher and member of University Honors College, or 3.35 GPA, or instructor's permission.

BIOL 221: 4 s.h.**Concepts of Botany (G2)**

Consideration of features unique to plants such as localized meristems and open growth, water relations, photosynthesis, cell structure. An integrated study of plant structure and function using angiosperms as principal examples. Includes brief discussions of plant and fungal diversity, plant ecology and evolution and economic botany. 3 hrs. lec., 3 hrs. lab. Prereq: BIOL 101 or BIOL 100 with a grade of C- or higher; B- or higher in BIOL 100 for biology majors.

BIOL 222H: 1 s.h.**Hnrs:Problem Solving In Botany**

A botanical science investigation of a problem or series of problems. Students define a problem with a botanical basis, search appropriate literature, formulate hypotheses and collect appropriate information to test hypotheses through experimentation and data gathering. Completion of both BIOL/ HNRS 222 and BIOL 221 earns 5 credits to be counted as one course in the G2 block. BIOL/HNRS 222 may not be used independently to fulfill a G2 requirement. 1 hr. seminar. Offered periodically. Prereq: completion of BIOL 221 with a grade of B- or higher and member University Honors College, or 3.35 GPA, or instructor's permission.

BIOL 241: 3 s.h.**Principles of Ecology**

Ecological principles underlying physiological adaptations of organisms to their environment, population dynamics, community analysis and ecosystem studies. Ecological and evolutionary theory emphasized with examples from aquatic and terrestrial habitats. 3 hrs. lec. Offered in fall, spring. Prereq: BIOL 100 or BIOL 101 and MATH 235, 151, 160 or 161. No credit toward BIOL major.

BIOL 254: 4 s.h.**Human Anatomy & Physiology I**

Study of the structure and function of the human body. This first semester of a two-semester sequence deals with the development, histology, gross anatomy, function and pathophysiology of the cutaneous, skeletal, muscular and nervous systems. 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: BIOL 100 or BIOL 101.

BIOL 254H: 4 s.h.**Hon: Human Anat & Phys 1****BIOL 255: 4 s.h.****Human Anatomy & Physiology II**

Study of the structure and function of the human body. This second semester of a two-semester sequence deals with the development, histology, gross anatomy, function and pathophysiology of the endocrine, circulatory, respiratory, digestive, urinary, and reproductive systems. 3 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 254.

BIOL 255H: 4 s.h.**Hon: Human Anat/Phys 2****BIOL 256: 3 s.h.****Nutrition (G2, W)**

Principles of adequate nutrition including digestion and metabolism of foods; energy, protein, mineral and vitamin needs; environmental and industrial contaminants, additives and carcinogens; dietary treatment for nutritional disorders. 3 hrs. lec. Offered in fall, spring. Prereq: BIOL 100 and ENGL 110. No credit toward BIOL major or minor. No credit given if credit earned for BIOL 352.

BIOL 257: 1 s.h.**Introduction to Allied Health Professions**

A survey of the various disciplines in the allied health field. The course describes the type of training offered by hospitals for students who are planning to major in a health profession and for students who are undecided on a career. 1 hr. lec. Offered in fall.

BIOL 266H: 1 s.h.**Hnrs:Adv Princ Cell Biology**

Cellular operations and processes: hormonal control of cell physiology, secretory activities and vesicular trafficking, control of cell division, neu-rotransmission, control of muscle contraction, signal transduction, interrupted genes, cell recognition, etc. Students explore and lead discussions on one of these topics. Completion of both BIOL/HNRS 266 and BIOL 263 earns 5 credits to be counted as one course in the G2 block. BIOL/ HNRS 266 may not be used independently to fulfill a G2 requirement. 1 hr. seminar. Offered periodically. Prereq: completion of BIOL 362 or BIOL 263 with a grade of B- or higher and member of University Honors College, or 3.35 GPA, or instructor's permission.

BIOL 281: 3 s.h.**Behavioral Biology (G2, W)**

Provides an evolutionary and ethological frame of reference for further studies in psychology and animal behavior. Lectures supplemented by demonstrations and A-V media cover animal diversity, nervous systems, sensory reception, communication and behavior. 3 hrs. lec. Offered in fall or spring. Prereq: BIOL 100 or BIOL 101, and ENGL 110. No credit toward BIOL major.

BIOL 290: 3 s.h.**Coastal Marine Biology**

Introduction to marine organisms, marine communities, and the physical, chemical, and biological parameters that shape them; laboratory and field work will emphasize local coastal marine ecosystems. 2 hrs. lec., 3 hrs. lab. Offered in summer at the Chincoteague Bay Field Station. Prereq: BIOL 211 or 1 year of college biology or permission of instructor. No credit given if credit earned for BIOL 291.

BIOL 291: 4 s.h.**Marine Biology (G2)**

Phylogeny, morphology and ecology of marine organisms. Similarities and differences in solutions to problems of life in the marine environment are stressed. 2 hrs. lec., 3 hrs. lab. Weekend field trips. Offered in fall. Prereq: C- or higher in BIOL 211.

BIOL 292: 1 s.h.**Problem Solving in Marine Biol**

An introduction to foundational topics within marine biology, including (1) quantitative reasoning for aquatic biologists, (2) marine geography and mapping, (3) life in a fluid environment, (4) microcosms: marine aquarium systems, (5) scientific illustration, (6) electronic resources in marine biology, (7) internships, coops, jobs, and careers in marine biology, and (8) current topics. Offered in summer. Prereq: placement in college-level mathematics or permission of instructor. No credit given if credit earned for BIOL 291.

BIOL 293: 3 s.h.**Coastal Ornithology**

Students will achieve a strong understanding of a variety of aspects in ornithology with the strongest focus on field techniques, including identification. Material covered will include evolution, anatomy, physiology, behavior and ecology. A portion of the course will include an overview of the avian families of North America, especially those found in coastal regions along the mid-Atlantic seaboard. The field component for this course will include mist netting, census techniques and field identification. Emphasis will be placed on field research and a portion of the course will involve the development of a novel research idea in ornithology.

BIOL 294: 3 s.h.**Coral Reef Ecology**

The focus of this course is to introduce students to the unique aspects of coral reefs, and to provide a working knowledge of reef species and reef ecology. Students will learn basic taxonomy, biology, ecology, and conservation of coral reefs and the organisms associated with this habitat. Laboratory will consist of hands-on field experiences in a coral reef habitat. Students will learn techniques for study and assessment of marine habitats and complete an independent project.

BIOL 295: 3 s.h.**Marine Invertebrates**

The invertebrate phyla with emphasis on development, reproduction, structure, function and classification of selected marine organisms. Laboratory and field experience in collection, preservation and classification of the phyla.

BIOL 296: 3 s.h.**Marine Ecology**

Interrelationships among animals, plants and physical and chemical aspects of the environment will be studied, with stress on adaptations for survival that are unique to the marine environment.

BIOL 300: 3-12 s.h.**Co-Op Ed Experience in Biol**

Co-Op Ed Experience in Biol

BIOL 318: 4 s.h.**Comparative Vertebrate Anatomy**

Functional and comparative anatomy of selected vertebrates with developmental and evolutionary perspectives. Lab will primarily consist of dissection and histological analyses of animals representing various vertebrate classes. Comparisons between animals at the same level, and to see diverse features superimposed upon a common pattern. 3 hrs. lec., 3 hrs. lab. Offered in spring, 2 of 3 years. Prereq: BIOL 211 and BIOL 362 or 263, or permission of instructor.

BIOL 324: 4 s.h.**Plant Biochemistry**

A study of enzymes and pathways involved in plant intermediary as related to plant cell structure, function and plant development. Topics include plant bioenergetics, biosynthesis of plant hormones and elicitor molecules, signal perception and transduction, and secondary metabolites (natural products). 3 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 221 and BIOL 362 or BIOL 263, CHEM 232 or CHEM 235.

BIOL 325: 3 s.h.**Plant Systematics**

A survey of local vascular flora, use of dichotomous keys in identifying plants, distinguishing features of common plant families, principles of plant systematics. Phylogenetic, biosystematic and nomenclatural concepts are considered. 2 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: C- or higher in BIOL 221.

BIOL 327: 3 s.h.**Horticultural Science**

Principles of horticultural science including regulation of plant growth, propagation and breeding, plant nutrition, pruning, plant diseases and special topics related to individual types of plants. Laboratory includes propagation and handling of plants in the greenhouse and field trips. 2 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 221 or permission of instructor.

BIOL 327H: 3 s.h.**Hon: Horticultural Science****BIOL 329: 3 s.h.****Plant-Insect Interactions**

The chemical and biological interactions between plants and insects will be extensively examined with particular emphasis on the chemical ecology of important behaviors such as herbivory, oviposition, and pollination. The chemical communications between plants and insects will be examined regarding how plant-produced chemicals influence, both directly and indirectly, the behaviors of insects. Chemical, anatomical, behavioral, environmental and evolutionary concepts linked to plant-insect interactions will be examined. Unique laboratory experiences will include the design and implementation of an independent research project and the rearing of Lepidoptera to establish research colonies. 2 hrs. lec., 3 hrs. lab. Prereq: BIOL 221, BIOL 211, and either CHEM 231 or CHEM 235 or permission of the instructor.

BIOL 340: 3 s.h.**Prspctv in Environm Awareness (P)**

Interdisciplinary study of current environmental problems and their implications on future habitability of the planet. Physical, biological and social aspects of alterations to ecosystems presented and solutions considered. Course includes lectures, open forums and student participation. Offered in fall and spring. Prereq: COMM 100, ENGL 110, junior status and at least one science (G2 block) and one social science course (G3 block).

BIOL 340H: 3 s.h.**HNRS:Persp in Environ Awareness (P)****BIOL 343: 4 s.h.****Principles of Ecology & Evolution**

The basic concepts and principles of evolution and ecology. Topics include natural selection, genetic variation, macro- and microevolution, population genetics, evolutionary stable strategies, species concepts, biodiversity, extinction, reproductive strategies, population dynamics, the ecological niche concept, predation, competition, mutualism, parasitism, coevolution, biogeography, disturbance ecology, and ecosystem structure and function. 3 hrs. lec., 3 hrs. lab. Offered in fall and spring. Prereq: BIOL 101 or 100 with a grade of C- or higher; B- or higher in BIOL 100 for biology majors; C- or higher in BIOL 211 and BIOL 221; MATH 151, 160 or math equivalent; ENGL 110.

BIOL 343H: 4 s.h.**Hon: Ecology and Evolution****BIOL 344: 3 s.h.****Population Community Ecology**

An intermediate course that will explore population biology, species interactions, trophic structure, community organization, succession, island biogeography and biological diversity at a more advanced level than BIOL 343. The laboratory portion of the course will focus on the use of quantitative methods and manipulative experimental designs to verify fundamental principles and test new hypotheses. 2 hrs. lec., 3 hrs. lab. Offered in fall or spring. Prereq: BIOL 343, MATH 151 or MATH 161, and BIOL 375.

BIOL 346: 3 s.h.**Ornithology (W)**

Ecology, behavior, taxonomy and evolution of birds with emphasis on field studies. 2 hrs. lec., 3 hrs. lab. Weekend field trips. Offered in spring. Prereq: C- or higher in BIOL 211.

BIOL 352: 3 s.h.**Nutritional Science (W)**

Biological and biochemical roles of nutrients for the proper functioning of the human body. Designed for students with a more advanced understanding of chemistry and math. Nutrition concepts will be used to design and evaluate personal diet plans. No credit given if credit earned for BIOL 256. (BIOL 256 does not count for biology majors or minors.) Offered in fall, spring. Prereq: C- or higher in BIOL 362 or BIOL 263, ENGL 110.

BIOL 352H: 3 s.h.**Hon: Nutritional Science (W)****BIOL 356: 5 s.h.****Functional Human Anatomy**

A systemic approach to the study of the structure of the human body with discussion of general function. Course designed primarily for those planning to enter medical or allied health professions. Clinical laboratory experiences related to human anatomy. 3 hrs. lec., 4 hrs. lab. Offered in spring. Prereq: C- or higher in BIOL 211 and BIOL 362 or BIOL 263.

BIOL 361: 4 s.h.**Microbiology**

The structure, physiology and ecology of microorganisms. Symbiotic associations between organisms will be examined in depth. Principles of microbial virulence and immunology are also discussed. Laboratory investigations include the isolation and identification of unknown microorganisms. 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: BIOL101 C- or better or BIOL 100 B- or better; CHEM 112 (Prereq or Coreq) or CHEM 104

BIOL 361H: 4 s.h.**Hon: Microbiology****BIOL 362: 4 s.h.****Cell and Developmental Biology (G2, W)**

Cell structure and function, including cell ultrastructure, methods used in cell biology research, cell motility, signal transduction, cell division, macromolecules, metabolism and the cytomembrane system. Basic concepts in developmental biology are also covered: fertilization, early embryonic cleavage in model systems, cell-cell communication, extracellular matrix and research methods. Examples from developmental biology are employed to illustrate the functions and roles of cellular structures and processes. Laboratory includes isolation of cell components, fertilization and cleavage in sea urchins, microscopy and other techniques used in the study of cell and developmental biology. 3 hrs. lec., 3 hrs. lab. Offered in fall and spring. Prereq: BIOL 101 or 100 with a grade of C- or higher; B- or higher in BIOL 100 for biology majors; ENGL 110; CHEM 112 (Prereq or Coreq).

BIOL 362H: 4 s.h.**HNRS:Cell and Devel Biology**

BIOL 363: 3 s.h.**Medical Microbiology**

An in-depth exploration into the nature of disease-causing microorganisms, with an emphasis on medically important bacteria, viruses and fungi. This course will provide a comprehensive analysis of the structure of microorganisms, epidemiology and pathogenesis of microbial diseases, control of microbes, host responses to infection, vaccination strategies and antimicrobial therapy. 3 hrs. lec. Offered periodically in fall or spring. Prereq: BIOL 362 or BIOL 263.

BIOL 363H: 3 s.h.**Hon: Medical Microbiology****BIOL 364: 4 s.h.****Foundations of Genetics & Molecular Biology**

Concepts and principles essential for a basic understanding of genetics and molecular biology are covered. Topics include Mendelian genetics, gene mapping, molecular structure of the gene, gene expression and regulation, chromatin structure, molecular methodologies, human genome project, population genetics and evolution. 3 hrs. lec., 3 hrs. lab. Offered in fall, spring. Prereq: BIOL 101 or 100 with a grade of C- or higher; B- or higher in BIOL 100 for biology majors; CHEM 112.

BIOL 375: 3 s.h.**Biometry**

Use of statistical techniques in descriptive and experimental biology and the use of mathematical models in describing biological phenomena. 3 hrs. lec. Offered in fall, spring. Prereq: BIOL 100 or BIOL 101, and MATH 151 or higher.

BIOL 375H: 3 s.h.**Hon: Biometry****BIOL 385: 3 s.h.****Principles of Animal Behavior**

Animal groups from protozoa to mammals, studied from an ethologist's point of view. Inheritance, learning, development and motivations will be covered. 2 hrs. lec., 3 hr. labs. Offered in spring. Prereq: BIOL 211 and Junior Standing. BIOL 343 recommended.

BIOL 385H: 3 s.h.**H: Princ of Animal Behavior****BIOL 392: 3 s.h.****Marine Mammals**

The distribution, population size, physiology, evolution, adaptations and ecological relationships of marine mammals will be studied with an emphasis on mammals of the Atlantic Ocean. This course will stress hands-on understanding of marine mammal physiology, behavior, population dynamics and species diversity. Laboratory and field work will include an extended off-campus field trip to facilities holding and/or studying marine mammals of the NE Atlantic Ocean. In addition, the laboratory portion of this course will emphasize data collection in the field, and subsequent analysis and presentation of the data through a required mini-research project.

BIOL 396: 3 s.h.**Ichthyology**

Morphology, anatomy, physiology, systematics and behavior of fishes. Laboratory and field experiences involve collection and study of specimens from nearby field sites. Zoogeography, life histories and speciation also discussed. Prereq: BIOL 211 or 1 year college biology (department override required if BIOL 211 not completed)

BIOL 397: 3 s.h.**Marine Botany**

The taxonomy, ecology, distribution, life histories, physiology and economic status of marine and marine-fringe plants of the Middle Atlantic coast. Covers techniques of collecting, preserving, identifying and cataloging.

BIOL 400: 3-12 s.h.**Co-Op Ed Experience in Biol**

Co-Op Ed Experience in Biol

BIOL 415: 3 s.h.**Mammalogy (W)**

Phylogeny, taxonomy, adaptations, behavior and ecological relationships of mammals. Acquisition of laboratory and field techniques are stressed. 2 hrs. lec., 3 hrs. lab. Weekend field trips. Offered periodically in fall. Prereq: C- or higher in BIOL 211.

BIOL 415H: 3 s.h.**Hon: Mammalogy (W)****BIOL 416: 3 s.h.****Entomology**

Introduction to insects with emphasis on structure and function, behavior, adaptations, ecology, systematics, and economic and medical significance. Collecting, pinning and preservation techniques are covered. Field trips. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: C- or higher in BIOL 211.

BIOL 418: 4 s.h.**Aquatic Entomology**

Aquatic entomology covers topics such as aquatic insect morphology, physiology, ecology, behavior and evolution in a variety of aquatic systems and includes a significant taxonomic component. Each student will be required to make an aquatic insect collection. Prereq: BIOL 211 and BIOL 343 or permission of instructor. 3 hrs lec., 3 hrs. lab.

BIOL 424: 3 s.h.**Mycology**

The taxonomy, morphology, physiology and ecology of fungi. Laboratory activities include surveys of local populations of fleshy fungi, fungal pathogens of plants and soil fungi; physiological studies on growth and reproduction; experimental studies of fungal ecology; and studies of comparative morphology of diverse fungal groups. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: C- or higher in BIOL 221 and BIOL 362 or BIOL 263.

BIOL 435: 3 s.h.**Animal Physiology**

Structure and functions of animals. Independent investigation and recent physiological theories emphasized. 2 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: C- or higher in BIOL 211 and BIOL 362 or BIOL 263; CHEM 112.

BIOL 436: 3 s.h.**Plant Physiology**

Life processes of plants. Water relations, nutrition, translocation, photosynthesis, metabolism, growth, development and reproduction will be considered with particular reference to higher plants. 2 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 221 and BIOL 362 or BIOL 263. CHEM 231 or 235 recommended.

BIOL 437: 3 s.h.**Endocrinology**

The role of hormones in the integration and control of physiological and developmental process is stressed as well as the molecular mechanism of hormone action. 3 hrs. lec. Offered in fall. Prereq: BIOL 362 or BIOL 263.

BIOL 437H: 3 s.h.**Hon: Endocrinology****BIOL 438: 3 s.h.****Neurobiology**

The structure and function of the nervous system. Lectures will cover a broad range of topics, from the molecular to the cognitive. One of the major themes is the relationship between the brain and behavior. 3 hrs. lec. Offered periodically. Prereq: BIOL 362 or BIOL 263.

BIOL 442: 3 s.h.**Wildlife Ecology & Management**

Wildlife management involves protecting and conserving endangered species, increasing the number of game species and controlling pest species. We will discuss how the understanding of wildlife ecology, history, policy and statistics help shape the decisions a wildlife manager makes in the real world. Unique laboratory experiences will include field orienteering, radiotracking, soil and water assessment, vegetative measurements and animal trapping. Students will use these lab experiences to collect and analyze data in the development of a wildlife management plan. 2 hrs. lec., 3 hrs. lab. Prereq: BIOL 375 and BIOL 343.

BIOL 443: 3 s.h.**Conservation Biology**

Population ecology and genetics applied to the conservation of rare, threatened and endangered species. Emphasis on the regulation of abundance, theoretical models of population dynamics, experimental design, sampling approaches and case studies. 2 hrs. lec., 3 hrs. lab. Offered annually (usually in fall). Prereq: C- or higher in BIOL 101, 343.

BIOL 445: 3 s.h.**Aquatic Biology**

Study of the physical and biotic aspects of temporary pools, streams, ponds and rivers. Field trips. 2 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 211, 221, PHYS 132 or 232 desirable.

BIOL 446: 3 s.h.**Ecosystems (W)**

Ecosystem processes including nutrient cycles, energy budgets and trophodynamics are discussed for terrestrial, coastal and marine ecosystems. Processes are discussed for ecosystem types such as those controlled by fire, volcanism, chemosynthetic bacteria, detrital food resources, herbivory and predation. Ecosystems viewed in a global perspective to understand global carbon and nutrient cycles. 3 hrs. lec./discussion. Offered in spring of even years. Prereq: BIOL 343 and ENGL 110.

BIOL 447: 4 s.h.**Chesapeake Bay System (W)**

Study of the effects of human activity on the ecosystems of the Chesapeake Bay System and the role of ecological principles in current restoration efforts. Investigation of how agricultural practices, riparian forests, tidal and nontidal wetlands and urban development affect the input of nutrients and toxins, and the estuarine processes in Chesapeake Bay that cause eutrophication and population declines in fisheries. 2 hrs. lec., 4 hrs. lab/field. Offered in fall. Prereq: BIOL 343 and ENGL 110.

BIOL 448: 3 s.h.**Wetland Ecology and Management**

The investigation of the various biotic and abiotic components of wetland ecosystems, with an emphasis on wetland vegetation, hydrology, and biogeochemical processes. Course content will be a mix of fundamental and applied ecology and will cover topics such as vegetation succession, hydric soil, nutrient cycling, wetland classification and delineation, restoration and management, invasive species, and wetland loss. Prereq: BIOL 343 or permission of instructor.

BIOL 454: 3 s.h.**Immunology**

The development of innate, humoral and cellular immunity to an antigenic stimulus is discussed. Role of these mechanisms in immunogenetics, immunologically mediated disease, immunological protection against infectious agents, use of antibodies in diagnostic tests, and antibody- and cell-based cancer therapy are also considered. 3 hrs. lec. Offered in spring. Prereq: BIOL 362 or 263.

BIOL 454H: 2 s.h.**Hon: Immunology****BIOL 455: 3 s.h.****Cardiopulmonary Physiology**

Cardiovascular and pulmonary function. Covers heart muscle, electro-mechanical properties of the heart, hemodynamics, mechanics of ventilation, gas transport and cardiopulmonary insufficiencies. Laboratory exercises include use of human subjects, animal experimentation and computer simulations. 2 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 211, 362 or 263, 356 and CHEM 231 or 235 for the B.S. in biology; CHEM 103 and CHEM 104 for the B.S. in allied health technology.

BIOL 461H: 3 s.h.**H:General Microbiology****BIOL 462: 4 s.h.****Molecular Biology (W)**

The molecular and macromolecular basis of life. The structure and function of cellular macromolecules, molecular techniques of genetic analysis and the control of cellular processes will be examined in depth. 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: BIOL 362, 364 or 365, and ENGL 110. BIOL 461 or CHEM 326 recommended.

BIOL 463: 4 s.h.**Virology**

Comprehensive investigation of animal viruses. In-depth analysis of virus particles, modes of replication, epidemiology of virus infection, virus host interactions and vaccines. Focus is on medically important viruses such as herpes, influenza, hepatitis and human immunodeficiency viruses. Laboratory exercises include the culture and analysis of viruses in bacterial and mammalian systems. 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: 364 or permission of instructor.

BIOL 465: 3 s.h.**Developmental Biology**

Principles of development and differentiation in animals and plants at the molecular and supramolecular levels of organization. The laboratory includes both experimental and descriptive embryology. 2 hrs. lec., 3 hrs. lab. Offered in spring. BIOL 362 or 263, 364 or 365, or permission of instructor.

BIOL 466: 3 s.h.**Molecular and Cell Techniques**

Application and theory of techniques commonly used in biotechnology, and cell and molecular biological research. Cell culture, plant tissue culture, immunological techniques, cell fusion, radioisotope labeling and detection, centrifugation, microscopic techniques and electrophoretic protocols will be covered in depth. Intended for biology B.S. majors in the molecular biology/biotechnology option. 5 hrs. integrated lecture/lab. Offered in spring. Prereq: BIOL 462. BIOL 461 recommended.

BIOL 467: 3 s.h.**Human Genetics:Analysis/Apps (W)**

Applications of traditional and molecular approaches in understanding the genetic basis for human traits. Gene mapping and identification, cytogenetics and DNA sequence analysis will be covered in depth. Gene function, regulation, mutations and cloning will be explored in the context of human diseases. The Human Genome Project, genetic diagnostics, gene therapy and transgenic organisms will be addressed, along with the genetic basis of cancer, behavior, immunity and development. Genetic counseling and medical genetics will be discussed. 3 hrs. lec./discussion. Offered annually. Prereq: BIOL 364 or 365, ENGL 110.

BIOL 470: 1,2 s.h.**Biology Colloquium**

An opportunity to meet visiting scientists and to discuss their research work. Students will read and discuss, in a seminar format, assigned papers prior to the presentation of the colloquium by the visiting scholar. In addition, they will be expected to participate in discussions with the speaker after the colloquium hosted by the Department of Biology. Offered periodically. Prereq: BIOL 101 or BIOL 100. Other courses indicated by instructor.

BIOL 471: 4 s.h.**Topics In Biology**

Detailed investigations of a topic of current interest. Topic to be announced each time course is offered. Offered periodically. Prereq: Upperclass standing or permission of instructor.

BIOL 471H: 4 s.h.**Hon: Topics in BIOL:****BIOL 472: 1,2 s.h.****Seminar In Biology**

Group discussions. General theme to be determined by professor. Offered annually. Prereq: 16 s.h. of biology and courses indicated by the instructor.

BIOL 472H: 1,2 s.h.**HNRS:Seminar in Biology****BIOL 473: 1 s.h.****Methods/Teaching Biological Issues in the Secondary School**

A seminar for prospective life science teachers to consider methods a teacher might employ to present controversial aspects of biology in intellectually honest, balanced ways which also demonstrate sensitivity to the various moral, ethical and political dilemmas secondary school students may encounter. 1 hr. lecture. Offered annually. Co- or prereq: EDSE 435; required of all B.S.Ed./BIOL students prior to or with EDSE 461.

BIOL 483: 3 s.h.**Applied Ethology**

An introduction to applied animal behavior, including (1) the behavior of companion animals, animals in zoos & aquaria, animals in labs, and animals in agriculture/aquaculture; (2) animal welfare, (3) ethical issues in animal use, (4) methods of training captive animals, and (5) career options and certifications in animal behavior. 3 hrs lecture. Offered periodically. Prereq: PSYC 316 or BIOL 385; PSYC 300 or BIOL 300 or PSYC 495; Senior standing or permission of instructor. Students cannot also earn credit in PSYC 483.

BIOL 484: 3 s.h.**Mech of Animal Behavior**

An exploration of the physiological mechanisms that regulate animal behavior. Nervous and endocrine system physiology are examined and applied to understanding behavioral neuroendocrinology, the integrative study of hormones, brain, and behavior. Research methods in behavioral physiology and the importance of genetic control mechanisms are recurrent topics. A comparative approach is taken, and behavioral physiology is considered in ecological and evolutionary contexts. 3 hrs. lec. Prereq: BIOL 362 or permission of instructor. BIOL 385 recommended.

BIOL 486: 3 s.h.**Behavioral Ecology**

An in-depth examination of the evolution of animal behavior via natural selection with a on the adaptive significance (i.e., fitness consequences) of behaviors involved in foraging, resource defense, cooperation, mating, parental care, and communication. Predator-prey interactions, animal sociality, and approaches to studying behavioral ecology are recurrent topics. Involves a substantial field component where students learn to observe, document, and quantify animal behavior in the wild. 2 hrs. lec., 3 hrs. lab/field. Prereq: C- or higher in BIOL 343. BIOL 385 recommended.

BIOL 489: 1-4 s.h.**Honors Course**

For the definition of honors course and student eligibility, refer to the Special Academic Opportunities section of this catalog.

BIOL 495: 3 s.h.**Biological Oceanography**

Intensive summer lecture and field course teaching the physical, chemical and biological factors controlling the structure and dynamics of marine ecosystems. Classroom instruction focuses on theoretical principles concerning the environmental control of phytoplankton communities by sunlight, nutrients and grazing. The dynamics and complexity of marine food webs including the phytoplankton, zooplankton and upper trophic levels. Laboratory and field instruction focuses on ocean monitoring and sampling from research vessels, biomass determination and identification of key plankton species, measurement of the rates of net and gross primary production using oxygen light-dark bottle experiments, and optical and chemical techniques of determining phytoplankton biomass and species composition. Approximately 40-50% of course time is spent in field. Prerequisites: C- or higher in ESCI 261 and BIOL (211 or 221), or permission of instructor.

BIOL 498: 1-4 s.h.**Independent Study**

Student research on a topic agreed on with faculty supervisor. Applicant for independent study is required to submit a Request for Special Study Assignment form.

BIOL 499: 1-4 s.h.**Departmental Honors**

For the definition of honors course and student eligibility, refer to the Special Academic Opportunities section of this catalog.

BIOL 564: 4 s.h.**Genetics and Molecular Biology**

Genetics and Molecular Biology

BIOL 589: 4 s.h.**Topics In Biology**

Topics In Biology

BIOL 602: 1-4 s.h.

Prblms:

Prblms:

BIOL 625: 3 s.h.

Plant Systematics

Plant Systematics

BIOL 643: 3 s.h.

Conservation Biology

Conservation Biology

BIOL 647: 4 s.h.

Chesapeake Bay System

Chesapeake Bay System

BIOL 651: 3 s.h.

General Microbiology

General Microbiology

BIOL 662: 4 s.h.

Molecular Biology

Molecular Biology

BIOL 667: 3 s.h.

Human Genetics:Analysis/Apps

Human Genetics:Analysis/Apps

BIOL 685: 3 s.h.

Animal Behavior

Animal Behavior

Business Administration (BUAD)

BUAD 101A: 3 s.h.

Introduction to Business (G3)

Introduction of basic business concepts such as institutional setting, organizational structures, decision making, accounting, finance, labor relations, management, marketing and government-business relations. No credit for BUAD majors, except as departmental elective if taken before becoming a BUAD major. Offered in spring, fall.

BUAD 101B: 3 s.h.

Introduction to Business (G3)

Introduction of basic business concepts such as institutional setting, organizational structures, decision making, accounting, finance, labor relations, management, marketing and government-business relations. No credit for BUAD majors, except as departmental elective if taken before becoming a BUAD major. Offered in spring, fall.

BUAD 161: 3 s.h.

Intro to Financial Accounting

Examination of the account cycle and systems and procedures for developing financial information; introduction to the conceptual and theoretical foundation of financial information systems; and interpretation of financial statements. Offered in fall, spring. Prereq: MATH 101 or MATH placement beyond MATH 101 (MATH 151, 155H, 160, 161, 163H).

BUAD 162: 3 s.h.

Intro to Managerial Accounting

Problem-oriented introduction to the interpretation and application of accounting information from the viewpoint of management with emphasis on planning and control and long-range strategies. Offered in fall, spring. Prereq: C- or higher in BUAD 161.

BUAD 202: 3 s.h.

Legal Environment of Business (G3)

The American legal system and its impact on business. Includes the court system, litigation and alternative dispute resolution, contract law, torts in the business environment, product and service liability, property, and criminal law. Offered in fall, spring.

BUAD 202H: 3 s.h.

Hon: Legal Environ/Business (G3)

BUAD 206: 3 s.h.

Business Research Methods

The theory and practice of a number of widely used research techniques as an aid to decision making. Business application will be emphasized with cases and problems from the areas of management, marketing, finance and accounting. Uses computer programs for data analysis, interpretation and presentation of research results. Prereq: MATH 235.

BUAD 231: 3 s.h.

Principles of Marketing

Explores the role of marketing in the free enterprise system. Defines marketing and its relationship to society. Reviews the controllable elements of the marketing mix: product, place, promotion, and price. Explains marketing concepts and terminology. Applies terminology and concepts to real world problems. Covers basic analytic skills needed to solve marketing problems. Offered in fall, spring. Prereq: C- or better in ECON 101 and 102.

BUAD 231H: 3 s.h.

H:Principles of Marketing

H:Principles of Marketing

BUAD 251: 3 s.h.

Principles of Management (G3, W)

Examines management processes of planning, organizing, leading and controlling and provides basic knowledge of management history, managers' roles and functions, environment influences, effective decision making, leadership and team management, ethical and social responsibilities, and current trends in management. Prereq: C- or higher in ECON 101, 102 and ENGL 110.

BUAD 251H: 3 s.h.

Hnrs:Principles of Managemnt (G3, W)

Hnrs:Organizatn and Managemnt

BUAD 307: 3 s.h.

Management Information Systems

Technology, application and management of computer-based management information systems. Covers identification of the need for management information, the assignment of resources and establishment of an information system. Includes case studies. Offered in fall, spring. Prereq: BUAD 162, 251.

BUAD 310: 3 s.h.

Economics of Justice (D, P)

Economic concepts and models used to explain legal principles. The effects of legal decision-making on economic efficiency. Topics include property, contracts, torts and criminal law. Offered annually. Prereq: BUAD 202, ECON 102, COMM 100, ENGL 110, junior status.

BUAD 310H: 3 s.h.

H:Economics of Justice (D, P)

BUAD 341: 3 s.h.**Managerial Finance 1 (W)**

Fundamental topics in corporate finance, including: use of financial statements, time value of money, capital budgeting and working capital management. Offered in fall, spring. Prereq: ECON 102, C- or higher in BUAD 162, and ENGL 110.

BUAD 352: 3 s.h.**Human Resource Management**

Survey course familiarizes students with the human resource function. Topics include recruitment, orientation, training, compensation, safety, performance evaluation and labor relations. Offered in fall, spring. Prereq: C- or higher in BUAD 251.

BUAD 352H: 3 s.h.**H:Human Resource Management**

H:Human Resource Management

BUAD 358: 3 s.h.**Management Science**

An introduction to management science techniques in order to facilitate quantitative reasoning as an aid for managerial decision making. Emphasis on developing analytical skills. Decision-making cases and problems presented with the aid of computers. Topics include linear programming (including modeling, computer solution and sensitivity analysis), assignment/transportation/transshipment problems, project management techniques (PERT/CPM), queuing models, simulation, inventory control models, decision theory, analytic hierarchy process (AHP) and Markov processes. Prereq: MATH 235, and BUAD 206 (306).

BUAD 372H: 3 s.h.**Hon:Organizational Behavior****BUAD 455: 3 s.h.****Strategy and Policy (W)**

Theory and practice of modern strategic management. Includes strategy formulation, planning, decision techniques, organizational design to implement change and control systems to monitor change. Prereq: BUAD 202, 206, 307, 231, 358, 341, 352 and ENGL 110.

BUAD 488A: 3 s.h.**Seminar in Accounting and Finance (W)**

Research on a topic including preparation and critical analysis of a paper. Topic need not be from student's option. Offered in fall, spring. Prereq: ENGL 110 and senior status. Prerequisites will vary.

BUAD 488B: 3 s.h.**Seminar in Management and Marketing (W)**

Research on a topic including preparation and critical analysis of a paper. Topic need not be from student's option. Offered in fall, spring. Prereq: ENGL 110 and senior status. Prerequisites will vary.

BUAD 605: 3 s.h.**Business and Its Environment**

Business and Its Environment

BUAD 653: 3 s.h.**Operations Management**

Examines positioning, design and operating decisions and their interrelationships in the context of the overall competitive strategy of the firm. The international dimensions of operations management, as well as the relationships of operations management to other functional areas are stressed. Topics include operations strategy, quality management, product and service design, process design, capacity planning, facilities layout, design of work systems, location planning, total quality control, aggregate planning, independent demand inventory system, push and pull systems, enterprise resources planning, supply chain management, and scheduling.

BUAD 670: 3 s.h.**Strategy and Policy**

Capstone seminar in the formulation and administration of organizational planning and policy. The student is expected to utilize integrate, and apply the theories, concepts, principles and techniques relevant to business problems and situations. Uses case studies, course projects, library research, field research, group decisionmaking, role-playing, simulations and other strategic planning and management process exercises. Emphasizes the global nature of business and utilizes technology to coordinate the activities of the group efforts. Prereq: Demonstrated proficiency in general business concepts at the introductory level through job experiences or coursework.

Chemistry (CHEM)

CHEM 101: 3 s.h.**Chem!Better Things/Better Lvng (G2)**

A brief introduction to chemistry and its uses in modern society: consumer, environmental, and industrial application. Presented in a mostly descriptive fashion. No credit toward chemistry major. 3 hrs. lec. Offered in fall, spring.

CHEM 102: 3 s.h.**Demonstration Chemistry (G2)**

Chemical reactions that are encountered in everyday living, present in living systems, the basis of societal issues, the foundation of producing new materials and used to modify materials into finished products. Investigated by observing, describing, explaining and presenting demonstrations. Emphasis on readily understood reactions that begin with and produce nonhazardous materials. No credit toward chemistry major. 2 hrs. lec., 2 hrs. lab. Offered in spring.

CHEM 103: 3 s.h.**Gen Organic and Biochemistry 1 (G2)**

An introduction to the basic theories of general and organic chemistry, including nomenclature, reactions and problem solving. Appropriate for nonscience majors and satisfies general education requirements. Proficiency in algebra is essential. High school chemistry is required. 2 hrs. lec., 2 hrs. lab. Offered fall, summer.

CHEM 104: 3 s.h.**Gen Organic and Biochemistry 2 (G2)**

Solutions, acids and bases, oxidation reduction and organic chemistry, including nomenclature and basic reactions with relevancy to biochemistry. Appropriate for nonscience majors and satisfies general education requirements. 2 hrs. lec., 2 hrs. lab. Offered in spring. Prereq: CHEM 103.

CHEM 105: 3 s.h.**Culinary Chemistry (D, G2)**

Introduction to foundational chemical principles using examples from food, cooking, and baking. Topics include chemical terminology, reactions, problem solving, the scientific method. Includes specific examples from global cuisines including comparisons of ingredients and cooking methods on the molecular level. There are no pre-requisites for this course which is appropriate for non-science majors and satisfies general education requirements. No credit toward chemistry major. 2 hrs lec, 2 hrs lab. Offered: fall, summer.

CHEM 110: 3 s.h.**Fundamentals of Chemistry**

An intensive review of the fundamentals of chemistry, with particular emphasis placed on solving chemistry problems. Topics include: measurements, formulas and nomenclature, equations, stoichiometry, atomic and molecular structure, solution concentrations, acids and bases. This course is designed to prepare students majoring in the sciences for their general chemistry sequence, CHEM 111 and CHEM 112. This course may be counted only as an elective beyond normal graduation requirements. 3 hrs. lec./problem solving. Pre- or Coreq: MATH 101 or MPT of 160 or higher.

CHEM 111: 4 s.h.**Introductory Chemistry 1 (G2)**

The properties and theories of the solid, liquid and gaseous states of matter, the stoichiometry and thermochemistry of chemical reactions, and theories and applications of molecular structure and bonding. Proficiency in algebra is essential. High school chemistry is strongly recommended. Intended for science majors: biology, chemistry, Earth sciences, physics. 3 hrs. lec., 1 hr. discussion, 2 hrs. lab. Prereq: Placement in Chem.111 or C- grade or higher in CHEM 110, AND MATH 101 with a grade of C- or higher or MPT of 160 or higher, or permission of instructor.

CHEM 112: 4 s.h.**Introductory Chemistry 2 (G2)**

Continuation of CHEM 111. The interactions of matter and energy-thermodynamics, kinetics and electrochemistry. Equilibria in aqueous systems theory and practice. Coordination chemistry and descriptive chemistry of the elements. 3 hrs. lec., 1 hr. discussion, 2 hrs. lab. Prereq: CHEM 111 with a grade of C- or higher; C for chemistry majors.

CHEM 112H: 4 s.h.**Hrs: Introductory Chemistry 2 (G2)****CHEM 113H: 1 s.h.****H: Introductory Chem 2 Seminar**

The ideas of introductory chemistry are studied in extended depth, using problems, laboratory exercises, readings and discussion. Grades of B- or higher in both CHEM 112 and CHEM 113 will result in honors designation for the pair. The pair of courses counts as one entry in the science component of general education and results in 5 hours of general education credit. 1 hr. discussion. Prereq or Coreq: CHEM 112 is required

CHEM 179: 1-3 s.h.**Experimental**

Experimental

CHEM 188: 1 s.h.**Freshman Seminar in Chemistry**

An orientation to the opportunities and services available to chemistry students in the university and professional environments. Students will develop a better understanding of the major and career options and will be introduced to the chemistry department faculty and programs. 1 hr. discussion. Required of all freshman chemistry majors. Recommended for transfer students. Offered in fall.

CHEM 231: 4 s.h.**Organic Chemistry 1 (G2)**

Organic structural theory, including conformations and configurations of molecules and functional group classification of organic compounds: alkanes, alkenes, alcohols, ethers, alkyl halides, aldehydes and ketones, and aromatic and organometallic compounds. Major emphasis on relationships among molecular structure, chemical reactivity and physical properties. Thorough integration of reaction mechanisms as elucidated using principles of kinetics, thermodynamics, stereochemistry and spectroscopy. Introduction to the instrumentation of organic chemistry: proton and carbon-13 NMR, infrared and mass spectrometry. 3 hrs. lec., 3 hrs. lab. Prereq: CHEM 112 with a grade of C- or higher; C for chemistry majors.

CHEM 232: 4 s.h.**Organic Chemistry 2 (G2)**

The structure-property-reactivity-mechanism-synthesis approach from CHEM 231 continues with application to, and/or emphasis on, unsaturated compounds-alkynes, dienes and aromatic compounds. Also, carbonyl compounds, including carboxylic acids and derivatives, along with amines, phenols and complex compounds with multiple functionality. Introduction to natural and synthetic polymers; biomolecules, including fats, oils, amino acids and carbohydrates, along with the basic reactions of metabolism. Thorough integration of structural relationships to spectral properties using UV, IR, C-13 and H-1 NMR, and mass spectral instrumentation and derived data. 3 hrs. lec., 3 hrs. lab. Prereq: CHEM 231 with a grade of C- or higher.

CHEM 235: 4 s.h.**Organic Chemistry**

The elementary theory, reactions, and properties of organic compounds in an integrated fashion. No credit toward chemistry major. 3 hrs. lec., 3 hrs. lab. Offered fall. Prereq: CHEM 112 with a grade of C- or higher; C for chemistry majors. CHEM 235 is not an acceptable Prereq for CHEM 232.

CHEM 251: 3 s.h.**Inorganic Chemistry 1**

Emphasis on the unification of descriptive chemistry with the basic principles that may be used to explain natural phenomena in inorganic chemistry. The physical and chemical properties of the elements and classes of compounds such as oxides, halides, hydrides, etc., will be described and explained. Acid-base and oxidation-reduction behavior will be emphasized, along with coordination chemistry. Periodic trends are an integral part of the course. 3 hrs. lec. Offered in spring. Prereq: CHEM 112 with a grade of C- or higher; C for chemistry majors; or Coreq: CHEM 112.

CHEM 265: 4 s.h.**Quantitative Analysis (G2)**

An integrated study of advanced chemical equilibrium, activity, experimental uncertainty and accepted practice in the analytical laboratory. Titrimetry, potentiometry, extraction theory, introductory spectroscopy and chromatography are discussed. 3 hrs. lec., 3 hrs. lab. Offered spring, summer. Prereq: CHEM 112 with a grade of C- or higher; C for chemistry majors.

CHEM 265H: 4 s.h.**H: Quantitative Analysis (G2)****CHEM 279: 3 s.h.****Experimental**

Experimental

CHEM 300: 3-12 s.h.**Co-Op Ed Experience in Chem**

Co-Op Ed Experience in Chem

CHEM 312: 3 s.h.**Chemistry in Nanotechnology**

A study of principles, methods and applications of chemistry in nanotechnology, with a special emphasis on the chemistry of materials. Topics include synthesis, characterization and manipulation of nanomaterials, sensors, bioinspired nanomaterials, atomic force and scanning electron microscopy. 2 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: NFMT 313 and CHEM 104 or 111; or CHEM 232; or CHEM 235; or permission of instructor.

CHEM 312H: 3 s.h.**Hon: Chem in Nanotechnology****CHEM 324: 4 s.h.****Plant Biochemistry**

A study of enzymes and pathways involved in plant intermediary metabolism as related to plant cell structure, function and plant development. Topics include plant bioenergetics, biosynthesis of plant hormones and elicitor molecules, signal perception and transduction, and secondary metabolites (natural products). 3 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: BIOL 221 and 263; CHEM 232 or 235.

CHEM 326: 4 s.h.**Biochemistry 1 (G2)**

The structure and physical and chemical properties of carbohydrates, lipids, nucleic acids and other biological compounds, and their importance in life processes. Introduction to metabolic processes. Laboratory studies include the properties of chemicals of biological origin, techniques in isolation, identification, qualitative and quantitative analysis. 3 hrs. lec., 3 hrs. lab. Prereq: C- in CHEM 232 or 235.

CHEM 327: 4 s.h.**Biochemistry 2**

Major focus on understanding the chemistry behind the function of biological compounds involved in cellular processes. Specific topics include enzyme mechanisms and energetics, membrane dynamics and transport, replication, transcription, protein translation and signal transduction. Additionally, metabolism of lipids, amino acids and nucleotides is studied in detail. 3 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: CHEM 326 with a grade of C- or higher.

CHEM 327H: 4 s.h.**Hon: Biochemistry 2****CHEM 328: 1 s.h.****Analytical Biochemistry Lab**

Laboratory course designed to expand the technical experience of biochemistry students. Experiments completed focus on the analysis of major classes of biological compounds using advanced techniques and instrumentation. Includes opportunities to develop literature research, writing and presentation skills critical for scientific study. 3 hrs. lab. Offered in spring. Prereq or Coreq: CHEM 327 or CHEM 324 or BIOL 324.

CHEM 341: 4 s.h.**Physical Chemistry 1 (W)**

A thermodynamic study of chemical systems, including ideal and nonideal solutions, chemical and phase equilibria, and electrochemistry. Investigation of the macroscopic behavior of gases and its theoretical explanations. Summary of the determination and application of additive properties. 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: CHEM 265 with a grade of C or higher, PHYS 232, MATH 311 and ENGL 110.

CHEM 342: 4 s.h.**Physical Chemistry 2 (W)**

Chemical kinetics, statistical mechanics and the development and present state of quantum theory, including chemical bonding theories, atomic and molecular spectroscopy, and methods of structure determination. 3 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: CHEM 341 with a grade of D or higher and ENGL 110, or permission of instructor.

CHEM 342H: 4 s.h.**H: Physical Chemistry 2 (W)****CHEM 372: 3 s.h.****History of Chem and Society (D, P)**

The history of the development of the science of chemistry from its roots in Egyptian and Greek societies through its specialization in the early 20th century. The relationships between chemical developments and society are explored, as well as the influences of chemistry on Western thought. 3 hrs. discussion. Offered in fall. Prereq: COMM 100; ENGL 110; junior status; CHEM 102, 104 or 111; two social science courses, including one history course: HIST 101, 102 or 410 preferred.

CHEM 372H: 3 s.h.**Hrs: Hist of Chem and Society (D, P)**

The history of the development of the science of chemistry from its roots in Egyptian and Greek societies through its specialization in the early twentieth century. The relationships between chemical developments and society are explored, as well as the influences of chemistry on Western thought. 3 hrs. of discussion. Offered in spring.

CHEM 375: 4 s.h.**Environmental Chemistry (D, G2)**

The application of modern chemical principles to the chemical and physical interactions among the hydrosphere, lithosphere, atmosphere and biosphere. Also discussed are the more recent topics in the areas of pollution, energy and waste control. (The laboratory covers the current, fundamental instrumental methods and techniques encountered in environmental analysis.) 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: CHEM 112 with a grade of C- or higher.

CHEM 379: 3 s.h.**Experimental**

Experimental

CHEM 381: 4 s.h.**Polymer Chemistry 1**

An introduction to polymer chemistry. Covered are nomenclature, solutions and solubility, molecular weight determination, morphology, structure determination, polymerization reactions and synthetic methods, physical properties and fabrication methods. The laboratory provides an introduction to the methods of polymer synthesis and characterization. 3 hrs. lec., 3 hrs. lab. Offered in alternate fall semesters. Prereq: C or higher in CHEM 232 or permission of instructor.

CHEM 381H: 4 s.h.**Hon: Polymer Chemistry I**

CHEM 391: 1 s.h.**Advanced Laboratory 1**

Application of advanced techniques in organic synthesis including chemical and physical methods of separation with major emphasis on advanced spectroscopic methods of characterizing organic compounds. 3 hrs. lab. Offered in fall. Prereq: C or higher in CHEM 265, 232.

CHEM 392: 1 s.h.**Advanced Laboratory 2**

A continuation of CHEM 391 including advanced techniques in inorganic synthesis and analysis. 3 hrs. lab. Offered in spring. Prereq: CHEM 251 with a grade of C or higher.

CHEM 400: 3-12 s.h.**Co-Op Ed Experience in Chem**

Co-Op Ed Experience in Chem

CHEM 435: 3 s.h.**Advanced Organic Chemistry**

Current theories of organic chemistry, with major emphasis on physical aspects as applied to structure, reactions, spectroscopy and reaction mechanisms. 3 hrs. lec. and reading in current literature. Offered in spring. Prereq: C or higher in CHEM 232.

CHEM 452: 3 s.h.**Inorganic Chemistry**

Theories of bonding and structure of inorganic elements and compounds, acid-base theories, coordination chemistry, organometallic chemistry, and bioinorganic chemistry. 3 hrs. lec. Offered in fall. Prereq: C or higher in CHEM 251 and 342 or permission of instructor.

CHEM 452H: 3 s.h.**H: Inorganic Chemistry****CHEM 465: 4 s.h.****Analytical Chemistry (W)**

Theory and practice of modern analytical techniques in chemical separations and instrumental analysis. 3 hrs. lec., 3 hrs. lab. Offered in spring. Prereq: ENGL 110 and Prereq or Coreq: CHEM 342.

CHEM 476: 4 s.h.**Environmental Chemistry 2**

Extension of the principle topics covered in CHEM 375, with emphasis on quantitative aspects of topics such as the ozone layer, potential greenhouse effects, tropospheric chemistry, chemical fate and transport in aquatic systems, phase interactions and chemical equilibrium. Includes computer modeling, government regulations, pesticides and pollutants, hazardous waste and disposal methods. All topics will be studied from chemical, political and socioeconomic perspectives. 3 hrs. lec., 3 hrs. lab. Offered alternate spring semesters. Prereq: CHEM 375.

CHEM 482: 3 s.h.**Polymer Chemistry 2**

Topics in polymer physical chemistry, including conformation of polymer molecules, polymer solutions, theory of molecular weight determination methods, rheology, orientation, time-temperature dependence of physical properties, thermodynamics and kinetics of polymerization, rubber elasticity and spectroscopic methods of polymer characterization. 3 hrs. lec. Offered alternate spring semesters. Prereq: CHEM 342 and 381 or permission of instructor.

CHEM 486: 4 s.h.**Topics in Chemistry**

Detailed investigation of a topic in chemistry of current interest. Topic to be announced each time course is offered. Offered infrequently. Prereq: permission of instructor.

CHEM 487: 0.5 s.h.**Seminar in Chemistry 1**

Topics of current chemical interest. 1 hour. Offered in fall. Prereq: senior standing or permission of instructor.

CHEM 488: 0.5 s.h.**Seminar in Chemistry 2**

Topics of current chemical interest. 1 hour. Offered in spring. Prereq: CHEM 487; Coreq: GRAD 999 or permission of instructor.

CHEM 489: 1-4 s.h.**Honors Course**

For the definition of honors course and eligibility, refer to the Special Academic Opportunities section of this catalog.

CHEM 498: 1-3 s.h.**Independent Study**

A course for qualified students to investigate problems in chemistry. Guidance in the methods of chemical research. A minimum of 3 hours of lab required per semester hour. Prereq: permission of instructor. For further information on independent study, see the Special Academic Opportunities section.

CHEM 499: 0.5-4 s.h.**Departmental Honors**

For the definition of honors course and eligibility, refer to the Special Academic Opportunities section of this catalog.

Communication (COMM)

COMM 100: 3 s.h.**Fundamentals of Speech**

Required fundamentals course in general education. An introductory study of the principles of public speaking with particular emphasis upon the selection and organization of information for persuasive purposes. Satisfies competency requirement.

COMM 100H: 3 s.h.**Hrs: Fundamentals of Speech**

Required fundamentals course in general education. An introductory study of the principles of public speaking with particular emphasis upon the selection and organization of information for persuasive purposes. Satisfies competency requirement. Offered in fall, spring

COMM 101: 3 s.h.**Introduction to Communication (G1)**

Focuses on the role of communication in everyday life. Emphasis on how communication shapes the construction of meaning, the maintenance of community and relationships, and various means of interconnection. Offered in fall, spring.

COMM 121: 3 s.h.**Intro to Media Arts Production**

Audio and video production fundamentals, techniques and uses. Includes study of the production process and hands-on production assignments in both audio and video. Laboratory work required. Offered in fall, winter, spring.

COMM 179: 3 s.h.**Experimental**

Experimental

COMM 201: 3 s.h.**Theory of Communication (G1)**

Focuses on the different approaches to the study of communication as a discipline. Emphasis on both historical and current scholarship in the field through diverse means of inquiry. Prereq: C- or better in COMM 100 and COMM 101

COMM 203: 3 s.h.**Small Group Communication (D, G1, W)**

Emphasis on the theory and practice of small group communication and problem solving. Group formation, teamwork, leadership, decision making in groups, group conflict, digital collaboration, and other concepts will be explored. A collaborative group service learning project and course activities will reinforce course concepts. Offered periodically. Prereq: ENGL 110.

COMM 206: 3 s.h.**Communication and Media Law (G1)**

The legal parameters of freedom of expression under the U.S. legal system. Students explore legal and ethical issues related to media systems, organizational communication, public relations and theatre. Offered in fall or spring.

COMM 217: 3 s.h.**Interpersonal Communication (G1)**

Combines theory and experiential application of interpersonal communication in face-to-face and digital contexts. Provide students with a means to analyze interpersonal relationships and skills to integrate more effective communication strategies in their lives both online and offline. Offered periodically. Prereq: COMM 100.

COMM 220: 3 s.h.**Survey of Media (G1)**

A review of media in America and discussion of the historical, social, cultural, and technological forces that shape them and an evaluation of media criticisms.

COMM 224: 3 s.h.**Organizational Communication I**

A survey of the major theoretical approaches to the field and applications to specific organizational issues. Explores the scope and history of organizational communication. Offered in fall. Prereq: COMM 201.

COMM 225: 3 s.h.**Nonprofit Sector Communication (G1)**

Explores the design, management and functioning of nonprofit/civil society organizations, with an emphasis on communication theories and processes. Highlights practices unique to these organizations, with an emphasis on enabling students to establish, run and support them. Offered periodically.

COMM 227: 3 s.h.**Movements & Digital Activism (D, G1, W)**

Focuses on the role of digital communication in understanding how commitment and participation, otherness and identity, conflict and cohesiveness intersect in social movement activism. This course surveys the major social movements of the 20th and 21st Century with special attention to their use of communication technologies. Students will research and/or participate in specific social movement organizations of their choosing.

COMM 230: 3 s.h.**International Broadcasting (W)**

Devoted to the cross-cultural study of the World Broadcasting Systems as an introduction to international electronic media. The course compares the ways in which the media are organized in other countries with that of the United States of America. Offered periodically. Prereq: ENGL 110; COMM majors; INTL majors, minors; or permission of instructor.

COMM 251: 3 s.h.**Public Relations I: Intro to Principles & Theory (G1)**

This first of a 4-course sequence covers the history, principles and current practices of public relations. Series must be taken sequentially. Offered in fall, spring.

COMM 279: 3 s.h.**Experimental**

Experimental

COMM 300: 3-12 s.h.**Co-Op Ed Experience in Comm**

Coop/ Internship in Communication

COMM 301: 3 s.h.**Communication Research (W)**

A survey of research methods for the study of problems in communication. Students define a research problem, survey and critique relevant literature, and design a research strategy using various research paradigms. Majors should take this course in the junior year. Prereq: ENGL 110, COMM 201. COMM 201 and COMM 301 may be taken concurrently. However, if COMM 301 is taken after taking COMM 201, a grade of C- or higher is required in COMM 201.

COMM 301H: 3 s.h.**H:Communcion Research (W)**

H:Communcion Research

COMM 305: 3 s.h.**Business and Professional Communication**

Advanced principles of public speaking in a professional setting. Covers organization and adaptation of speech materials, effective presentation styles, forms of proof. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

COMM 317: 3 s.h.**Intercultural Communication (D, P)**

Explores the possibilities of communication between and among diverse cultures. Close study of cultural codes, symbolic interaction, nonverbal behavior and contexts of intercultural contact. Develops an understanding and appreciation of human diversity and competence in intercultural communication practices. Offered periodically. Prereq: COMM 100, ENGL 110 and junior standing.

COMM 317H: 3 s.h.**Hon: Intercultural Communication (D, P)****COMM 320: 3 s.h.****Radio Production**

Theory and production of various types of audio production using basic studio equipment. Laboratory work required. Offered in fall, spring. Prereq: COMM 121.

COMM 320H: 3 s.h.**H:Radio Production**

H:Radio Production

COMM 321: 3 s.h.**Television Production**

Theory and application of various phases of studio operation and editing in television production. Laboratory work required. Offered in fall, spring. Prereq: COMM 121.

COMM 321H: 3 s.h.**Hrs: TV Production 1****COMM 322: 3 s.h.****Media Aesthetics & Criticism**

Examination and analysis of the processes and products of various media industries, theories, methodologies, and aesthetics, with a focus on understanding and learning to critique the ways in which the media, their texts, and audiences exist within a set of increasingly complex relationships. Prereq: COMM 220, COMM 101, or JRNL 250 (formerly ENGL 250).

COMM 323: 3 s.h.**Producing for Digital Media**

Producing For Digital Media is designed to provide career-ready digital media producing experiences, practicing the many facets of digital content creation for the converged environment including producing in the live television studio, shooting and editing on location, creating in the media production workspace, and publishing to the web. Prereqs: COMM 121 and COMM 321 or COMM 325.

COMM 326: 3 s.h.**Media Writing: News (W)**

Basic news writing and reporting, stressing electronic media. Offered in fall. Prereq: ENGL 110 or permission of instructor.

COMM 327: 3 s.h.**Media Writing: Fiction (W)**

Emphasis on the writing of dramatic scripts with selective production. Offered in spring. Prereq: ENGL 110

COMM 330: 3 s.h.**Media and Women's Culture (D, P)**

The course focuses on the role of the media in the creation and reproduction of culture. It examines how gender, race and class are constructed in media texts, and how women in various social and cultural positions negotiate their own meanings in relation to media portrayals. Offered periodically. Prereq: junior status, COMM 100, ENGL 110.

COMM 333: 3 s.h.**Gender and Communication (D)**

Examines theoretical explanations for the social construction of gendered identity. Considers everyday communication practices and contexts to identify how gender, communication and culture intersect to form the complex matrix of meaning which impacts individuals and society. Prereq: COMM 100, ENGL 110 and junior standing.

COMM 335: 3 s.h.**Comm & Emerging Technologies (G1, W)**

This course focuses on the implications, for individuals and for society as a whole, of the most important new information and communication technologies. Students will acquire an understanding of the role technologies have played in their lives and the impact they have in their future careers.

COMM 337: 3 s.h.**Documentary Film I: Concepts (D)**

Focuses on the history and theory of documentary films. Through readings, screenings, and discussions, the course will provide students with a historical and theoretical understanding of documentary filmmaking and prepare them for more advanced production courses. The students will also explore their own documentary ideas and develop an outline and treatment.

COMM 351: 3 s.h.**Public Relations II: Public Relations Writing (W)**

Hands-on practice in writing news releases for print and broadcast, brochure and newsletter copy, and pitching story ideas to trade editors. Offered in fall, spring. Prereq: COMM 251, ENGL 110.

COMM 371: 3 s.h.**Crisis Emergency & Risk Comm (P)**

This course examines communication challenges faced by public relations practitioners, public information officers, first responders, public health officials, business, government and community benefit leaders, as well as others involved in local, state, and national crisis, emergency, disaster and risk situations. With a focus on appropriate communication message/response strategies and effective use of various communication channels, the course covers theoretical foundations helpful for developing communication plans for pre-, current-, and post-event communication.

COMM 371H: 3 s.h.**Hon: Crisis Emerg & Risk Comm (P)****COMM 379: 3 s.h.****Experimental**

Experimental

COMM 380: 3 s.h.**Digital Media Writing (W)**

Writing and design course focusing on construction of promotional messages for digital media. Students will complete several projects, including critique of publication and web designs; planning and production of print and electronic publications; website writing and layout. Offered in fall, spring. Prereq: ENGL 110 and junior standing.

COMM 390: 3 s.h.**Social Media Campaigns (G1)**

This course emphasizes theory and practice in the strategic planning, writing, communication design, management and analysis of social media campaigns for mobile communications, social media, and online social networking. Prereq: ENGL 110, COMM 100, Junior status (60 credits earned)

COMM 400: 3-12 s.h.**Co-Op Ed Experience in Comm**

Coop/ Internship in Communication

COMM 400H: 3-12 s.h.**Co-Op Ed Experience in Comm**

Honors Co-op/Internship in Communication

COMM 401: 3 s.h.**Critical-Cultural Studies in Communication**

Reciprocal influences of communication on culture and culture on communication. Messages, meanings and culture are approached from several critical standpoints. Prereq: C- or higher in COMM 101, 201 and 301. C- or higher in COMM 401 to count toward fulfilling graduation requirements in the major.

COMM 401H: 3 s.h.

Hrs: Critical-Cultural Studies in Communication
Honors Critical-Cultural Studies in Communication

COMM 403: 3 s.h.**Persuasion & Social Media Infl**

Persuasive speaking from both the modern and classical points of view. Introduces students to classic forms and elements of persuasion as well as the latest research in persuasive communication and social media influence, including such issues as digital communication and algorithmic persuasion, celebrity culture, and emotional labor. Examines the function of persuasion in a variety of contexts and analyzes a series of recent public communication events for both their persuasive efficacy and ethics. Offered in fall or spring. Prereq: COMM 301.

COMM 421: 3 s.h.**Advanced Television Production**

An advanced lecture-demonstration-laboratory application of the various phases of electronic field production, with special attention to directing and advanced editing techniques. Offered in spring. Prereq: COMM 321.

COMM 421H: 3 s.h.**Hrs: TV Production 2****COMM 422: 3 s.h.****Adv Radio Prod: Podcasting**

Provides students with a comprehensive background in all aspects of podcast production. Promotes critical thinking/listening skills and emphasizes advanced level storytelling mechanics. Analysis of best practices for distribution, marketing, monetization, and audience analytics. Lecture/lab course design. Offered periodically. Prereq: COMM 121

COMM 425: 3 s.h.**Broadcast News Reporting**

Style and other basics of radio and television news. Includes collecting data, writing stories, editing and producing video for campus cable TV station. Laboratory work required. Offered in fall. Prereq: COMM 321

COMM 429: 3 s.h.**Topics in Communication**

Content varies. Selected communication perspectives on relevant academic and professional topics examined in depth. Potential topics include: sports communication, argumentation and debate, media entrepreneurship, international public relations, philosophies of communication, new media and culture, power, ideology and discourse. Prereq: Junior status or permission of instructor.

COMM 429H: 3 s.h.**Hon: Special Topics:****COMM 431: 3 s.h.****The Body in Communication (P)**

Focuses on the ways that bodies communicate other than verbally, and how this process of embodied communication plays an active role in our sense of belonging and difference as well as gives shape to the ongoing negotiations between culture and nature. Offered periodically. Prereq: COMM 100, ENGL 110 and junior standing.

COMM 431H: 3 s.h.**HNRs:Body in Communication (P)****COMM 437: 3 s.h.****Documentary Filmmaking II**

This course focuses on the practical and technical aspects of documentary filmmaking. Students will produce their own documentaries that incorporate appropriate approaches and styles as well as advanced storytelling techniques.

COMM 440: 3 s.h.**Leadership and Media**

An introduction to the study and practice of leadership from a media perspective. Particular focus on the relationship between communicating and leading. Examination of leadership concepts and theories in organizational, group and public contexts. Students will analyze their personal leadership styles and develop leadership communication skills through team projects and classroom exercises. Offered periodically. Prereq: junior standing.

COMM 441: 3 s.h.**Political Communication (G1, W)**

Contemporary American political rhetoric focusing on national politics. Content varies. During election years, content includes campaign rhetoric, advertising and debates. In other years, the focus is administrative rhetoric and the interaction of Congress with the President on domestic and foreign affairs. Offered periodically. Prereq: COMM 100, ENGL 110; junior status or permission of instructor.

COMM 450: 3 s.h.**Communication and Conflict (D, P)**

Explores the communicative processes inherent in the development and management of conflict at various social levels. Highlights the various influences on how people manage conflicts at the interpersonal, intercultural, organizational and societal levels with face-to-face and mediated modes of communication. Focuses on specific approaches to managing and resolving conflict, including mediation, negotiation, arbitration, facilitation, and peacebuilding. Offered infrequently. Prereq: COMM 100, ENGL 110, junior standing.

COMM 450H: 3 s.h.**Hrs: Communication and Conflict (D, P)**

Honors Communication and Conflict

COMM 451: 3 s.h.**Public Relations Issues**

Analysis of various organizations' public relations problems and communicative responses. Third in a 4-course sequence. Offered in fall, spring. Prereq: C or higher in COMM 301, COMM 351 or permission of instructor.

COMM 451H: 3 s.h.**H:Public Relations Issues****COMM 452: 3 s.h.****Public Relations Campaigns**

Hands-on practice in public relations problem solving. Involves work in student-run "agencies" to develop and implement a public relations campaign for a nonprofit organization. Capstone course in public relations. Offered in fall, spring. Prereq: COMM 451.

COMM 461: 3 s.h.**Health Communication (P)**

Focuses on the forms and functions of human interaction in a variety of health care settings, and on the ways that mediated messages promote and reinforce certain health values, beliefs, practices and products. Emphasizes the role of cultural context on the construction and interpretation of health-related messages. Offered periodically. Prereq: COMM 100, ENGL 110, junior standing.

COMM 479: 3 s.h.**Experimental**

Experimental

COMM 480: 3 s.h.**Topics in Media:**

Advanced, innovative or exploratory work in media production or a detailed investigation on a topic of current interest in digital media and broadcasting. Investigation of one or more topics that vary according to needs and interests of students and staff. Offered periodically. May be taken for credit more than once as the topics change. Prereq: COMM 121 and Junior Standing or Instructor Permission.

COMM 489: 1-4 s.h.**Honors Course**

Honors Course

COMM 498: 1-4 s.h.**Independent Study**

For the definition of independent study and student eligibility, refer to the Academic Policies section of this catalog.

COMM 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

COMM 499H: 1-4 s.h.**Hon: Dept Honors****COMM 500: 3-12 s.h.****Co-Op Ed Experience in Comm**

Coop/ Internship in Communication

COMM 605: 3 s.h.**Comm Research Proseminar**

A survey and application of research methods for managers and communicators. Students will investigate appropriate literature, design and undertake a study to investigate a communication problem in their profession. Quantitative and qualitative analyses will be considered with a focus on multi-method approaches to research. Class participants will determine how best to measure and analyze data specific to their hypotheses and/or research questions.

COMM 610: 3 s.h.**Seminar in Organizational Comm**

The course introduces students to fundamental theories and issues associated with organizational communication, including organizational culture/climate as created by internal/external communication in interpersonal, small group, intercultural, and public communication contexts, exploring the impacts of communication in both face-to-face and mediated formats.

COMM 625: 3 s.h.**Intercultural Comm in Contexts**

This course is designed to introduce major theories and research dealing with communication between people of different cultural backgrounds in crisis, emergency, risk, and disaster communication contexts. It examines theoretical issues and methodological concerns in studying intercultural conflicts, problem situations, and emergency management strategies. By examining the intersections of global and local in emergent and conflict situations, students will discover and investigate questions about intercultural communication phenomena, engaging with discussions of identity, culture, context, power, history, and relationships. Students will learn a range of research tools to conduct their independent research, sharing insights and participating in intercultural dialogues, with the goal of facilitating intercultural understanding and advocating for best practices during emergency management situations.

COMM 627: 3 s.h.**Digital Advocacy**

This course focuses on the ways that digital technologies and social media increasingly shape the contemporary impact of social movements and political activism. Bringing together cultural studies approaches to communication and social movement theories with historical attention to protest and social change, this course considers what it means to 'become-activist' and how to serve as an advocate for social-political change as an ongoing aspect of one's everyday life. Hence, the course will explore matters such as commitment and participation, place and identity, conflict and group cohesion, and the social justice issues that arise in regard to race, class, gender, ethnicity, disability rights, immigration and refugees, environmentalism, animal rights, and global activism. As part of the MS program in Emergency Management, the course will also consider the impact of digital advocacy in crisis, emergency, risk and disaster contexts.

COMM 653: 3 s.h.**Applied Comm Theory**

This course is designed as an opportunity to apply communication theories, concepts, principles, pedagogies, and practices to address real-world problems in crisis, emergency, risk, and disaster contexts. Whether it is at the interpersonal, group, mediated, organizational, societal, or global level, communication theories can help postgraduate students understand and investigate important issues and concerns. While the main focus of the course is to introduce communication theories and apply them in students' experiences of crisis, risks, and emergency management, it also employs critical and practical perspectives in evaluating current theoretical trends and creating new currents of thoughts in research and paradigms. Postgraduate students will be able to apply their knowledge and skills to improve their practices during emergency management and provide valuable services to the community at large.

COMM 661: 3 s.h.**Health Communication**

This course focuses on forms and functions of communication in a variety of health care settings and on messages in human and mediated communication contexts that promote and reinforce health values, beliefs, practices, policies, and products. This course prepares students to examine the specialized research in health communication in this growing area of scholarship that receives recognition at the national level. It works to advance theory, research, teaching, and practical applications of human and mediated communication to health care and health promotion. Students will also examine how cultures influence the construction and interpretation of health-related messages. As part of the Master of Science in Emergency Management, the course will include a focus on crisis, emergency, risk, and disaster contexts.

Computer Science (CSCI)

CSCI 101: 4 s.h.**Problem Solving with Computers (G2)**

Designed to introduce concepts, techniques and history of computing to students who are not computer science majors. Emphasis on problem solving using the computer, including making calculations and presenting reports, tables and graphs based on those calculations. Collecting, storing, updating and retrieving data. Display and interpretation of information using the Internet. No credit toward computer science major.

CSCI 121: 4 s.h.**Intro to Web Programming (G2)**

Designed to introduce web programming to students who are not computer science majors. Topics include web-page design, scripting languages, graphics animation, image handling, event handling, document object model and graphical interface control objects. No credit toward computer science major. Offered periodically.

CSCI 140: 4 s.h.**Discrete Structures**

Discrete mathematical structures and their application to computer science including formal mathematical notation and proofs, algorithms, computer related arithmetic, propositional logic, predicate logic, set theory, graphics, relations and databases, functions, matrices and combinatorics. Prereq: Placement in MATH 151 or higher.

CSCI 151: 4 s.h.**Intro to Programming for Data Science I (G2)**

Introduction to computer programming for the student not intending to major in computer science or related fields. Emphasis on learning to develop programs in an appropriate programming language (currently Python) to manipulate and analyze data from domains such as science, business, engineering, and the humanities. Pre or Co-req: MATH 130 or MATH 234 or MATH 235 or MATH 333 or ECON 231 or GEOG 292 or CHEM 265 or BIOL 375. 4 s.h.

CSCI 152: 4 s.h.**Intro to Programming for Data Science II (G2)**

Continuation of CSCI 151 covering more advanced computer programming techniques with an emphasis on developing programs to manipulate and analyze real-world data from various domains including business, science, and the humanities. Topics include creating appropriate data visualizations, acquiring data from numerous sources, analyzing and cleaning data sets, drawing advanced conclusions from data and the ethics of data collection and analysis. Current language used is Python. Pre-req: C or higher in CSCI 151 or B or higher in CSCI 161 and C- or higher in MATH 130 or MATH 234 or MATH 235 or MATH 333 or ECON 231 or GEOG 292 or CHEM 265 or BIOL 375. 4 s.h.

CSCI 161: 4 s.h.**Introduction to Programming 1 (G2)**

Introduction to computer programming for the student intending to major in computer science or related fields. Emphasis on developing ability to apply problem-solving strategies to design and implement algorithms in a modern programming language. Prereq: Placement in MATH 151 or higher.

CSCI 162: 4 s.h.**Introduction to Programming 2 (G2)**

Continuation of CSCI 161 covering advanced computer programming techniques. Emphasis on object-oriented programming, specification, design, elementary data structures, and proper use of programming language and development tools. Abstract data types, classes and objects, recursion, linked lists, queues, stacks and binary trees. Prereq: C or higher in CSCI 161 or B or higher in CSCI 151.

CSCI 179: 3,4 s.h.**Experimental**

Experimental

CSCI 279: 3 s.h.**Experimental**

Experimental

CSCI 300: 3-12 s.h.**Co-Op Ed Experience in CSCI**

Co-Op Ed Experience in CSCI

CSCI 330: 4 s.h.**Programming Languages**

Introduction to the fundamental principles of programming language design, semantics, and implementation. Structure and vocabulary of modern programming languages. Programming language topics include formal semantics of programming, name binding, scope, data types, type systems, control flow, object orientation, scripting languages, functional languages, polymorphism, and concurrency. Labs and assignments will include experience in writing programs in a nonprocedural programming paradigm. Pre- or co-requisite: CSCI 362

CSCI 340: 4 s.h.**Computational Models**

Introduction to theory of computation. Topics include finite state automata, regular languages and grammars, pushdown automata, context-free languages and grammars, Turing machines, limits on algorithmic computation. Offered in spring. Prereq: C- or higher in CSCI 140, 162.

CSCI 350: 3 s.h.**Cognitive Science (P)**

Basic introduction to cognitive science. Reviews attempts to understand cognition using insights from psychology, artificial intelligence, philosophy, linguistics and the neurosciences. Examines the synthesis of those attempts in the emergent field of cognitive science. Offered periodically. Prereq: COMM 100, ENGL 110, junior status. No credit given if credit earned in PSYC/CSCI 314.

CSCI 362: 4 s.h.**Data Structures**

Abstract data types, objects, algorithm design and analysis, trees, graphs, sorting and searching. Emphasis on ADT-based and object-oriented design, incremental development and testing, and comparison of data structure implementations. Offered in fall, spring. Prereq: C- or higher in CSCI 140 and CSCI 162.

CSCI 366: 4 s.h.**Database Systems**

Introduction to building database-driven applications. Topics include data modeling, building databases, database queries, basic data management, Model View Controller design paradigm, basic database-driven application development, and non-relational database systems. Pre-req: C- or higher in CSCI 152 or 162 and CSCI 140 or MATH 120.

CSCI 370: 4 s.h.**Computer Architecture**

Structure of digital computers including register transfer notation, instruction set architecture, computer arithmetic, pipelining and parallel processors. Offered in fall. Prereq: C- or higher in CSCI 140, 162.

CSCI 375: 4 s.h.**Computer Graphics**

Theory and implementation of computer graphics. Explores each stage of the graphics pipeline through topics such as mathematical representations of positions and transformations, graphics primitives, 3D modeling, cameras, clipping, lighting, texturing, animation, and rasterization. Students build a graphics engine by iteratively replacing library code with their own work. Pre-req: MATH 304 and C- or higher in CSCI 362.

CSCI 379: 3 s.h.

Experimental
Experimental

CSCI 380: 4 s.h.**Operating Systems**

Design and implementation of operating systems including types of operating systems, file systems, resource management, concurrent processes, deadlocks, memory management techniques, processor scheduling, disk scheduling, operating system security and system administration. Students expected to develop significant operating systems programming projects. Offered in fall, spring. Prereq: C- or higher in CSCI 362, 370.

CSCI 380H: 4 s.h.**Hon: Operating Systems****CSCI 395: 4 s.h.****Computer Networks (W)**

Introduction to computer networks. Topics include network media, architecture and topology, protocols and layering, client-server models, Ethernet media and hardware, TCP/IP and other protocols, setup and system administration, application protocols and communication, network servers and services, security, data integrity, encryption, and firewalls. Offered periodically. Prereq: C- or higher in CSCI 362, ENGL 110.

CSCI 400: 3-12 s.h.**Co-Op Ed Experience in CSCI**

Co-Op Ed Experience in CSCI

CSCI 406: 1-4 s.h.**Topics in Computer Science**

This course allows students and faculty to explore various topics in computer science that are not included in other course offerings. CSCI 406 may be taken more than once for credit with departmental approval. Offered periodically. Prereq: depends on topic to be studied.

CSCI 415: 4 s.h.**Computer and Network Security**

This course is designed to introduce students to topics which include attacks, standards, data integrity, symmetric key encryption, public key encryption, authentication, electronic mail security, IP security, Web security, database security, secure electronic transactions, network management security, malicious software and firewalls. Offered periodically. Prereq: C- or higher in CSCI 362.

CSCI 419: 4 s.h.**Mobile Device App Development**

This course will provide students with the skills necessary to design, develop, and deploy mobile device applications technology. Emphasis is placed on introducing students to the development environments, software and hardware limitations, and GUI development and event handling concepts when developing code to be executed on hand held devices. This course includes a laboratory component for example using Android/Java and IOS/iPhone/iPad Apps development environments. The successful student will learn the fundamental techniques for building mobile device apps including skills to write networked mobile apps that interact with remote services such as GPS, Bluetooth services, wireless hubs and devices, and web based client/server data systems. Pre-req: C- or higher in CSCI 362

CSCI 420: 4 s.h.**Software Engineering**

Overview of software engineering concentrating on phases of the software development life cycle including agile software development processes, management, stories and features, specifications, architecture design (APIs, scalability, microservices), specification-based testing, coverage-based testing, and formal verification. Software management topics covered include source control, issue tracking, continuous integration, test automation, quality assurance, and code reviews. Pre-req: C- or higher in CSCI 330, 362 and 366

CSCI 421: 4 s.h.**Web Application Development**

Introduction to building advanced web applications using modern approaches and technologies. Course covers development of responsive web applications using current industry-leading technology stacks and cloud-based services. Topics include asynchronous programming, an overview and use of cloud services, review of full stack technology, and development of real data-driven web applications. Pre-req: C- or higher in CSCI 362 and 366

CSCI 425: 4 s.h.**Human-Computer Interaction**

Design, evaluation and implementation of interactive computing systems for human use including study of the major phenomena surrounding them. Presents a broad overview of the field with an emphasis on interface development and evaluation. Offered periodically. Prereq: C- or higher in CSCI 362 required; CSCI 380 recommended.

CSCI 435: 4 s.h.**Compiler Construction**

Students implement a compiler for a simplified modern programming language. Theory of compiler construction, including finite-state automata, LL(1) grammars and top-down parsing. Project includes lexical and syntax analysis, name storage, scope and type analysis, error recovery and code generation. Advanced topics covered as time permits, including LR(k) grammars, bottom-up parsing, compiler generators (e.g., LEX and YACC) and code optimization. Offered periodically. Prereq: C- or higher in CSCI 330, 340, 362.

CSCI 450: 4 s.h.**Artificial Intelligence (W)**

Introduction to artificial intelligence including problem solving, search, heuristic methods, machine learning, knowledge representation, natural language processing, computer vision, expert systems, theorem proving and current applications. Concepts illustrated through programs developed in LISP or Prolog. Offered periodically. Prereq: C- or higher in CSCI 362 and ENGL 110.

CSCI 452: 4 s.h.**Data Mining**

An introduction to data mining, including data cleaning, the application of statistical and machine learning techniques to discover patterns in data, and the analysis of the quality and meaning of results. Machine learning topics may include algorithms for discovering association rules, classification, prediction, and clustering. Lab assignments provide practice applying specific techniques and analyzing results. An independent project provides students with the opportunity to guide a project from data selection and cleaning through to presentation of results. Pre-req: C- or higher in CSCI 366 and MATH 235 or 333 or 335.

CSCI 452H: 4 s.h.**Hon: Data Mining**

CSCI 453: 4 s.h.**Large-Scale Data Analytics and Visualization**

A practical introduction to data analytics, visualization, and blending theory. Students will learn about and apply various clustering algorithms and techniques for dealing with noisy data, use a distributed data analytics framework, complete laboratory assignments using version control, and enforce reproducibility by having all science easily sharable. Students will become familiar with modern data analytics methods and explore real-world data sets. Visualization of results will be a large component of the course through interactive and static frameworks. Prereq: C- or higher in CSCI 366 and MATH 235 or 333 or 335.

CSCI 456: 4 s.h.**Robotics and Computer Vision**

Intelligent robotic systems that deal with the physical world through visual, acoustic or tactile sensing. Fundamentals of robot vision, including image acquisition and camera geometry, pattern recognition, representation and analysis of shape, pixel neighborhoods, connectivity, distance measures, arithmetic operations on pixels and images, computations of area, centroid, moments, axis of least inertia, correlation techniques, histogram computation, manipulation of robot end effectors, robot task coordination and simple Cartesian robot manipulation. Offered periodically. C- or higher in CSCI 362.

CSCI 467: 4 s.h.**Analysis of Algorithms**

Theory and techniques of algorithm design and analysis. For design, students will study a variety of algorithmic solutions to problems from application areas including searching, selecting, sorting, graph theory, number theory and encryption. Design paradigms, including greedy method, divide and conquer, dynamic programming, backtracking and branch-and-bound. For analysis, students will use formal techniques to classify execution time of an algorithm. Software tools are used to measure resources used by a program during execution. Offered infrequently. Prereq: C- or higher in CSCI 340.

CSCI 475: 4 s.h.**3D Game Prgrmmg/Cmptr Animation**

Provide students with skills and solid technical foundation necessary to design, develop and deploy 3D games and related entertainment technology applications. Topics include 3D game programming, 3D graphics, game design, programming video game controllers, collision detection, force and motion calculations, networking multiplayer games, manipulating sound objects, physical modeling, projectiles, particle systems, physical constraints, deformation of virtual 3D objects, surface deformation, computer animation, forward and inverse kinematics, keyframe motion capture and procedural animation, and behavior-based animation and control. Offered periodically. Prereq: C- or higher in CSCI 362.

CSCI 476: 4 s.h.**Parallel Programming**

Overview of parallel computing through study of parallel programming. Topics include message-passing, highly parallel computations, partitioning and divide-and-conquer strategies, pipelined and synchronous computations, load balancing and termination detection, programming with shared memory systems, parallel sorting algorithms, numerical algorithms, image processing, searching and optimization, and parallel programming using current technology. Offered periodically. Prereq: C- or higher in CSCI 362, 370.

CSCI 479: 3 s.h.**Experimental**

Experimental

CSCI 489: 1-4 s.h.**Honors Course**

Honors Course

CSCI 498: 1-4 s.h.**Independent Study**

Independent study is available for well-qualified students. Students who receive approval for independent study are expected to complete a significant study or project in some area of computer science. A written report is required. Prereq: departmental permission.

CSCI 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

CSCI 501: 3 s.h.**Coding for Educators**

This course is designed for k-12 teachers who have either little or no exposure to coding. Teachers will be guided to incorporate basic coding into their curriculum. This will include, introduction to computational thinking; hands-on HTML; hands-on/ unplugged coding activities; exposure and application to Scratch, Java, Python; and introduction to digital footprinting. Each teacher will create a take-home product that includes tools and coding activities that they can apply directly to their classes.

CSCI 579: 1-3 s.h.**Experimental**

Experimental Graduate Course in Computer Science

CSCI 697: 3 s.h.**Topics in Computer Science**

Topics in Computer Science

Design (DESN)

DESN 144: 3 s.h.**Digital Theory and Skills**

An introduction to the basic vocabulary and principles of visual communication and media theory, including the various roles and digital tools, skills and techniques of graphic and interactive design industry. Offered annually.

DESN 144H: 3 s.h.**H: Digital Theory and Skills****DESN 201: 3 s.h.****Understanding Web Design (G1)**

This course provides an overview of the Web design process, and is intended to familiarize students with the meaning, methods, and concepts necessary to understand Web design. The course is designed to give students the opportunity to learn and explore the resources, skills, and hands-on experience needed to design and understand the development of Web design from a user-centered design perspective.

DESN 225: 3 s.h.**Visual Storytelling and Comics (G1)**

An introduction to the vocabulary and principles of visual storytelling. Comic book history, conventions, aesthetics, and techniques will be covered in the sequential design medium. The fundamentals of the genre, including amplification through simplification, use of transitions, the passage of space and time and storytelling interpretation will be examined.

DESN 240: 3 s.h.**Typography I (G1)**

History and development of communications systems. Traces history of Western culture through study and studio practice. Includes creative design project in layout and composition. Includes criticism, analysis and evaluation. For both non-art and art majors. Offered in fall, spring.

DESN 243: 3 s.h.**Creativity, Innovation & Human-Centered Design Thinking (G1)**

Provides an overview of creativity and human-centered design approaches to identify opportunities and challenges of the 21st century. Creativity and human-centered design begins with a deep understanding of people, technology, entrepreneurship and society. Students will apply creativity and human-centered design approaches used for developing practical and innovative products, services, strategies, spaces, technology, social media, entrepreneurial endeavors, and human interactions & experiences.

DESN 244: 3 s.h.**Typography 2**

A study of the fundamental characteristics of type and communication for the electronic screen and its contrast with type for print media. The course explores typographic terminology, creation of a typeface, structure and the historical context of letterforms and their application in motion, visual and information hierarchies within the electronic screen environment. Prereq: DESN 240 or permission of the instructor. Offered annually.

DESN 246: 3 s.h.**Intro Sequence/Motion/Vis Comm**

A study of narrative structures and spatial compositions as they relate to time and sequence. Students will be introduced to the principles of time-based design, with an emphasis on research, critical analysis and concept development. Various production methods such as storyboarding and scoring will be introduced. Offered periodically. Prereq: DESN 144 (or ART 144) or permission of instructor.

DESN 247: 3 s.h.**Intro to Web, Experience and Interaction Design**

Focuses on the fundamentals of user-centered design and usability issues surrounding Web-based interfaces (Internet, PDA, cell, etc.). Examines information architecture models, content/design relationships, user behaviors, and user testing scenarios. The goal is ultimately to develop awareness of the pitfalls of poor design and usability while honing good design habits. Offered periodically. Prereq: DESN 144, ART 144 or permission of instructor.

DESN 300: 3-12 s.h.**Internship/Co-op in Design**

Internship/Co-Op experience in Design

DESN 307: 3 s.h.**Visual Communication Design History (P)**

A history of the visual elements and technological processes involved in an informed view of design from the beginning of pictographic language to the present. The course attempts to cover four main areas of investigation: an analysis of the evolution of formal or visual attributes; the relationship between design and its audience; the study of the social and economic activity of design as it is circulated in communities and across continents; and the effect of technology on the aesthetics of design.

DESN 307H: 3 s.h.**Hon: Vis Comm Design Hist (P)****DESN 332: 3 s.h.****Material Design**

This course explores material and surface pattern design as a creative endeavor while developing and reinforcing technical and conceptual skills. Emphasis will be on the use of graphic and traditional drawing methods to create unique patterns for a variety of applications including wallpaper, fabrics, furnishings, floor coverings, giftware, home and business products, wrapping paper, and more.

DESN 340: 3 s.h.**Interaction Design**

Further exploration of the principles and methodologies associated with digital media and interaction design, including complex multimedia presentations and applications for the Worldwide Web. Students will study human-factor variables of design utilizing time-based and interactive design processes, explore design as a social, cultural and political activity. Methods for analysis and production will continue to be emphasized. Offered periodically. Prereq: DESN 247, ART 247 or permission of instructor.

DESN 341: 3 s.h.**Motion Design**

Explore time-based visual communication environments. Unique conditions influencing the roles of typography, image, symbolic systems, narrative, and sound and time systems are assessed in the resolution of assigned projects. Students are exposed to the tools, theories, aesthetics and techniques used in time-based message building. Offered periodically. Prereq: DESN 246, ART 246 or permission of instructor.

DESN 342: 3 s.h.**Kinetic Design and Animation**

An examination of design animation, emphasizing 2D animation techniques such as keyframing, transition and metamorphosis, timing and expression using both hand drawn and digital techniques. Prereq: DESN 144 (formerly ART 144) or permission of instructor.

DESN 343: 3 s.h.**Experience Design (W)**

Synthesis and analysis of relevant aspects of meaningful human interactions in a networked and mediated environment, including physical, cognitive/ emotional, social, political, economic, and cultural dimensions of these interactions, and the relationships of such interactions to commerce, learning, work, play, community and gaining access to the privileges of user experience. In an exploration of language structures (storytelling) that enhance understanding and support users' objectives in a variety of contexts, students will explore the construction of verbal messages and the roles they play in defining experience. Offered periodically. Prereq: DESN 247, ART 247 or permission of instructor.

DESN 344: 3 s.h.**Visual Communication and Graphics Design 1**

An exploration of contemporary design practice and theory.

DESN 344H: 3 s.h.**H: Vis Comm and Graphics Des 1****DESN 346: 3 s.h.****Intro to Computers in Design**

Explores and develops design capabilities for graphic expression through the use of contemporary digital media. Offered periodically. Prereq: ART 133 or ART 242.

DESN 347: 3 s.h.**Design for Social Equity (D)**

Exposes students to a wide range of materials that causes them to take a more analytical and critical approach to the field of graphic and interactive design and gain a better understanding of the cultural impact they can have as designers. This will be applied to the creation of written practical design projects. Offered periodically. Prereq: DESN 144, ART 144, DESN 240, ART 240 or permission of instructor.

DESN 348: 3 s.h.**Packaging in Design**

Development of three-dimensional design solutions related to the presentation of objects and products, linked with conceptual, idea-driven design. The analysis of two-dimensional graphic applications of three-dimensional form is stressed. Offered periodically. Prereq: ART 144, DESN 144, ART 240, DESN 240 or permission of instructor.

DESN 349: 3 s.h.**Information Design (W)**

Studio exploration of various techniques and digital media appropriate for contemporary illustration. Offered periodically. Prereq: ENGL 110 and ART 144 or DESN 144 or permission of instructor.

DESN 375: 3 s.h.**Illustration**

Studio exploration of various techniques and digital media appropriate for contemporary illustration. Offered periodically. Prereq: ART 133 or 142 or permission of instructor.

DESN 379: 1-6 s.h.**Experimental**

Experimental course in Design.

DESN 444: 3 s.h.**Vis Comm and Graphics Design 2 (W)**

Continued study of visual communications with emphasis on print and digital publication design. Offered in fall and/or spring. Prereq: ART 344, DESN 344 or permission of instructor.

DESN 446: 3 s.h.**Advanced Computers In Design**

Offered in fall and/or spring. Prereq: ART 346.

DESN 447: 3 s.h.**Advanced Web Design**

Offered annually.

DESN 480: 3 s.h.**Sp Topics in Design**

Exploration of special topics in the field of Interactive and Graphic Design.

DESN 493: 3 s.h.**Capstone: Portfolio**

Capstone class for BDES or B.A. or B.F.A. student, with a concentration in graphic and interactive design. The course is designed to prepare the student for entry into the interactive and graphic design fields or graduate school. The student will create a professional-quality digital portfolio of work for entry into the interactive and graphic design fields or graduate school.

DESN 498: 1-6 s.h.**Independent Study****DESN 499: 1-4 s.h.****Departmental Honors**

Departmental Honors

Early Childhood Education (ECHD)

ECHD 511: 3 s.h.**Early Childhood Education in Today's Society**

An overview of the field of early childhood education. Historical and philosophical influences on past and current approaches to teaching young children are traced and analyzed. The developmental needs and characteristics of the young child, with emphasis on the pre-primary level, are related to current curriculum programs and practices. Emphasis is placed on the necessity of using developmentally appropriate learning materials and teaching strategies. Topical study includes concepts, definitions, child developmental theories and skills needed by today's classroom professionals. In lieu of field experiences, appropriate teaching behavior is modeled by the instructor, and actual classroom occurrences are examined through Teacher Work Sample (TWS).

ECHD 519: 3 s.h.**Seminar in Early Childhood Education**

Investigation of contemporary goals of early childhood education. Provides analysis of organizational plans, classroom environment, teaching strategies and resources, and noteworthy trends and innovations. Application to individual situations is stressed. Focus will vary. Offered periodically.

ECHD 610: 3 s.h.**Advanced Curriculum, Instruction and Assessment**

This course is designed to prepare students in the areas of curriculum, instruction, and assessment young learners (i.e., PreK – 4th Grade). The course will focus on curricular philosophy and theory, approaches to early childhood education, pedagogical content knowledge, child development, and assessment of young learners. Current research, practice, and trends in early childhood education will be considered.

ECHD 611: 3 s.h.**Affective and Psychmtr Emphasis**

Investigation of contemporary practices and research pertaining to the affective and psychomotor development of children, birth to age 8. Primarily covers emotional growth, socialization, self-concept, aesthetic awareness, physical growth and perception. Offered annually.

ECHD 613: 3 s.h.**Home, School, and Community**

Examination of current programs and recommended procedures for developing communication between home and school. Acquaints students with community resources and services available to families and teachers. Opportunities to develop a practical parent-teacher communication program for an individual teaching situation. Offered annually.

ECHD 614: 3 s.h.**Advanced Curriculum in ECHD**

Extension of basic curriculum theory and practice as it applies to programs for young children. Sources of influence on early childhood curriculum—such as professional organizations, learning theorists and historical practice—will be examined. Students analyze and revise or refine curriculum content and practices in their individual learning situations. Offered annually.

ECHD 615: 3 s.h.**Adm and Suprv of Echd Pgrms**

The role of the early childhood program administrator as an educational leader. Topics include educational decision making; program development; effective staff supervisory skills; facility management; funding sources and procedures; advocacy; and health, safety and nutrition issues. Offered periodically.

ECHD 690: 4.5-9 s.h.**Graduate Student Teaching**

This course is the student teaching experience for our Early Childhood Post Baccalaureate teacher candidates. The successful completion of this student teaching experience is required for all teacher candidates in order to be certified in the state of Pennsylvania.

ECHD 699: 3-6 s.h.**Thesis:**

Each student writes and orally defends an individual thesis of some significance in the field of early childhood education. Prereq: 24 graduate s.h.

Early Childhood Pre K- grade 4 (ERCH)

ERCH 001: 15 s.h.**Early Childhood Professional Bloc****ERCH 110: 3 s.h.****Introduction to Early Childhood Education**

Designed to provide an overview of the field of early childhood education. Historical, theoretical and philosophical influences on past and current approaches to teaching young children will be traced and analyzed. The course introduces students to the early childhood education profession, developmental characteristics of young children (birth–age 9), developmentally appropriate practices (NAEYC, 2009), and an overview of effective curriculum, instruction and assessment of young children. In the concurrent field experience, students reflect on their ability to cope with classroom reality as they affirm or change their choice of teaching as a profession. Prereq: Act 34 Clearance, Act 151 Clearance and Act 114 FBI Clearance. Offered spring, fall.

ERCH 110H: 3 s.h.**Hon: Intro Early Child Ed****ERCH 190: 3 s.h.****Introduction to Integrative STEM Pedagogy**

Serves as an introduction to students enrolled in the Integrative Science, Technology, Engineering & Math (STEM) Education Methods Minor. Students will learn basic information regarding integrative STEM education and examine various curricular models.

ERCH 225: 3 s.h.**Foundations of Reading**

Introduces topics in the field of teaching reading in early childhood, including emergent literacy, approaches to reading instruction, word recognition and vocabulary development, comprehension instruction, assessment techniques and reading instruction for the multicultural and the exceptional child. Supplemented by a field experience. Offered in fall, spring. Prereq: ELED 210 or ERCH 110, Act 34 Clearance, Act 151 Clearance and Act 114 FBI Clearance.

ERCH 290: 3 s.h.**Children's Engineering**

The intent of this course is to teach students about fundamentals of electricity, mechanisms, fluidics (liquids and gases under pressure), computer-control, and structures. Content will be delivered through a series of hands-on activities that will allow the students to immerse themselves in the content through problem-based learning by doing. Simple knowledge and skill building activities will lead to more complex open-ended problem solving and prototyping activities to build deeper understandings of scientific, technological, engineering, and mathematical (STEM) concepts for teachers of young children. Cross-listed with EDTE 290, students may not receive credit for both courses.

ERCH 300: 3-12 s.h.**Co-Op Experience in ERCH**

Co-op experience in Early Childhood Education

ERCH 315: 3 s.h.**Family & Community: Aspects of Diversity (D, W)**

A focus on collaborative relationship building between home, school and community that facilitates positive influence on the individual child's development. These collaborative relationships create an inclusive learning environment for all children, including culturally and linguistically diverse. The collaborative relationships are based on developing reciprocal communication techniques, cultural sensitivity and rapport with children and their families. Promotes effective communication and advocacy skills for students with disabilities and their families between school, agency personnel and community members. Empowerment techniques and parent workshops are developed to encourage parent involvement, with emphasis on families who traditionally have been excluded from the collaborative process in the schools and developing parental self-efficacy skills. Offered spring, fall. Prereq: ENG 110 or ENGL 110H; EDUC 220 or ERCH 225; EDFN 211, 241; Coreq: ERCH 345 and EDFN 320.

ERCH 315H: 3 s.h.**H:Fam/Commun:Aspcts of Divers (D, W)****ERCH 316: 3 s.h.****Creative Experiences for the Young Child**

An emphasis on making appropriate instructional and curricular decisions to provide creative opportunities for young children; special attention to rhythmic, aesthetic and dramatic avenues of expression; application of ideas through actual experiences with young children. Offered in fall, spring. Prereq: C- or higher in ELED 210 or ERCH 110; Act 34 Clearance, Act 151 Clearance and Act 114 FBI Clearance.

ERCH 316H: 3 s.h.**Hon: Creative Exp/Yng Chld****ERCH 345: 3 s.h.****Social Studies for the Young Learner**

Teacher candidates will apply the standards and thematic strands of social studies as defined by the National Council for the Social Studies for the PreK–4 developmental level. Emphasis is on the learner building civil competence and acquiring knowledge, skills and attitudes in civics and government, economics, history and geography. Offered in fall, spring. Prereq: EDFN 211, EDFN 241 and ERCH 225 or EDUC 220.

ERCH 345H: 3 s.h.**Hon: Social Study fo Young Lmr**

ERCH 421: 3 s.h.**Language Development & Emergent Literacy (W)**

Examines children's oral language development and its contribution to emergent literacy, the period between birth and the time when children learn to read and write in a conventional manner. Appropriate content and skill competencies will be covered. Strategies to enhance the family/ home/ school connection will be explored. A field experience will be part of this course. Prereq: admission to Advanced Professional Studies. Coreq: ERCH 496.

ERCH 421H: 3 s.h.**H:Lang Dev and Emergent Litrcy (W)****ERCH 422: 6 s.h.****Tching of Literacy, PreK-4: Process, Skills & Strategies**

This course develops pedagogy in the teaching of reading and the related language arts in grades PreK-4. Keeping with current theory that the communication processes—reading, writing, listening and speaking — cannot arbitrarily be divided, this course will present pedagogy in an interrelated and integrated format. Understandings, teaching strategies, and techniques will be consistent with the state testing system and the state standards for literacy instruction. Throughout this course, students will be expected to exhibit professional behaviors as delineated in Administrative Guidelines for the Assessment of the Professional and Ethical Dispositions of Professional Education Unit Candidates (www.millersville.edu/academics/educ/education/files/Dispositions.pdf). Students will have opportunities to establish the habit of ongoing professional growth. Offered periodically. Prereq: admission to Advanced Professional Studies. Coreqs: ERCH 455, 465, SPED 331. Credit may not be received for this course and EDUC 325.

ERCH 422H: 6 s.h.**H:Tchg Literacy PK-4****ERCH 435: 3 s.h.****Literature for the Young Child**

Prepares early childhood teacher candidates to recognize high-quality literature for children from birth to age nine. The use of literature to promote children's language, intellectual, emotional, social/moral and aesthetic/creative development is highlighted. A focus on children's response to literature is provided. Offered fall, spring. Prereq: PSYC 227; EDFN 211, 241; ERCH 225 or EDUC 220.

ERCH 435H: 3 s.h.**Hon: Lit for the Young Child****ERCH 455: 3 s.h.****Teaching Mathematics to Young Children**

Teacher candidates will apply the principles that guide all mathematics instruction as specified by the National Council of Teachers of Mathematics for the PreK through 4th-grade developmental level. Candidates will effectively deliver core mathematics content as well as have skills to stay current with the research on best practices in mathematics education. Prereq: Math 105, admission to Advanced Professional Studies. Coreq: ERCH 465, 422, SPED 331

ERCH 455H: 3 s.h.**Hon:Tchg Math/Yng Chldrn****ERCH 465: 3 s.h.****Science for the Young Learner**

Provides overview of the content and processes included in an early childhood (Pre K-4) science program. The course includes a study of methodology appropriate to the school setting. Prereq: admission to Advanced Pofessional Sstudies. Coreq: ERCH 422, 455, SPED 331.

ERCH 465H: 3 s.h.**Hnrs: Science for Yng Learner****ERCH 485: 3 s.h.****Teaching Young English Language Learners**

Prepares early childhood teacher candidates to understand the social and linguistic foundations for first and second language development in the early years. Teacher candidates will be able to apply research-based strategies for supplying first language development in the home and for preparing young learners for the transitions to schooling in a second language. Candidates will demonstrate an understanding of the resources that young learners bring to academic settings, and of ways to support young learners and their families in their adjustments to English-speaking schools. Candidates will demonstrate the ability to use assessment data to differentiate and modify instruction according to the needs of their students. Teacher candidates will be prepared to support young English language learners in their acquisition of language and content within optimal learning environments that provide meaningful access to standards-based instruction. Prereq: ENGL 110, admission to Advanced Professional Studies. Equivalent to EDUC 487, credit may not be received for both courses.

ERCH 485H: 3 s.h.**H:Tchng Young Engl Lang Learne****ERCH 489: 1-3 s.h.****Honors Course**

Early Childhood Education Honors Course

ERCH 495: 3 s.h.**Integrative STEM Practicum**

This clinical practicum course provides opportunities for teacher candidates to bridge theory and practice. Students will demonstrate and apply knowledge, skills, and dispositions related to the implementation of integrative science, technology, engineering and math (STEM) education at the pre-K to grade 4 level. Emphasis is placed on the planning, development, implementation and assessment of integrative STEM instructional activities and lessons that use problem-based and experiential learning techniques targeted for Pre-K to grade 4 students. Includes field experiences. Prerequisites ERCH 110, ERCH 190, EDTE/ ERCH 290, ITEC 344, EDTE 490 or 690 or Permission of Instructor; Advanced Professional Studies (APS) status required. Cross-listed with EDTE 495, credit may not be received for both courses.

ERCH 496: 6 s.h.**Curric, Instr & Assesss: Engaging the Young Child**

Designed to prepare teacher candidates in the general areas of curriculum, instruction, and assessment for the youngest learners (i.e., infancy-kindergarten). The course will focus on curricular philosophy and theory, approaches to early childhood education, pedagogical content knowledge, child development, and assessment of young learners. Current research, practice, and trends in early childhood education will be considered. Co-requisite for this course is ERCH 421: Language Development and Emergent Literacy. This is a six-credit course with a field experience embedded into the course.

ERCH 496H: 6 s.h.**H:Curriculum, Instrctn & Assesm****ERCH 498: 1-3 s.h.****Ind Stdy:****ERCH 499: 1-4 s.h.****Dept Hnrs:**

Earth Sciences (ESCI)

ESCI 101: 3 s.h.

Earth Systems & Natural Hazards (G2)

The scientific understanding of Earth systems as the causes of natural disasters, such as earthquakes, volcanoes, landslides, hurricanes, tornadoes, floods and tsunamis. 3 hrs. lec. Does not count toward Meteorology major.

ESCI 101H: 3 s.h.

Hon: Earth Sys/Nat Hzrds (G2)

ESCI 102: 3 s.h.

Origin and Evoltn of the Earth (G2)

The origin and evolutionary development of the universe, solar system and planet Earth. Geophysical behavior of the solid earth, including volcanism, mountain building and other manifestations of the Earth's dynamic interior. Does not count toward Meteorology major.

ESCI 104: 3 s.h.

The World Ocean (G2)

A broad overview of the biological, chemical, geological and physical characteristics of the ocean, the importance of the oceans to mankind and the environment. Does not count toward Meteorology major.

ESCI 104H: 3 s.h.

Hnrs:The World Ocean (G2)

ESCI 105: 1 s.h.

World Ocean Laboratory (G2)

Methods and techniques used in the marine sciences, including introduction to navigation, plotting and evaluation of data pertaining to salinity, temperature, dissolved oxygen, primary productivity and current velocity. 2 hrs. lab. Mandatory coreq: ESCI 104. ESCI 104/105 together constitute a single laboratory course in earth sciences for purposes of the general education curriculum. Does not count toward Meteorology major.

ESCI 107: 3 s.h.

The Atmosphere (G2)

Origin and evolution of the atmosphere; solar and terrestrial radiation; horizontal and vertical structure of the atmosphere; temperature, pressure and water in the air; vertical motion; cloud formation and cloud type; circulation systems, severe weather, climate and climate change. Does not count toward Meteorology major. Credit may not be received for ESCI 107 if ESCI 109 is taken, these are equivalent courses and will be treated as repeated course credit.

ESCI 107H: 3 s.h.

Hon: The Atmosphere (G2)

ESCI 109: 4 s.h.

Atmosphere with Lab (G2)

Origin and evolution of the atmosphere; solar and terrestrial radiation; horizontal and vertical structure of the atmosphere; temperature, pressure and water in the air; vertical motion; cloud formation and cloud type; circulation systems, severe weather, climate and climate change. Does not count toward Meteorology major. Credit may not be received for ESCI 109 if ESCI 107 is taken, these are equivalent courses and will be treated as repeated course credit.

ESCI 120: 3 s.h.

Environmental Geology (G2)

Exploration of Earth systems and their relation to society, with focus on natural hazards and natural resources. Does not count toward Meteorology major.

ESCI 121: 1 s.h.

Environmental Geology Lab (G2)

Laboratory exploration of Earth system impacts on society, human influences on Earth. Mandatory coreq. ESCI 120. ESCI 120/121 taken concurrently constitute a single laboratory course in earth science for purpose of the general education curriculum. Does not count toward Meteorology major.

ESCI 121H: 1 s.h.

Hon: Environ Geology Lab (G2)

ESCI 179: 3 s.h.

Experimental

Experimental

ESCI 202: 3 s.h.

The Earth in Space (G2)

A scientific experience directed toward an understanding of the dynamic earth, its origin and evolution and its place in the universe. Physical concepts from classical and modern physics, astronomy, cosmology, and the earth and atmospheric sciences, couched in the language of algebra and supported by observation, experiment and theory. Prereq: MATH 101 with C- or higher or MPT 151 with C- or higher, or MATH 151 or MATH 161 or MATH 163 or MATH 204 (151, 161, 163, 204, grade of C- or higher) or permission of instructor.

ESCI 221: 4 s.h.

Physical Geology (G2)

The nature and distribution of materials of the solid Earth - the dynamic processes by which they are formed and modified and the character of resulting geologic structures. 3 hrs. lec., 2 hrs. lab. Offered in fall, spring.

ESCI 221H: 4 s.h.

Hnrs:Physical Geology (G2)

ESCI 222: 4 s.h.

Historical Geology (G2, W)

Methods of interpreting the geologic rock record, chronologic study of earth history and study of fossils as records of ancient life. Emphasis on the history of North America. 3 hrs. lec., 2 hrs. lab, field trips required. Prereq: C- or higher in ESCI 221.

ESCI 222H: 4 s.h.

H:Historical Geology (G2)

ESCI 225: 3 s.h.

Geomorphology

Processes of landscape development in theory and in the context of the regional geomorphology of North America. 3 hrs. lec. Offered in fall of odd years. Prereq: C- or higher in ESCI 221.

ESCI 226: 3 s.h.

Geology of Earth and Energy Resources (G2)

Investigation of the geologic origin of Earth resources important to society (including energy resources, metals, industrial materials and evaporites); methods of resource evaluation, extraction and processing; and environmental impacts of resource extraction/use. 3 hrs. lec. Offered spring of even years.

ESCI 241: 4 s.h.

Meteorology (G2)

Atmospheric structure and motions; physics of weather processes; weather and motion systems. 3 hrs. lec., 2 hrs. lab. Coreq or Prereq: C- or higher in MATH 161 or 163H.

ESCI 245: 3 s.h.**Environmental Meteorology (G2)**

Practical meteorological problems in air pollution, atmospheric experimentation and other aspects of the human environment. Instrumentation and data analysis methods in applied meteorology. 2 hrs. lec., 2 hrs. lab. Offered in spring and online in summer. Prereq: C- or higher in MATH 110 or 160 or 161 or 163H.

ESCI 261: 4 s.h.**Introduction to Oceanography (G2)**

A survey of the field of oceanography including modern topics in the four subdisciplines of physical, geological, chemical, and biological oceanography. 3 hrs. lec., 2 hrs. lab. Overnight field trip may be required at discretion of professor. Prereq: C- or higher in MATH 101 (college algebra) or math placement into MATH 160 or higher.

ESCI 267: 3 s.h.**Field Methods in Oceanography**

Work on board small research vessels in the dynamic marine environment; use and application of standard oceanographic instruments and sampling devices; opportunities for independent research. 1 hr. lec., 4 hrs. lab. Offered only in summer at the Chincoteague Bay Field Station. Prereq: C- or higher in ESCI 261.

ESCI 279: 3 s.h.**Experimental**

Experimental

ESCI 281: 3 s.h.**GIS Applications for Earth Sci**

Introduction to the basic concepts of geospatial information systems applications for earth sciences students. Emphasis is on the use of GIS applications for solving problems in the earth sciences. Limited to earth sciences majors or minors who have completed one of the introductory earth sciences courses for majors. ESCI 281 and GEOG 295 may not both be taken for credit. 3 hrs. lec. Prereq: ESCI 221, 241 or 261.

ESCI 282: 3 s.h.**FORTTRAN Programming for Earth Sciences Applications**

Programming in computational methods emphasizing FORTRAN applied to the earth sciences; numerical solution of equations of motion; statistical properties of digital images; analysis of periodical phenomena; use of National Center for Atmospheric Research graphics library. 2 hrs. lec., 2 hrs. lab. Offered in fall. Prereq: MATH 211 and PHYS 231.

ESCI 300: 3-12 s.h.**Co-Op Ed Experience in ESCI**

Co-Op Ed Experience in ESCI

ESCI 321: 4 s.h.**Structural Geology**

Recognition, interpretation and illustration of geological structures; kinematic and dynamic analysis of rock deformation; stress, strain and deformation mechanisms. 3 hrs. lec., 3 hrs. lab., field trips required. Prereq: C- or higher in ESCI 221 and completion of MATH 160.

ESCI 322: 3 s.h.**Environmental Hydrology**

Theory and practice of quantifying hydrologic phenomena; field methods, data manipulation and environmental applications. 2 hrs. lec., 2 hrs. lab. Offered spring. Prereq: minimum of 45 credits, C- or higher in MATH 101 and any 200-level science course that counts towards a science degree, or permission of instructor.

ESCI 326: 4 s.h.**Sedimentation and Stratigraphy (W)**

The origin and composition of sediments and sedimentary rocks, study of the processes involved in the sedimentary cycle, environments of deposition, and the interpretation of ancient environments from sedimentary rocks. 3 hrs. lec., 3 hrs. lab, field trips required. Prereq: ESCI 221 and ENGL 110

ESCI 327: 4 s.h.**Earth Materials**

Identification, crystal chemistry, crystallography and occurrence of common minerals; optical theory and interaction of light with crystals; mineral and rock identification through use of transmitted polarized light; identification, formation, and occurrence of common rocks. 3 hrs. lec., 3 hrs. lab. Offered fall of odd years. Prereq: C- or higher in 221.

ESCI 329: 3 s.h.**Aqueous Geochemistry (W)**

Inorganic chemistry of surface waters; equilibrium thermodynamics, solubility and stability relationships of silicates and calcium carbonates; kinetics, acid-base reactions, redox equilibria; contaminants transport in natural waters; surficial materials weathering. 3 hrs. lec. Offered spring of odd years. Prereq: ESCI 221, CHEM 112; ENGL 110.

ESCI 340: 3 s.h.**Cloud Physics & Precip Process**

Cloud types and physical characteristics; cloud formation processes; precipitation types and formation processes; vertical stability and its relation to types of cloud and precipitation formation; lightning and other forms of atmospheric electricity; atmospheric optical phenomena such as rainbows, halos, mirages, etc. 3 hrs. lec. Prereq: C- or higher in ESCI 241, or PHYS 231. Coreq or Prereq: MATH 211.

ESCI 340H: 3 s.h.**H:Physical Meteorology****ESCI 341: 3 s.h.****Atmospheric Thermodynamics**

First and second principles of thermodynamics, water-air systems, equilibrium of small droplets and crystals, thermodynamic processes in the atmosphere, atmospheric statics, vertical stability and aerological diagrams. 3 hrs. lec. Prereq: C- or higher in ESCI 241. Coreq or Prereq: MATH 311.

ESCI 342: 3 s.h.**Atmospheric Dynamics 1**

Centered difference approximations, total derivative, and basic kinematics; fundamental and apparent forces; mass and momentum conservation; equations of motion and their applications; circulation, vorticity, and divergence. Prereq: C- or higher in ESCI 241 and PHYS 231. Coreq or Prereq: MATH 311.

ESCI 343: 3 s.h.**Atmospheric Dynamics 2**

Ageostrophic wind; quasi-geostrophic theory; theory and properties of atmospheric waves, including gravity waves, sound waves, internal waves, inertial-gravity waves; geostrophic adjustment; atmospheric instabilities, including inertial/slantwise instability, barotropic and baroclinic instability. 3 hrs. lec. Offered in spring. Prereq: ESCI 342.

ESCI 344: 3 s.h.**Tropical Meteorology**

General circulation of the tropics; energy balance; boundary layer; cumulus convection; survey of tropical disturbances including tropical cyclones. 3 hrs. lec. Prereq: C- or higher in ESCI 341, 342.

ESCI 344H: 3 s.h.**H:Tropical Meteorology**

H:Tropical Meteorology

ESCI 345: 3 s.h.**Atmospheric Radiative Transfer**

Quantitative description and analysis of atmospheric radiation and its interaction with atmospheric constituents (gases, aerosol, and clouds) and the land and ocean surfaces. Topics include properties of radiation, the electromagnetic spectrum, reflection and refraction, radiative properties of natural surfaces, thermal emission, atmospheric transmission, atmospheric emission (the Schwarzschild Equation) and absorption, scattering and absorption by molecules and particles, radiative transfer with multiple scattering, numerical modeling of atmospheric radiation, relevance for climate and weather. Prereq: C- or higher in ESCI 241, or PHYS 231. Coreq or Prereq: MATH 311.

ESCI 347: 3 s.h.**Satellite Meteorology**

Orbital and radiative transfer physics applied to satellite meteorology systems. Contemporary applications of satellite remote sensing of the atmosphere, including the retrieval of cloud microphysics and precipitation, the generation of atmospheric vertical profiles of temperature and moisture, the retrieval of wind, and image interpretation in the context of weather forecasting. 3 hrs. lec. Offered in fall of even years. Prereq: ESCI 241; MATH 161 or MATH 163.

ESCI 347H: 3 s.h.**H:Satellite Meteorology****ESCI 348: 2 s.h.****Broadcast Meteorology**

Preparation and presentation of weather information to the public; graphics preparation, television and radio weathercasting; video production. 1 hr. lec. 2 hrs. studio. Offered in spring. Prereq: C- or higher in ESCI 241 or COMM 320.

ESCI 349: 3 s.h.**Chemistry of the Atmosphere (P)**

Theory, application, methods of analysis and instrumentation relevant to a study of the chemistry of the atmosphere. 3 hrs. of integrated lecture/lab/ working group activities. May be used as an elective in meteorology and environmental chemistry if not counted as "P" course. Prereq: Minimum of 36 credit hours, COMM 100, ENGL 110; junior status; CHEM 104 or CHEM 111; and PHYS 132 or PHYS 232.

ESCI 349H: 3 s.h.**Hon: Chem of the Atmosphere (P)****ESCI 350: 3 s.h.****History of Meteorology (D, P)**

Overall intellectual and institutional development of meteorology from Aristotle to present, with emphasis on the 20th century. Historical overviews of dynamic meteorology and numerical weather prediction, observational tools (the history of radar and satellites) and computational devices, cloud microphysics and dynamics, hurricanes, convective storms and climatology. Spotlights key scientists and their role in the advancement of atmospheric sciences. 3 hrs. lec. Prereq: ESCI 107, 109, or ESCI 241; and HIST 101 or 102 or 106, or 340; COMM 100, ENGL 110 and junior status.

ESCI 350H: 3 s.h.**H:History of Meteorology (P)**

H:History of Meteorology

ESCI 362: 3 s.h.**Marine Geology**

Sedimentary and tectonic characteristics of the continental margins and deep ocean basins; principles and processes of sediment transport and deposition in the marine environment; applications of geophysical methods at sea; marine mineral resources. 3 hrs. lec. Offered only in summers of even years at the Chincoteague Bay Field Station. Prereq: C- or higher in ESCI 261 or 221.

ESCI 363: 3 s.h.**Chemical Oceanography**

Oceanic chemical phenomena, including structure of water, salinity, sources and sinks of chemical constituents; chemical interactions at interfaces between hydrosphere and atmosphere, lithosphere and biosphere; biogeochemical cycles of nutrients; the carbon-dioxide-carbonate system; origin and history of seawater; anthropogenic effects. Prereq: C- or higher in ESCI 261 and CHEM 111.

ESCI 366: 3 s.h.**Marine Resources and Policy (D, P)**

This course will give the student a broad background in Marine Resources including biological, transportation, oil and gas, methane hydrates, minerals and freshwater, recreation, endangered species, energy and waste disposal. The course will also give an overview on National and International Law Applied to the marine environment. Topics on Marine policies including marine environmental policy, International fisheries policy, Marine transportation and safety policy, etc. will be discussed and related to geographical, socio-economic and political issues affecting Marine Resources, Sustainability and Marine Conservation. News clips, articles in journals, case studies of issues relevant to the topics above will be discussed in an open, free and debate like atmosphere that is designed to develop student's critical thinking skills in a deliberate and structured way. Prereq: COMM 100 or 100H, ENGL 110 or 110H, junior standing and any 200-level course in ESCI, BIOL or GEOG.

ESCI 366H: 3 s.h.**Hon: Marine Resources/Policy (D, P)****ESCI 369: 3 s.h.****Physical Oceanography and Climate**

Physical properties of seawater; mass and energy budgets of the ocean; typical distribution of water characteristics, global balances; the conservation equations; equations of motion; fluid motion in rotating systems. Conservation of vorticity; wind and thermohaline circulation; currents and eddies; wind-generated waves; tides and other waves; Exchange of buoyancy and heat fluxes in the atmosphere-ocean boundary layer; Climate Change and the Ocean. A required course for Ocean Sciences and Coastal Studies majors and elective for other earth sciences programs. Combination of lecture and laboratory exercises. 2 hrs. lec., 2 hrs. lab. Offered in fall of odd years. Prereq: ESCI 261 or ESCI 241; MATH 161, PHYS 131 or PHYS 231, or permission of Instructor. 3.000 Credit hours 2.000 Lecture hours 2.000 Lab hours.

ESCI 379: 1-4 s.h.**Experimental**

Experimental

ESCI 380: 3 s.h.**Remote Sensing & Image Interpretation**

Principles of remote sensing; fundamentals of image visualization; radiative transfer equation; use of environmental, meteorological and oceanographic satellites; satellite algorithm and parameter estimation; use of Environment for Visualizing Images (ENVI) software for image analysis and interpretation. Basic computer literacy is assumed. 2 hrs. lec., 2 hrs. lab. Research project is required. Prereq: ESCI 221 or 241 or 261.

ESCI 382: 3 s.h.**Water Wars: Science and Policy (D, P)**

Interdisciplinary investigation of the causes and solutions of water crises. Topics such as the sources of fresh water, the use and consumption of water, and regional and international conflict over water rights will be discussed. Current water crises from across the globe will be used to highlight societal differences in water use and preservation. Prereq: Minimum of 60 credits, ENGL 110 and any ESCI course or permission of instructor.

ESCI 382H: 3 s.h.**H: Water Wars: Science & Policy (D, P)****ESCI 385: 3 s.h.****Global Climate Change: Sci & Policy (P)**

Evolution of the Earth's habitable atmosphere and oceans; mechanisms that control climate processes and change; past global climate change as deciphered through paleoclimatic and paleoceanographic methods; recent rapid climate fluctuations and possible future changes. 3 hrs. lec. Prereq: ENGL 110; ESCI 241 or 261 or GEOG 230.

ESCI 385H: 3 s.h.**H: Climate Chng: Sci & Policy (P)****ESCI 386: 3 s.h.****Sci Prg Lang:**

Use of scientific programming languages for analysis and display of data. Topics include: data types; syntax and control statement; use of plotting and graphics libraries; reading and writing data sets in ASCII, binary, NetCDF, and other formats; spectral analysis; statistical operations; matrix operations. 2 hrs. lec., 2 hrs. lab. Offered in spring. Prereq: ESCI 282 or CSCI 161; MATH 211 and PHYS 231.

ESCI 390: 1-4 s.h.**Topics in the Earth Sciences**

Detailed investigation of a topic of current research interest. Topic to be announced each time course is offered. Credit and meeting hours variable, depending on topic offered. Offered infrequently. Prereq: completion of 60 credits.

ESCI 390H: 1-4 s.h.**Hon: Topics in Earth Science****ESCI 400: 3-12 s.h.****Co-Op Ed Experience in ESCI**

Co-Op Ed Experience in ESCI

ESCI 422: 3-6 s.h.**Geological Field Mapping**

Examination and interpretation of geologic materials and structures in the field. Students prepare a geologic map, stratigraphic column and structural cross-sections of an assigned field area. Prereq: C- or higher in ESCI 321.

ESCI 423: 3 s.h.**Applied Geophysics**

Geophysical methods applied to environmental assessment, resource exploration and civil engineering issues. Topics covered include seismic refraction and reflection, ground-penetrating radar, electrical resistivity, gravity, and geomagnetism. 2 hrs. lec., 2 hrs. lab. Offered fall of even years. Prereq: minimum of 60 credits, C- or higher in MATH 101 and any 200-level science course that counts towards a science degree, or permission of instructor.

ESCI 426: 3 s.h.**Groundwater Resources and Contamination**

Occurrence and behavior of groundwater; groundwater contamination and remediation; groundwater resource assessment, including aquifer test design and analysis; introduction to groundwater modeling. 2 hrs. lec., 2 hrs. lab. Prereq: minimum of 60 credits, C- or higher in MATH 101 and any 200-level science course that counts towards a science degree, or permission of instructor.

ESCI 428: 3 s.h.**Planetary Geology (W)**

Terrestrial geology in the context of the solar system; geochemical evolution of the solar nebula; planetary formation and evolution; comparative planetology, meteoritics; asteroid/cometary impact phenomena. 3 hrs. lec. Offered infrequently. Prereq: ENGL 110, ESCI 222 and CHEM 111.

ESCI 440: 3 s.h.**Space Weather and Environment**

In-depth study of the space environment between the earth and sun; solar-terrestrial interactions; physics of the sun and space weather; observations, modeling and prediction of space weather events; effects on life, property and infrastructure. 3 hrs. lec. Offered in spring of even years. Coreq: MATH 365; Prereq: ESCI 342 and either ESCI 340 or PHYS 233 or permission of instructor.

ESCI 440H: 3 s.h.**Hon: Space Weather/Environmt****ESCI 441: 3 s.h.****Synoptic Meteorology Lecture-Laboratory**

Application of atmospheric dynamics and atmospheric physics to the theoretical and empirical investigation of mid-latitude synoptic-scale meteorological processes. Topics include the diagnosis of synoptic-scale vertical motions, the circulation at fronts and the life cycle of the extratropical cyclone. 3 hrs. lec., 3 hrs. lab. Offered in fall. Prereq: ESCI 340, 341, 343.

ESCI 442: 2 s.h.**Adv Wthr Anlys/Forecstng Pract**

Advanced synoptic and mesoscale weather analysis and forecasting skills. Students perform weather analysis exercises designed to complement the forecast process. Students prepare probabilistic meteorological forecasts and lead post-forecast discussions focused on lessons learned. 1 hr. lec., 2 hrs. lab. Offered in spring. Prereq: C- or higher in ESCI 441 and one semester of Campus Weather Service or by permission of instructor. Coreq: ESCI 444.

ESCI 443: 3 s.h.**Climate Dynamics (W)**

A comprehensive treatment of the components of the climate system, feedback mechanisms and interactions; mean state of the climate system; a detailed and in-depth treatment of the earth-atmosphere radiation balance and general circulation; natural and anthropogenic forcings and their effect on the climate system; climate models; and the current state of climate-observing networks and model validation. 2 hrs. lec., 2 hrs. applications and analysis. Offered in spring. Prereq: ESCI 343 or 369, ENGL 110.

ESCI 444: 4 s.h.**Mesoscale Meteorology**

Application of atmospheric dynamics and atmospheric physics to the theoretical and empirical investigation of mid-latitude mesoscale meteorological processes. Topics include atmospheric sounding analysis, pressure perturbations, mesoscale instabilities, the atmospheric boundary layer, air mass boundaries, convection initiation, organization of convection and tornadoes. 4 hrs. lec. Prereq: ESCI 441.

ESCI 445: 3 s.h.**Num Modeling of Atmos and Ocn**

Methods and mathematical concepts of numerical weather and ocean prediction models. Students must be able to program in one of the following languages: Fortran, C++, or IDL. 3 hrs. lec. Offered in spring of odd-numbered years. Prereq: ESCI 282 or CSCI 161. Coreq or Prereq: ESCI 343 or 365.

ESCI 446: 3 s.h.**Stats & Decision Making in Earth Science**

Descriptive and inference statistics, uncertainty, review of probability, empirical distributions, exploratory data analysis, parametric probability distributions, frequency and Bayesian inference, statistical forecasting and forecast verification, statistics in decision making, time series, multivariate statistics and normal distribution (MVN), principal component analysis (EOF), canonical correlation analysis (CCA), discriminant analysis, cluster analysis, thriving on the edge of chaos, effective complexity. Pre-req: C- or higher in MATH 211

ESCI 447: 3 s.h.**Meteorological Instrumentation (W)**

Devices and platforms used to gather meteorological data; methods of data acquisition, reduction, error analysis and quality assurance; description of instrumentation, measurement techniques, observing systems and their deployment. 2 hrs. lec., 2 hrs. lab. Offered in fall of odd years. Prereq: ENGL 110, PHYS 232 and MATH 235.

ESCI 447H: 3 s.h.**H:Meteorological Instrumentati (W)****ESCI 448: 3 s.h.****Boundary Layers and Turbulence**

Mean boundary layer characteristics; turbulence and its spectrum; governing equations to turbulent flow; prognostic equations for turbulent fluxes and variances; TKE; turbulence closure schemes; similarity theory; simulation techniques; convective and stable boundary layers; boundary layer clouds. 3 hrs. lec. Offered in spring of even years. Prereq: C- or higher in ESCI 342 and MATH 211.

ESCI 449: 3 s.h.**Radar Meteorology**

Algorithms used in the display and interpretation of weather radar data; theory of electromagnetic radiation, principles of radar operation, Doppler radar and interpretation techniques; wind velocity, rainfall rates and detection of individual cells, multiple cells and turbulence. 3 hrs. lec. Offered in spring of even years. Prereq: C- or higher in ESCI 241, MATH 311. Coreq or Prereq: ESCI 342.

ESCI 449H: 3 s.h.**Hon: Radar Meteorology****ESCI 464: 3 s.h.****Ocean Ecosystems (W)**

Advanced ocean sciences course investigating the physical, chemical and biological characteristics of the major pelagic ocean biomes from the polar through equatorial regions of the world ocean. Emphasis will be on the important marine plankton functional groups and how their abundances and rates of production are controlled by the circulation patterns of the ocean, ocean turbulence, food web structure, density stratification, the supply of nutrients and the availability of sunlight, and water transparency. 3 hrs. lec. Prereq: ESCI 363 and ESCI 369 or permission of instructor.

ESCI 465: 3 s.h.**Biological Oceanography**

Intensive summer lecture and field course teaching the physical, chemical and biological factors controlling the structure and dynamics of marine ecosystems. Classroom instruction focuses on theoretical principles concerning the environmental control of phytoplankton communities by sunlight, nutrients and grazing. The dynamics and complexity of marine food webs including the phytoplankton, zooplankton and upper trophic levels. Laboratory and field instruction focuses on ocean monitoring and sampling from research vessels, biomass determination and identification of key plankton species, measurement of the rates of net and gross primary production using oxygen light-dark bottle experiments, and optical and chemical techniques of determining phytoplankton biomass and species composition. Approximately 40-50% of course time is spent in field. Prerequisites: C- or higher in ESCI 261 and completion of BIOL (211 or 221), or permission of instructor.

ESCI 466: 3 s.h.**Environmental Oceanography**

A comprehensive examination of some of the pressing ocean-related environmental issues of the 21st century using critical thinking and quantitative approaches. Emphasis on how human activities are changing ocean ecosystems and environments, and how sound scientific reasoning can reveal true cause-and-effect relationships that then may lead to viable solutions. Includes field and laboratory projects teaching modern techniques of water quality analysis, and case studies of provocative real-world marine environmental problems. 2 hrs. lec., 2 hrs lab. Prereq: ESCI 261 or permission of the instructor.

ESCI 468: 3 s.h.**Ocean Data Analysis and Presentation**

Advanced ocean sciences course covering the theory behind the most commonly used techniques of ocean sampling and the analysis and presentation of oceanographic data. In this course we will cover the meaning of data and the common types of oceanographic data, methods of ocean data collection, the meaning and importance of metadata, databases in ocean science community, the idea of geospatial data and the importance of frame of reference and time and space scales of interest, the variety of ways to analyze and present oceanographic data, and how to present data to maximize its informational content. 2 hrs. lec., 2 hrs. lab. Prereq: ESCI 261 or permission of instructor.

ESCI 479: 4 s.h.**Experimental**

Experimental

ESCI 489: 1-4 s.h.**Honors Course**

Honors Course

ESCI 498: 1-4 s.h.**Independent Study**

Supervised independent research in the earth sciences. Subject determined jointly by student and the problem supervisor. Permission of department chair and school dean required.

ESCI 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

ESCI 500: 3-12 s.h.**Co-Op Ed Experience in ESCI**

Co-Op Ed Experience in ESCI

ESCI 522: 3 s.h.**Environmental Hydrology**

Theory and practice of quantifying hydrologic phenomena; field methods, data manipulation and environmental applications. 2 hrs. lec., 2 hrs. lab. Offered spring semesters.

ESCI 579: 1-4 s.h.**Experimental**

Experimental

Economics (ECON)

ECON 100: 3 s.h.**Introductory Economics (G3)**

Introduction to economics as a social science for nonmajors or students interested in taking ECON 101 or 102 who would like a preparatory course. Introduction to fundamental economic concepts, economic policy and global markets. Class activities and simulations complement an emphasis on current events. No credit towards an economics major or minor or BSE social studies major. Offered periodically.

ECON 101: 3 s.h.**Principles of Macroeconomics (G3)**

Introduction to macroeconomic analysis concentrating on national income, price levels, employment, monetary policy and fiscal policy with introductory analysis of the global economy. To be successful, it is recommended that students be proficient in algebra (the equivalent of successfully completing MATH 101 or MPT equivalent); however MATH 101 is not a pre-requisite. Offered in fall, spring.

ECON 101H: 3 s.h.**Hnrs:Prin of Macroeconomics (G3)**

Hnrs:Prin of Macroeconomics

ECON 102: 3 s.h.**Principles of Microeconomics (G3)**

Introduction to microeconomic analysis concentrating on consumer and producer behavior, competitive and other markets, public policy and government regulation. To be successful, it is recommended that students be proficient in algebra (the equivalent of successfully completing MATH 101 or MPT equivalent); however MATH 101 is not a pre-requisite. Offered in fall, spring.

ECON 102H: 3 s.h.**Hnrs:Prin of Microeconomics (G3)**

Hnrs:Prin of Microeconomics

ECON 179: 3 s.h.**Experimental**

Experimental

ECON 203: 3 s.h.**Introduction to World Economy (G3)**

An introductory course analyzing and comparing global economies, trade and economic development. This course does not count toward the major, but qualifies for BSE social studies major and for the minor. MATH 101 or MPT equivalent is highly recommended prior to taking this course. Offered in fall, spring. Prereq: ECON 100, 101 or 102.

ECON 215: 3 s.h.**Money, Credit, and Banking (G3)**

Survey of monetary and banking institutions, policies and practices, including study of monetary theory. Offered in fall, occasionally in spring. Prereq: ECON 101.

ECON 225: 3 s.h.**Comparative Economic Systems (G3, W)**

Analysis of economic systems in France, the former Yugoslavia, China, Japan, the United Kingdom, the former Soviet Union and the United States. Emphasis varies with each offering at the discretion of the instructor. Offered in spring. Prereq: ECON 101, ENGL 110.

ECON 226: 3 s.h.**Area Studies (G3)**

Analysis of regional economies such as Africa, Asia or Latin America. The area of study will be specified by the instructor expected to teach the course. Offered periodically. Prereq: ECON 101 or 102.

ECON 231: 3 s.h.**Applied Statistics 1 (G3)**

Presentations of data, measures of central tendency and variation, and index numbers. Introduction to probability theory, sampling and inference and regression and time series analysis. Offered in fall, spring.

ECON 231H: 3 s.h.**Hon: Applied Statistics 1 (G3)****ECON 235: 3 s.h.****Mathematical Economics**

Static analysis in economics, consumer and firm equilibrium, marginal analysis, optimization problems. Preliminary use of algebra and calculus for business and economic applications. Offered infrequently. Prereq: ECON 101, 102; MATH 101 or equivalent.

ECON 246: 3 s.h.**Econ Health and Welfare Prgm (G3)**

Analysis of consumer theory, firm theory and market failure within the context of health economics. Emphasis on the institutions involved in health care provision, labor markets for health care professionals and market structure and government regulation. Offered in fall. Prereq: ECON 102.

ECON 300: 3-12 s.h.**Co-Op Ed Experience in Econ**

Co-Op Ed Experience in Econ

ECON 305: 3 s.h.**Economics in Film (D, W)**

This course utilizes film as a bridge between real economic life and scholarly treatment of the relevant issues. The course emphasizes critical thinking and synthesis of economic ideas. Students must also engage in questioning the obvious, exploring meaning, and writing about issues from films incisively and analytically following the scientific method.

While maintaining rigor in their writing, students must state clearly their hypothesis and empirical methodology. Data collection includes primary data, surveys, personal interviews, and focus groups (culturally diverse groups related to the underlying socioeconomic issue). Prereq: ECON 100 or 101 or 102; COMM 100; ENGL 110 and junior status.

ECON 307: 3 s.h.**Environmental Economics (G3, W)**

Microeconomic theory applied to the problems of pollution control, sustainability, and valuation of environmental goods and services. Topics include economic efficiency, externalities, public goods, benefit-cost analysis and environmental policy. Content includes economic theory, critical analysis, and problem solving applied to applications of economic efficiency, welfare analysis, and optimal pollution abatement policy. Offered in spring. Prereq: ECON 102, ENGL 110, and Math 101 or MATH placement beyond MATH 101 (MATH 151, 155H, 160, 161, 163H)

ECON 310: 3 s.h.**Economics of Justice (P)**

Economic concepts and models are used to explain laws and legal situations. Economics is applied in some of the principal areas of the law: property, contracts, torts and crime. Offered infrequently. Prereq: ENGL 110, COMM 100, junior status, ECON 102, BUAD 202, or permission of instructor.

ECON 316: 3 s.h.**Public Finance (G3)**

Economic aspects of governmental budgeting emphasizing fiscal policy including impact of taxation and expenditures. Topics include the allocation, distribution and stabilization effects of the public household. Offered in spring. Prereq: ECON 101, 102.

ECON 318: 3 s.h.**Intermediate Microeconomics (G3)**

Similar in scope to ECON 102 with major emphasis on the further development and refinement of tools of economic analysis. Offered in spring. Prereq: ECON 101, 102 and MATH 151 or 161.

ECON 318H: 3 s.h.**H:Intermediate Microeconomics (G3)****ECON 319: 3 s.h.****Intermediate Macroeconomics (G3)**

Similar in scope to 101, with major emphasis on the determination of the economy's total output, the price level and the level of employment. The course incorporates the interaction of the market for goods and services, the assets market and the labor market. Offered in fall. Prereq: ECON 101.

ECON 323: 3 s.h.**Games and Experiments in Econ (G3)**

This course presents how economic theory is used to explain decisions of economic agents (e.g., consumers, firms or the government) in markets and strategic environments where the outcomes depend on the interaction of the decisions of the agents. Tests of economic theory predictions in the form of laboratory experiments will also be discussed and implemented. The areas of study include market behavior under various institutional settings, allocation decisions in settings with externalities, and individual choice and uncertainty. Offered annually. Prereq: ECON 102 or 102H, and ENGL 110.

ECON 325: 3 s.h.**International Economics (G3)**

Theory of international trade, commercial policy and trade in relation to economic development, balance of payments and the foreign exchange market, international monetary developments, foreign aid and economic growth. Offered in spring. Prereq: ECON 101, 102.

ECON 325H: 3 s.h.**Hon: Intl Economics (G3)****ECON 326: 3 s.h.****Economic Growth and Development (G3)**

Introduction to economic characteristics and problems of less developed countries and to associated theories and policies. Offered annually. Prereq: ECON 101, 102; ENGL 110.

ECON 327: 3 s.h.**Women and Global Econ Develop (D, P)**

Theoretical and case-based examination of women in the political economy of "less developed" economies. Issues covered include women's experiences with economic development; effects of economic development on women's status, roles, workloads and resource access; effective methods of empowerment for women experiencing contemporary economic development; and targeting gender in development, particularly through grassroots efforts. Offered annually. Prereq: ECON 101 or 102, COMM 100, ENGL 110, junior status.

ECON 333: 3 s.h.**Econometrics**

The estimation and hypothesis-testing of economic models, principally using regression techniques. Topics include linear models, time series analysis and simultaneous equations models. The uses and limitations of these models for economic forecasting are examined with the aid of computers. Offered in spring. Prereq: ECON 101, 102 and either 231 or 332.

ECON 333H: 3 s.h.**H:Econometrics****ECON 335: 3 s.h.****Forecasting and Analytics (G3)**

Emphasis is on authentic learning of the forecasting and analytics methods that practitioners have found most useful. Prereq: ECON 231 or MATH 235, and ECON 101.

ECON 345: 3 s.h.**Labor Economics (G3)**

The labor market and labor forces, theories of wages and employment, security, determinants of trade union policy and governmental manpower policies. Offered in spring. Prereq: ECON 101, 102.

ECON 345H: 3 s.h.**HNRS:Labor Economics (G3)**

ECON 355: 3 s.h.**Econ of Sex, Drugs, & Religion (G3, P)**

This course applies consumer theory, firm theory, and market failure to the economics of social issues via the broad, and often controversial, topics of sex, drugs, and religion. Emphasis is placed on the current economic, political, and legal aspects of these issues and therefore specific topics may change depending on current events. Students will explore these topics and lessons via research articles published in academic journals and by research published by the top economic research organizations. Prerequisites: ECON 102 and MATH 101 or math placement beyond 101, MATH 130 or equivalent.

ECON 365: 3 s.h.**History of Economic Thought (G3)**

Examination of a variety of theoretical and philosophical perspectives in economics developed during the past few hundred years. The ideas of well-known economists such as Adam Smith and Karl Marx are typically analyzed, as is the thought of a selection of lesser known contributors to the discipline. Offered once every two years. Prereq: ECON 101, 102.

ECON 375: 3 s.h.**Econ of Industrial Organization (G3)**

The study of (1) how enterprises function within a variety of market structures and (2) how well the outcomes fit the public interest. Specific topics include market share, barriers, concentration, vertical power, economies of scale, pricing behavior, mergers and efficiency. Offered in spring. Prereq: ECON 101 and 102.

ECON 379: 3 s.h.**Experimental**

Experimental

ECON 400: 3-12 s.h.**Co-Op Ed Experience in Econ**

Co-Op Ed Experience in Econ

ECON 479: 3 s.h.**Experimental**

Experimental

ECON 488: 3 s.h.**Seminar in Economics (W)**

Students participate in the process of knowledge creation by generating a research question in economics and undertaking in-depth analysis of that question. The course is structured to support student development and application of critical analytical skills through theoretical and/or empirical methods, research and information management skills, and writing and presentation skills. The course emphasizes the process of research and writing, culminating in three final products: the paper, the poster and the presentation. Majors only. Offered annually. Prereq: ENGL 110, minimum 12 hours of economics or permission of instructor.

ECON 489: 1-4 s.h.**Honors Course**

Honors Courses/Thesis

ECON 498: 1-3 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

ECON 499: 1-4 s.h.**Departmental Honors**

Honors Courses/Thesis

ECON 500: 3-12 s.h.**Co-Op Ed Experience in Econ**

Co-Op Ed Experience in Econ

ECON 507: 3 s.h.**Environmental Econ and Policy****ECON 579: 3 s.h.****Experimental**

Educ Curriculum & Instruction (EDCI)

EDCI 700: 3 s.h.**The Mentoring Teacher**

This course is designed to adequately prepare cooperating teachers (mentor teachers) to observe, analyze, guide and evaluate the field experiences of teacher candidates as they serve students with and without disabilities. The course presents a formal program for cooperating teachers, including strategies for the effective interaction with student teachers as well as crucial techniques of observation, supervision and evaluation. The course creates opportunities for the cooperating teacher to prepare for the responsibilities of the mentoring role. Understanding the evaluation processes, completing online evaluations, understanding the candidate's developmental process and the efficient use of mediation and collaboration are detailed and planned. The best strategies for partnering with university faculty are considered in relation to each specific environment. Establishing expectations and environmental influences aimed at the teacher candidate's development are detailed and codeveloped. Offered in summer.

EDCI 799: 3,6 s.h.**Applied Supervision**

A field-based experience designed to develop the candidate's leadership abilities K-12. Comprehensive involvement in on-site activities, including classroom observations K-12, required research, policy and skill competencies. Specific activities include the demonstration of effective communication, staff development, budgeting and the ability to integrate curriculum across disciplines K-12, in addition to other activities at the elementary and secondary levels. The field experience demands a high degree of cooperation between the University and the school where the student is employed or assigned.

Education (EDUC)

EDUC 179: 3 s.h.**Experimental**

Experimental

EDUC 279: 3 s.h.**Experimental**

Experimental

EDUC 305: 1,3 s.h.**Field Experience**

Specific work and study assignments constituting the field experience will be developed. Regular discussions, conferences and group seminars will be conducted by faculty members and field supervisors to clarify generalizations that link practice to theory. In most instances the assignments will be in public schools; however, social agencies may be included in this practicum program. Offered in fall, spring.

EDUC 325: 3 s.h.**The Teaching of Literacy: Processes, Skills, & Strategies**

This course integrates the teaching of the four communication skills: reading, writing, listening and speaking in the pre-K through 12th grade classroom. The teaching strategies and techniques that will be presented in this course are consistent with national and state standards, assessments and curriculum frameworks. Course content will be consistent with the Pennsylvania Core Standards for each of these subject areas. Credit may not be received for this course and ERCH 422. Reserved for Special Education Majors. Pre-req: ERCH 225

EDUC 330: 3 s.h.**LGBTQ+ Issues in Education (P)**

Provides an overview of past, current, and emerging LGBTQ+ issues, policies, and advocacy in P-12 and higher education. Investigates these issues from a variety of historical, cultural, and theoretical perspectives.

EDUC 379: 3 s.h.**Experimental**

Experimental

EDUC 403: 3 s.h.**Pluralism in Society (D, P)**

Provides historical and present day information about different racial, cultural, and linguistic groups represented in our society. It explores the challenge of providing an equitable and effective education to all and provides strategies that can be used to deal with cultural issues in society. Prereq: ENGL 110 and Junior Standing (60 credits)

EDUC 403H: 3 s.h.**Hon: Pluralism in Society (D, P)****EDUC 424: 3 s.h.****Diagnostic Reading Disability (W)**

The first of two elective courses in diagnostic reading for undergraduate students will be an introduction to various formal and informal means to assess the reading strengths and needs of children. Offered in fall, spring. Prereq: EDUC 220 or ERCH 225, ENGL 110.

EDUC 424H: 3 s.h.**H:Diagnostic Reading Disability (W)**

H:Diagnostic Reading Disability

EDUC 433: 3 s.h.**Gender and Race Issues (D, P)**

Children's literature will be examined in light of recent psychological, sociological and educational research on sexism and racism. Offered in fall, spring. Prereq: COMM 100, ENGL 110, junior status.

EDUC 433H: 3 s.h.**Hnrs:Gender And Race Issues (P)**

Hnrs:Gender And Race Issues

EDUC 461: 3 s.h.**Second Language Acquisition: Theory, Programs, and Assessment**

Provides prospective and practicing teachers with a foundational understanding of English language structure, first and second language acquisition, and oral language assessment methods for K-12 classrooms. Historical and evolving legislative policies and programs related to schooling and English language learners in the U.S. Prereq: admission to Advanced Professional Studies.

EDUC 462: 3 s.h.**Methods for Teaching English Language Learners**

Provides prospective and practicing teachers with an opportunity to apply theoretical foundations of second language acquisition to teaching in the classroom. Methods for developing English language learners' conversational and academic language, as well as strategies for learning in the content areas.

EDUC 463: 3 s.h.**Linguistic and Cultural Diversity in the Classroom**

Examines U.S. and world cultures, sources of cross-cultural conflict and approaches to cross-cultural conflict resolution as it relates to K-12 settings. Explores approaches for creating classrooms that promote equity and an appreciation for diversity.

EDUC 464: 3 s.h.**Assessment, Policies and Practices in Teaching English Language Learners**

Focuses on the use of various tools in assessing and planning for the linguistic and instructional needs of English learners. Contains a public school field experience component where participants apply methods and principles for supporting English language learners in K-12 settings. Examines state and federal policies as they relate to schooling and English learners.

EDUC 475: 3 s.h.**Current Trends in Education**

A survey of current and future curricular and instructional trends in education. Emphasis on identification, examination and evaluation of topics, methods, strategies and issues affecting teaching and learning. Offered infrequently.

EDUC 479: 2,3 s.h.**Experimental**

Experimental

EDUC 486: 3 s.h.**Topics In Education**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics/methods will vary according to the needs of students and faculty. Offered infrequently.

EDUC 486H: 3 s.h.**HNRS:Topics in Education****EDUC 487: 3 s.h.****Teaching English Learners**

This course prepares teacher candidates to understand cross-cultural and linguistic foundations of acquiring a new language. Teacher candidates will apply research-based strategies for providing English learners (ELs) optimal learning environments that provide meaningful access to standards-based instruction. Candidates will demonstrate the ability to use assessment data to differentiate and modify instruction. Candidates will also demonstrate an understanding of schools' legal responsibilities toward ELLs and their families. Equivalent to ERCH 485, credit may not be earned for both courses.

EDUC 498: 1-4 s.h.**Independent Study**

EDUC 533: 3 s.h.**Nonfiction Lit and Literacy**

This course offers an in-depth look at nonfiction literature written for children and young adolescents. The communication of ideas through visuals and print in books and biographies will be highlighted. Topics include evaluation and selection of books, models for student writing, visual literacy and student response to nonfiction. Prereq: Survey course in children's literature or permission of instructor. Offered periodically.

EDUC 535: 3 s.h.**Children's Literature and Creative Experiences for Young Children and Adolescents**

This course introduces the genres of literature for children and young adolescents from birth through early adolescence. Students examine the work of renowned authors and illustrators. Response to literature and the selection of books for the classroom receive emphasis. Emphasis on making appropriate instructional and curricular decisions to provide creative opportunities for young children; special attention to rhythmic, aesthetic, and dramatic avenues of expression; application of ideas through actual experiences with young children.

EDUC 536: 3 s.h.**Picture Book Communication**

Examines the unique qualities of communication in picture books. Book design, illustration, verbal-visual integration, renowned illustrators and children's responses to picture books receive in-depth attention. Exploration of picture books for all ages will occur. Before enrolling, students must have completed a survey course in children's literature. Offered periodically.

EDUC 561: 3 s.h.**Second Language Acquisition: Theory, Programs & Assessment**

Provides prospective and practicing teachers with a foundational understanding of English language structure, first and second language acquisition, and oral language assessment methods for K-12 classrooms. Historical and evolving legislative policies and programs related to schooling and English language learners in the U.S. Offered annually.

EDUC 562: 3 s.h.**Methods for Teaching English Language Learners**

Provides prospective and practicing teachers with an opportunity to apply theoretical foundations of second language acquisition to teaching in the classroom. Methods for developing English language learners' conversational and academic language, as well as strategies for learning in the content areas. Prereq: EDUC 561. Offered annually.

EDUC 563: 3 s.h.**Linguistic and Cultural Diversity in the Classroom**

Examines U.S. and world cultures, sources of cross-cultural conflict and approaches to cross-cultural conflict resolution as it relates to K-12 settings. Explores approaches for creating classrooms that promote equity and an appreciation for diversity. Offered annually.

EDUC 564: 3 s.h.**Assessment, Policies & Practice in Teaching of English Language Learners**

Focuses on the use of various tools in assessing and planning for the linguistic and instructional needs of English learners. Contains a public school field experience component where participants apply methods and principles for supporting English language learners in K-12 settings. Examines state and federal policies as they relate to schooling and English language learners. Prereq: EDUC 561 or 562. Offered annually.

EDUC 565: 6 s.h.**Language & Literacy Interventions: Clinical Practicum**

Application of literacy theory and knowledge of effective researchbased instruction. Assessment of English language learners. Acquisition of academic vocabulary, instructional strategies for teaching content area vocabulary and text, and use of interventions in a clinical setting. Prereq: EDUC 561, 562, 563 and 564 or permission of instructor. Offered annually.

EDUC 575: 3 s.h.**Current Trends in Education**

A survey of current and future curricular and instructional trends in education. Emphasis on identification, examination and evaluation of topics, methods, strategies and issues affecting teaching and learning. Offered periodically.

EDUC 580: 3 s.h.**Methods for Teaching English Language Learners**

This course prepares initial teacher certification candidates to understand cross-cultural and linguistic foundations of acquiring a new language. Teacher candidates will apply research-based strategies for providing English language learners optimal learning environments that provide meaningful access to standards-based instruction. Candidates will demonstrate the ability to use assessment data to differentiate and modify instruction. Candidates will also demonstrate an understanding of schools' legal responsibilities toward ELLs and their families. This course includes a field component. Clearances for all course participants must be up to date and filed with the Field Services office. Restricted to Post-Baccalaureate Certification students.

EDUC 586: 1-3 s.h.**Topics in Elementary Education**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods used will vary according to the needs of students and faculty involved. Offered periodically.

EDUC 587: 1-3 s.h.**Topics in Elementary Education**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods used will vary according to the needs of students and faculty involved. Offered periodically.

EDUC 588: 1-3 s.h.**Topics in Elementary Education**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods used will vary according to the needs of students and faculty involved. Offered periodically.

EDUC 589: 1-3 s.h.**Topics in Elementary Education**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods used will vary according to the needs of students and faculty involved. Offered periodically.

EDUC 610: 3 s.h.**Critical Literacy**

Development of a personal perspective of critical literacy, encompassing reading, writing, speaking and listening. Consideration of literacy as cultural social practice, comparison of multiple perspectives, and implications as to how educators define literacy. Knowledge of how adolescent students use literacy to make meaning of text in multiple contexts, including content area material. Application of assessment tools to determine practical strategies to develop students' literacy skills. Offered infrequently.

EDUC 631: 3 s.h.**Linguistic Foundations**

Survey of the science of language and ways in which it can enrich the teaching of language. Offered periodically.

EDUC 634: 3 s.h.**Realism in Child Literature**

Examines the realistic treatments of topics in fiction and nonfiction for children and the issues that they raise. Censorship will be explored, and procedures for addressing it will be examined. Offered periodically.

EDUC 635: 3 s.h.**Folk Literature**

Designed to provide opportunities for teachers, librarians and interested members of the community to explore the realm of traditional literature appropriate for use in the educational curriculum and cultural arts programs. It allows participants to achieve an understanding of the purpose and history of oral literature, as well as its modern educational and social applications. Offered periodically.

EDUC 636: 3 s.h.**Literature and Response**

Examines literature for children and adolescents and their responses to it. Students investigate the influences upon and patterns of response, including motor, oral, written and expressive-art response, and the authentic assessment of it. Literature in all genres will be read. Students should possess a working knowledge of contemporary children's literature. Course is intended for students who have completed a survey course in children's literature. Offered annually.

EDUC 641: 3 s.h.**Social Studies Elementary Sch**

An overall view of social studies in the elementary school curriculum. Investigation of the role it plays and the methods and strategies appropriate for elementary school children. Offered in summer.

EDUC 643: 3 s.h.**Curriculum Trends in Social Studies**

Study of significant trends in social studies education that are a result of the many social issues in our society. Emphasis on content and methodology appropriate for Social Studies education. Offered infrequently.

EDUC 651: 3 s.h.**Math in the School Program**

The nature of mathematics and mathematical thought processes; current views on the learning and teaching of mathematics; problem solving; aids to instruction; instructional strategies in mathematics education. Offered in summer.

EDUC 658: 3,6 s.h.**Seminar in School Math Educ**

Examination of critical issues, research studies and individual research problems. Prereq: EDUC 651 or permission of instructor. Offered periodically.

EDUC 661: 3 s.h.**Science in the School Program**

The nature of science and science thought processes; current views on learning and teaching science; analysis and critical evaluation in developing science for children. Offered in summer.

EDUC 668: 3 s.h.**Seminar in School Science**

Examination of critical issues, research studies and individual research problems in the teaching of science in the schools. Offered periodically.

EDUC 671: 3 s.h.**Curriculum Development in the School**

Developing curriculum in theory and practice for subject areas. Emphasis is on critiquing planned programs of study and articulating a personal philosophy of curriculum design. Offered annually.

EDUC 672: 6,12 s.h.**Cooperating Tchr in Schools**

Examination of issues involved in supervision of preservice teachers. Includes supervision of student teachers. Prereq: Teacher certification. Offered infrequently.

EDUC 680: 3 s.h.**Standards Aligned Systems**

This course will examine the Pennsylvania Standards Aligned System (SAS) components and tools. Resources from the SAS Portal will be used for curriculum alignment and the development of classroom based instructional materials. A research-based framework for constructivist instruction will be explored to develop more thoughtful practitioners. Coursework will be aligned with the Pennsylvania Common Core Standards.

EDUC 686: 1-3 s.h.**Topics in Elementary Education**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods used will vary according to the needs of students and faculty involved. Offered periodically.

EDUC 687: 1-3 s.h.**Topics in Elementary Education**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods used will vary according to the needs of students and faculty involved. Offered periodically.

EDUC 688: 1-3 s.h.**Topics in Elementary Education**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods used will vary according to the needs of students and faculty involved. Offered periodically.

EDUC 689: 1-3 s.h.**Topics in Elementary Education**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods used will vary according to the needs of students and faculty involved. Offered periodically.

EDUC 691: 1-3 s.h.**Independent Studies**

Intensive study of a particular field, curriculum area or problem in education. Prereq: 12 graduate s.h. Offered periodically.

Educational Foundations (EDFN)

EDFN 001: 1-12 s.h.

Pro Bloc:

EDFN 002: 1-12 s.h.

Fnd Bloc:

EDFN 003: 3,6 s.h.

Fnd Bloc:

EDFN 090: 3 s.h.

Topics: Life Transitions

This is an applied seminar and skill acquisition course including historical, sociological, and philosophical foundations of education & life transition as it applies to learning, personal growth, and professionalism. The course is designed to provide an opportunity for students to learn more about their major field of study and the professional behavior essential to their chosen careers. Through this professional participatory seminar, students will begin the important process of collecting information about career paths, education for life, professional expectations and conduct, ethics, and service. Additionally this course is designed to assist in thinking critically to improve academic performance, develop mastery of their emotions and judgment, and improve problem-solving skills. The course provides opportunities for students to evaluate personal development, goals, reasoning, and logical thinking. Other course topics include; creative thinking, organizational skills, evaluating facts versus opinions, interpersonal skills, and conflict resolution.

EDFN 179: 1-3 s.h.

Experimental

Experimental

EDFN 211: 3 s.h.

Foundations Modern Education (D)

This course provides an analysis of the philosophical, anthropological, sociological, economic and historical foundations for the contemporary PreK-12 school system in the United States; more specifically how issues of race, ethnicity, language, gender, disability, sexual orientation, geography, socioeconomics and religion influence the profession of teaching in particular grade-level contexts. The content for each section will be focused on the respective program area of the candidates (PreK-4 grades, 4-8 grades, and 7-12 grades). The course addresses the Pa. Dept. of Education's sociocultural standards for English-language learners. Must be taken simultaneously with EDFN 241. Includes field experience, which requires submission of satisfactory FBI, Act 34/151 clearances for eligibility for field placement.

EDFN 211H: 3 s.h.

H: Foundations Modern Educatio (D)

EDFN 241: 3 s.h.

Psychological Foundations of Teaching

Teaching and learning through the application of psychology to the activities of the classroom. Learning theory and practice, human growth and development, motivation, classroom management, evaluation and principles of effective instruction. Must be taken simultaneously with EDFN 211. Includes field experience, which requires submission of satisfactory FBI, Act 34/151 clearances for eligibility for field placement.

EDFN 241H: 3 s.h.

Hon:Psyc Foundation/Teaching

EDFN 279: 1-3 s.h.

Experimental

Experimental

EDFN 300: 3-12 s.h.

Co-Op Ed Experience in EDFN

Co-Op Ed Experience in EDFN

EDFN 312: 3 s.h.

Women and Education (P)

This course uses philosophical analysis and a sociology of knowledge approach to examine women's and girls' experiences with respect to educational institutions as they exist in contemporary America. These concerns are explored dialectically, examining not only how educational institutions and opportunities shape women, but also how the presence of women in educational activities alters the nature of that enterprise. Offered periodically. Prereq: COMM 100, ENGL 110, junior status.

EDFN 312H: 3 s.h.

Hrs:Women and Education (P)

Hrs:Women and Education

EDFN 320: 3 s.h.

Instructional Technology in Elementary Education

Students use case studies to explore the uses of technology and its application in elementary education. Topics include computer basics, applications software, curriculum integration, evaluation of educational software, telecommunications and multimedia presentation systems. Students are provided a series of hands-on experiences with hardware and software to develop the skills and competencies required of the elementary education teacher. Offered in fall, spring. No credit given if credit earned in EDFN 130, 220, 230, 330/530, 333/533 or EDAR 330/530.

EDFN 320H: 3 s.h.

H:Instructnl Technol in ELED

H:Instructnl Technol in ELED

EDFN 330: 3 s.h.

Instructional Technology, Design & Assessment

Instructional design and assessment will be used as a basis for planning and evaluating the use of technology for student-centered teaching and learning within specific disciplines. Offered in fall, spring. Admission to advanced professional studies. No credit given if credit earned in EDFN 130, 220, 230, 320/520 or EDAR 330/530. Taken with professional bloc. Professional bloc field experience includes approximately 150 hours in schools.

EDFN 336: 3 s.h.

Assistive Technology & Online Learning

Designed to provide pre-service special education teachers with experiences in the use of technology in teaching and online learning. This includes assistive technology by students with disabilities to become more independent, as well as the use of a variety of instructional technologies to encourage more active and effective learning. In addition, teacher candidates will learn various technological strategies and tools that can be used to provide different paths for student achievement and enhance student learning.

EDFN 355: 3 s.h.**Living Online (D, P)**

"All the world's a stage" famously open Act II of As You Like It, a Shakespearean comedy uniquely positioned to showcase the valleys and peaks of human experience. Interestingly, as the world's stages become increasingly technological and anonymous, how youth learn, think, and find voice has also shifted. Looking beyond the social posturing characteristic of today's "selfie generation," these contexts offer incredible insights about the nature of learning and identity development. This course will explore the work of social theorists, technology gurus, public policy makers, and youth participants who continue to grapple with ever-changing landscape of social media. Using major current events as a lens: #EgyptianRevolution #OccupyWallStreet #RapeCulture #AllLivesMatter #Islamphobia, this course explores social media as a culturally mediated/sustaining response and practice worldwide.

EDFN 376: 3 s.h.**Whose School Is It? (D, P)**

Historical, political and legal investigation of American public schooling in the 19th and 20th centuries and of the issue of equal educational opportunity in regard to gender, class, race and ethnicity. Students should have completed a lower level history, historiography, political science or educational history course. Offered periodically. Prereq: COMM 100, ENGL 110, junior status.

EDFN 376H: 3 s.h.**Hnrs:Whose School Is It? (D, P)**

Honors Course - Historical, political and legal investigation of American public schooling in the 19th and 20th centuries and of the issue of equal educational opportunity in regard to gender, class, race and ethnicity. Students should have completed a lower level history, historiography, political science or educational history course. Offered periodically.

EDFN 379: 1-3 s.h.**Experimental**

Experimental

EDFN 386: 1-6 s.h.**Topics:**

Detailed investigation of a topic of current interest. Topic to be announced each time course is offered. Credit and meeting hours variable, depending on topic offered. May be taken more than once for credit as topic varies. Offered periodically.

EDFN 387: 1-6 s.h.**Topics:**

Detailed investigation of a topic of current interest. Topic to be announced each time course is offered. Credit and meeting hours variable, depending on topic offered. May be taken more than once for credit as topic varies. Offered periodically.

EDFN 388: 1-6 s.h.**Topics:**

Detailed investigation of a topic of current interest. Topic to be announced each time course is offered. Credit and meeting hours variable, depending on topic offered. May be taken more than once for credit as topic varies. Offered periodically.

EDFN 398: 3 s.h.**Urban Immersion Seminar**

Intensive living-learning experience based in an urban setting. On-site experience in urban schools and social service agencies is provided as well as service-learning experiences within the urban community. Professional development geared to developing the skills and knowledge base needed to work effectively in urban communities will be available. Course portfolio tailored to student's area of interest/major is required. Offered in summer. Prereq: COMM 100, ENGL 110 and junior status.

EDFN 399: 3,6 s.h.**Culture & Education Seminar**

Humans are divided into different groups based on religion, language, ability, beliefs, ethnicity, appearance, values, traditions and many other markers. Effective communication across these differences requires all humans, and teachers in particular, to develop skills that enable successful interaction and collaborate across boundaries. Culture can be understood, at least partially, as the background and preconceptions humans carry into any interpersonal situation. Since culture constitutes the keystone of identity, it is a key source of conflict between people, particularly in the teacher-student relationship. This seminar pairs discussions and readings about the nexus of culture, identity and education with immersion in different cultures, internationally, nationally and locally, to develop a deeper commitment in students to be effective teachers for all children across all differences. Prereq: EDFN 211 and 241

EDFN 400: 3-12 s.h.**Co-Op Ed Experience in EDFN**

Co-Op Ed Experience in EDFN

EDFN 489: 1-4 s.h.**Honors Course**

Two to four semesters of supervised research by highly motivated students capable of conducting independent research projects. For further information, see the Special Academic Opportunities section.

EDFN 498: 1-6 s.h.**Independent Study**

For further information, see the Special Academic Opportunities section.

EDFN 499: 1-4 s.h.**Departmental Honors**

Two to four semesters of supervised research by highly motivated students capable of conducting independent research projects. For further information, see the Special Academic Opportunities section.

EDFN 511: 3 s.h.**Comparative Education**

Analyze crucial educational questions and issues using the comparative method. Cross-cultural studies pursued in a multiple-disciplinary format will help participants discover how education serves economic, sociopolitical, ideological and other purposes, and how it reflects the historically derived tensions within national development. Factors underlying similarities and differences in various cultures, nations and contexts are studied. Includes appraisal of educational issues from a global perspective. Offered annually.

EDFN 513: 3 s.h.**Sexual Orientation, Gender Identity and Schooling**

Students will study the history of sexual orientation and gender identity, the research on school climate related to sexual orientation and gender identity of students and professionals, knowledge of current laws and policies, and recommended practices for supporting LGBTQ+ youth and educators.

EDFN 520: 3 s.h.**Instructional Technology in Elem Ed**

Students use case studies to explore the uses of technology and its application in elementary education. Topics include computer basics, applications software, curriculum integration, evaluation of educational software, telecommunication and multimedia presentation systems. Students are provided a series of hands-on experiences with hardware and software to develop the skills and competencies required of the elementary education teacher. Offered regularly. Students may not receive credit for both EDFN 520 and any of the following courses: EDFN 130, 320, 330, 333, 530, 533 and EDAR 330.

EDFN 530: 3 s.h.**Instructional Technology, Design and Assessment**

Instructional design and assessment will be used as a basis for planning and evaluating the use of technology for student-center teaching and learning within specific disciplines. Must be taken as a block with EDSE 321 (or graduate equivalent) and the Teaching of Methods class required in each secondary certification program. Students may not receive credit for both EDFN 530 and any of the following courses: EDFN 130, 320, 330, 333, 520, 533 and EDAR 330.

EDFN 545: 3 s.h.**Advanced Educational Psychology**

A review of psychological principles as they relate to human learning in the urban and non-urban setting. Special consideration is given to motivational and developmental factors in the school that influence students' learning. Additional topics include examination of assessment and evaluation practices, classroom management and accommodating individual differences.

EDFN 586: 1-3 s.h.**Topics in Education**

Investigation and development of educational topics of current interest not normally covered in regular courses. Special topics and methods will vary according to the needs of students involved. Offered periodically.

EDFN 587: 1-3 s.h.**Topics in Education**

Investigation and development of educational topics of current interest not normally covered in regular courses. Special topics and methods will vary according to the needs of students involved. Offered periodically.

EDFN 589: 3 s.h.**Topics in Education**

Investigation and development of educational topics of current interest not normally covered in regular courses. Special topics and methods will vary according to the needs of students involved. Offered periodically.

EDFN 590: 3 s.h.**Social Foundation of Educ**

An analysis of the K-12 school system of the U.S. philosophical and historical influences, significance of education in society, contemporary problems in schooling, challenges and requirements of the profession. Offered annually.

EDFN 601: 3 s.h.**Research Methods**

Introduces methods of empirical educational research. Emphasis on training individuals to be intelligent consumers of educational research. It is strongly recommended that the course be taken early in the student's program.

EDFN 603: 3 s.h.**Philosophy of Education**

An analysis of current and perennial education problems using the tools of the philosopher: logic, language analysis and inquiry, and phenomenological description. Students articulate their own beliefs and assumptions about education as well as critically examine and evaluate selected texts. Offered annually.

EDFN 604: 3 s.h.**Education and Public Policy**

An analysis of public policy development in the field of education. Major questions to explore include: (1) Who governs education? (2) What are the processes by which policies are formulated? (3) What values are reflected in specific present policy or proposed reform? (4) What do we know about reforming education? (5) How useful is social science research in the formulation of educational policy? Offered annually.

Educational Leadership (EDLD)

EDLD 610: 3 s.h.**Theory and Organizational Behav**

Examination of theories of leadership based on cooperation, empowerment and facilitation of change. The implications of leadership theories on administration in educational organizations. Attention given to organizational climate, conflict negotiation, decision making, communication, assumptions about power and change. Theory, research, practice and the influences of special-needs learners, race, class, gender and other social constructs will be integrated into the course. Offered in fall.

EDLD 614: 3 s.h.**School Community Relations**

Examination of the political, social and economic factors which influence the school's relationship with various community agencies and constituencies. Developing administrative sensitivity to community needs and effective articulation of the school's programs to the various communities. Offered annually.

EDLD 620: 3 s.h.**School Law and Public Policy**

An overview of American public elementary and secondary school law in the context of public policy. Examines federal and state constitutional, statutory and common law decisions that impact on the substantive or procedural rights of students, teachers and other school personnel. Emphasis on issues of equity and equality, and First Amendment issues. Makes use of 1) an interactive, empowering pedagogy, 2) case studies addressing race, class, gender and religious diversity, and 3) alternative assessment strategies.

EDLD 667: 1 s.h.**Leadership Seminar 1**

The first in a series of three one-credit seminars on the emergent issues and PDE competencies surrounding special education and English language learners for principal candidates, the over representation of diverse students in special education, prevention and early-intervention strategies for students with disabilities. Offered in spring.

EDLD 668: 1 s.h.**Leadership Seminar 2**

The second in a series of three one-credit seminars on the emergent issues and PDE competencies surrounding special education and English language learners for principal candidates, including early intervention and effective instructional strategies for students with disabilities in inclusive settings. Prereq: EDLD 667. Offered in spring.

EDLD 669: 1 s.h.

Leadership Seminar 3

The third in a series of three one-credit seminars on the integration of a mini-portfolio on emergent issues and PDE competencies surrounding special education and English language learners into the comprehensive program portfolio based on national standards. Prereq: EDLD 668. Offered in spring.

EDLD 681: 3 s.h.

Supporting Inclusion as a Current School Leader 1

This course is the first in a year-long series of courses designed to provide targeted professional development for current school administrators who seek to understand their role as the school leader in the IEP process and related components in meeting the needs of all learners. Emphasis is given to culturally responsive practices and inclusive strategies for achieving high levels of student growth. Must be a current school administrator to enroll.

EDLD 798: 3 s.h.

Applied Supervision

Internship in which the candidate must conduct six cycles of clinical supervision: one at the elementary, middle and high school levels, and observes each teacher twice.

EDLD 799: 3 s.h.

Applied Practicum

Internship is a performance-based, on-site field experience on administrative best practices. Emphasis is on curriculum development, professional growth plans, organizational and financial management, school-community engagement and administrative responsibilities.

Educational Leadership (ELPP)

ELPP 808: 3 s.h.

Qual Methods in Ed Ldshp

This course is designed to prepare school leaders for leadership positions in public education. It intends to help postgraduate students in defining an appropriate mode of qualitative inquiry related to a chosen topic of study. The course has been constructed to guide students through a range of issues and considerations, which should inform their general approach to qualitative research. It will give students a general understanding of postgraduate and professional qualitative research, its methodologies, its challenges and its organization. Students will be introduced to a range of research tools and will be equipped to plan and organize their research, as well as to communicate their findings with academic, school district and community audiences.

ELPP 820: 3 s.h.

Intro to Research in Ed Leads

This course will provide an introduction to educational research - qualitative, quantitative, and mixed method designs. The primary purpose of the course is to develop the skills and disposition needed to be a critical consumer of educational research. Students will learn the key characteristics, strengths and limitations of various research designs. Students will learn to critique the research methodologies employed by various studies and to synthesize the findings of multiple studies on a specific educational topic/problem.

ELPP 821: 4 s.h.

Strat Lead in Dist Gov & Comm

Provides an initial exploration and exposure to leadership roles at the district setting and should be taken as part of a candidate's practicum experiences at the end of the program of study. Candidates expected to log a minimum of 90 hours of total practical field experiences to include, but not limited to, shadowing school leaders, observing other educators, assuming responsibility for basic leadership activities as assigned by mentor and conducting a case study on leadership concepts. Candidate will participate in three leadership seminars which focus on leadership foundations and best practices as articulated by current leaders in the field and a basic action research activity. Candidate will also begin to explore the role of the superintendent as an agent of change and/or reform.

ELPP 822: 3 s.h.

Comm Theory for District Admin

This course is concerned with communication processes within an organization. It focuses on the sending, the receiving and the interpretation of messages. Principles of downward, upward and lateral systems are investigated. Case studies, specific to traditionally underserved and marginalized populations, including but not limited to those living in poverty, students learning English as another language, and students with disabilities are employed to illustrate typical problems that arise and the methodologies devised for successful resolutions to achieve effective communication. Designed for students to learn how to represent a school district to all internal and external constituents, including the wider community.

ELPP 823: 4 s.h.

Negotn & Persnl Strat Dec Makn

Designed to prepare school leaders for leadership in the area of human resources in public schools. Includes a comprehensive review of the personnel function from the perspective of district central office administration and the theories and best practices in staff recruitment, selection, assignment, orientation, evaluation, professional development, reduction in force and other relevant current issues. Explores negotiations concepts, strategies, regulations and the other legal considerations within the commonwealth of Pennsylvania. Core field experiences, from the basis of the exploration and development of critical skills necessary to be successful, in the areas covered within the course to include the integration of institutional standards as they apply to all topics.

ELPP 824: 4 s.h.

Eth & Leg Dec-mak at Dist Lvl

Designed for preparing executive leadership positions in public education. Students expected to have background in public school law and some experiences in leading public schools at either the building and/or district levels. Focuses on a review of key areas of school law with advanced study in the level areas which are currently challenging school and district leaders. State laws affecting public education will be studied in detail along with issues dealing with student rights, the role of the school board, laws specific to the roles of school leaders, parent and community issues, emerging special education challenges and laws dealing with business and finance.

ELPP 825: 4 s.h.**Impct Fac & Plnt Mgmt Schl Eff**

Designed for students in the Superintendent's Letter of Eligibility Program and for practicing educational administrators who want to update skills in educational facilities and plant management. Related educational program to facilities planning and development; provides an opportunity for students to interact with professional from a variety of disciplines related to planning and development of educational facilities, relates local planning to Pennsylvania Department of Education requirements and regulations; and provides field-based work in contemporary facility planning, development and maintenance.

ELPP 826: 4 s.h.**Opt Fin Res Supp Dist Lvl Achv**

Project driven course focuses on the changing perception of finance in the American public schools (K-12). Assists in creating a platform of beliefs about school finance, budgeting and the role of the superintendent by helping them understand key issues from a historical perspective, as well as current thinking on what it should become. Emphasis on approaches to developing, evaluating and articulating financial planning strategies to staff, the public and the school board that inform decisions about student achievement. Also discusses the relationship between school boards and superintendents specific to budget development and strategies for enhancing the relationship.

ELPP 827: 4 s.h.**Inst & Tech Ldrshp at Exec Lvl**

Provides an advanced exploration and exposure to leadership roles at the district setting and should be taken as part of a candidate's practicum experiences at the end of program of study. Candidates expected to log 180 hours of practical field experiences to include, but not limited to, shadowing school leaders, observing other educators, assuming responsibility for instructional leadership activities as assigned by mentor and conducting a case study on instructional leadership concepts. In addition, the candidate will participate in three leadership seminars which will focus on instructional leadership foundations and best practices as articulated by current leaders in the field. Candidate will also begin to explore the role of superintendent as an agent of change and/or reform.

ELPP 828: 3 s.h.**Emernt Tech & Instruc Practice**

Designed to provide future school and district administrators with the requisite skill sets and conceptual knowledge needed for effective 21st century leadership. Understanding technology as a tool for learning, managing, analyzing, communicating and collaborating is integral to successful school leadership at the classroom, building and central office levels. Topics explored include technology integration, digital citizenship, use of technology in systematic organizational improvement, professional growth, digital culture and visionary leadership. In addition to developing personal philosophies regarding use of technology in teaching, learning, and leading, each student will develop a personal portfolio of resources.

ELPP 829: 3 s.h.**Pol/Soc Cont for Ed Leadership**

Examines the theories of leadership and organization and their applications to administrative practices. Sociological, psychological and organizational models will be described and analyzed to gain insight into administrative practices and processes such as decision making, group motivation, goal setting, delegating, conflict resolution and site-based management. Extensive research of current practices including but not limited to including programming for those living in poverty, students learning English as another language, and students with disabilities is required. Course designed to target current issues and problematic situations facing the central office administrator in today's dynamic system of public education.

ELPP 830: 3 s.h.**Quan Research Mthd in Ed Ldrsh**

This course is designed to prepare school leaders for leadership positions in public education. It intends to help postgraduate students in defining an appropriate mode of quantitative inquiry related to a chosen topic of study. The course has been constructed to guide students through a range of issues and considerations, which should inform their general approach to quantitative research. It will give students a general understanding of postgraduate and professional quantitative research, its methodologies, its challenges and its organization. Students will be introduced to a range of research tools and will be equipped to plan and organize their research, as well as to communicate their findings with academic, school district and community audiences.

ELPP 831: 3 s.h.**Educational Statistics**

Designed to enable the student to interpret the scientific literature in education and psychology and to make the computations involved in the use of tests and original investigations that require statistical technique. Measure of central tendency, variability and correlations are included as are knowledge of and evaluation of effect size research related to instructional practices, leadership practices, and educational policy.

ELPP 832: 3 s.h.**Intro to Executive Leadership**

Introductory study of the organization and administration of American public education for persons interested in pursuing a professional career in educational administration. Students will examine theories of leadership based on cooperation, empowerment and facilitation of change. A basic understanding of educational leadership is developed through integration of theory, knowledge and actual practice. Focusing on the multi-faceted roles of school/district leaders, students will study the role of an executive leader through the lens of the executive leader as a learner, mentor, instructional leader, supervisor, manager, politician, advocate and innovator. Combining theory with practice, students will obtain a deeper understanding of the complexity of leadership within traditional and non-traditional school and district settings, including but not limited to urban and multilingual schools and/or blended and online learning environments.

ELPP 890: 1 s.h.**Research in Edu Ldshp Part 1**

The purpose of the course is to help students identify potential dissertation topics in the field of education leadership such that when they pass their comprehensive examinations they are prepared for dissertation seminar activities that support the development of their dissertation proposals. This course will bring together a group of students and faculty members periodically throughout the program to examine possible areas of research in the field of executive leadership in concert with the program themes of poverty and digital learning. Students will explore their ideas, background and potential methodologies with a collegial faculty and candidate group, address questions about the viability of possible research ideas and be introduced to a variety of sources that may help them refine their ideas or locate alternative areas of exploration based on their interests.

ELPP 891: 1 s.h.**Research in Edu Ldshp Part 2****ELPP 897: 3 s.h.****Dissertation Seminar**

This course is designed to provide Ed. D. candidates with the necessary background and tools to develop their final drafts of the dissertation proposals and assemble their dissertation committees. Key elements of the dissertation proposal will be reviewed and candidates will begin to have more intense conversations with faculty and others regarding the nature and relevance of their research focus. The IRB process will be outlined (It is anticipated that candidates will consult with potential dissertation advisors and the IRB process will be explained when completing this course.)

ELPP 898: 3 s.h.**Dissertation I - EL**

Working with an assigned dissertation advisor, each candidate formally begins the dissertation process. This includes a) finalizing a dissertation proposal describing the theoretical framework and antecedent literature, b) defending the written proposal in an oral examination before his/her Dissertation Committee, c) beginning dissertation activities as described in the proposal.

ELPP 899: 1-3 s.h.**Dissertation II - EL**

This course is a continuation of ELPP 898: Dissertation I. Working with the assigned dissertation advisor from ELPP 898 each candidate moves fully into the execution stage of the research as set forth in the dissertation proposal. Following the conclusion of the data collection stage the candidate refines the initial chapters of the dissertation and develops the presentation of the data to include the summaries, discussion, implications and recommendations for future research. Finally, the candidate presents the findings in a defense of the dissertation before the Dissertation Committee.

Educational Supervision (EDSU)

EDSU 700: 3 s.h.**Functions Supervision**

Interpersonal processing, data gathering in analysis of classroom teaching, simulation, microteaching, staff development, in-service program development and staff selection. Offered annually.

EDSU 701: 3 s.h.**Administrative Supervision**

Administrative theory, budget development and school finance, certification, teachers' and students' rights and responsibilities, school law, tenure, collective bargaining. Offered annually.

EDSU 703: 3 s.h.**Curriculum and Supervision**

Describe and analyze a curriculum plan, formulate a set of criteria for evaluating a curriculum plan, study roles of various persons in curriculum planning. Identify and evaluate characteristics, features and trends of education programs on levels K-12. Offered annually.

EDSU 799: 3,6 s.h.**Applied Practicum**

Internship is a performance-based, on-site field experience on administrative best practices. Emphasis is on curriculum development, professional growth plans, organizational and financial management, school-community engagement and administrative responsibilities.

Elementary Education (ELED)

ELED 179: 3 s.h.**Experimental**

Experimental

ELED 279: 3 s.h.**Experimental**

Experimental

ELED 300: 3-12 s.h.**Co-Op Ed Experience in ELED**

Co-Op Ed Experience in ELED

ELED 376: 3 s.h.**Assessment for Instrctnl Plnng (W)**

Principles, procedures and use of traditional and alternative testing and measurement to make curricular decisions to enhance student learning in the elementary classroom. Emphasizes analysis of student learning to inform teacher decision making. Prereq: ENGL 110, EDUC 220, EDFN 211, EDFN 241, MATH 104. Coreq: MATH 105. Offered periodically.

ELED 379: 3 s.h.**Experimental**

Experimental

ELED 419: 3 s.h.**Seminar in Early Chldhd Educ**

Investigation of contemporary goals of early childhood education. Provides analysis of organizational plans, classroom environment, teaching strategies and resources and noteworthy trends and innovations. Application to individual situations is stressed. Focus will vary. Offered infrequently.

ELED 479: 3 s.h.**Experimental**

Experimental

ELED 489: 1-4 s.h.**Honors Course**

For the definition of departmental honors and eligibility refer to the Special Academic Opportunities section of this catalog.

ELED 498: 1-3 s.h.**Independent Study**

Conferences and seminars designed for special study of particular topics in elementary education. Emphasis on new and emerging curriculum for teaching. Prereq: 60 s.h. and approval of the department chairperson. Offered periodically.

ELED 499: 1-4 s.h.**Departmental Honors**

For the definition of departmental honors and eligibility refer to the Special Academic Opportunities section of this catalog.

ELED 500: 3-12 s.h.**Co-Op Ed Experience in ELED**

Co-Op Ed Experience in ELED

ELED 576: 3 s.h.**Assessmnt for Instrctnl Plnng**

Principles, procedures and use of traditional and alternative testing and measurement to make curricular decisions to enhance student learning in the elementary classroom. Emphasizes analysis of student learning to inform teacher decision making. Prereq: ELED 502, EDFN 545, RDED 621 and two college-level mathematics courses. Offered annually.

ELED 678: 1-12 s.h.**Internship in Elementary Education**

Internship in schools or educational situations under supervision of the graduate faculty of the Department of Elementary and Early Childhood Education. Offered periodically.

ELED 699: 3,6 s.h.**Thesis:**

Each student writes and orally defends an individual thesis on an elementary education topic. Prereq: 24 graduate s.h. Offered periodically.

Emergency Management (EMGT)

EMGT 579: 1-3 s.h.**Experimental Course**

Experimental Graduate Level course in Emergency Management

EMGT 601: 3 s.h.**Principles & Practices of Emergency Management**

History and perspectives of the field, hazards concepts and taxonomies, all-hazards approach, phases of emergency management, risk assessment, risk communication, emergency management functions, sustainable development, best practices, the EOC, the disaster plan, CEM, IAEM, forging intra- and intergovernment relationships. Offered in fall and spring.

EMGT 603: 3 s.h.**Technical & Professional Writing for Emergency Management**

The emergency-management professional is engaged in an ever-increasing workload involving reporting, budget preparation, grant applications and communicating with the public. This course is designed to enhance the necessary skills for the emergency manager to successfully negotiate the increased demands of the profession. Offered in fall.

EMGT 605: 3 s.h.**Social Dimensions of Disaster**

An overview of the findings of disaster sociology, including, but not limited to, an examination of the social science definition of disaster, the disaster mythology, the impact of the media, organizational challenges during disaster, creating and maintaining a disaster-resilient community, national and international disaster researchers and the research literature. Offered in fall.

EMGT 607: 3 s.h.**Emergency Mental Health and Trauma**

This in-depth course provides the emergency responder with a greater appreciation of the challenges, responses and adjustments encountered by those exposed to disastrous events. Offered in spring.

EMGT 609: 3 s.h.**Disaster Resp & Recov**

An in depth investigation of emergency management practices as applied to response, and short term and long-term community recovery. The course will explore disaster recovery efforts with a foundation of statutory requirements, key concepts, core principles, roles and responsibilities of leadership, of individuals and households to governmental entities and between government and non-government sectors. Pre-requisite: EMGT 601

EMGT 614: 3 s.h.**Natural Hazards Primer**

Natural Science examination of natural or environmental hazards and their associated risks. The overview will include hazards such as hurricanes, tornadoes, earthquakes, tsunamis and floods. Offered in summer and winter.

EMGT 615: 3 s.h.**Emergency Preparedness for Industry**

An examination of industrial and societal risks associated with the manufacture, handling, storing and transporting of biological, chemical, nuclear and radiological materials. Offered in spring.

EMGT 616: 3 s.h.**Terrorism,WMD,HomeInd Security**

A sociological exploration of what terrorism is, why it occurs, prudent approaches to reducing the incidence of terrorism, and failed approaches; the origins and functions of homeland security; the necessity of maintaining an all-hazards approach; and issues surrounding the placement of FEMA within the Department of Homeland Security. WMD history; an overview of the basic known biological, chemical, radiological and nuclear materials likely to be used as weapons; approaches to inoculation and treatment before and after exposure. Offered in spring of odd years.

EMGT 617: 3 s.h.**Crisis, Emergency and Risk Communication**

Draws on communication theory to examine common challenges and best practices encountered in emergency, crisis and risk communication situations by public information officers, public authorities, first responders, and health professionals. Provides the opportunity to develop strategies and communication solutions in interpersonal, mediated, social media, and public contexts. Prerequisites: EM 601 or permission of the instructor and MSEM director

EMGT 618: 3 s.h.**Humanitrn Rspnse/Intl Disastrs**

International organizations and the challenges and experiences they commonly encounter in mitigating and responding to disaster events; considers if a global economy, global village will help or hinder future efforts. Offered in summer of odd years.

EMGT 619: 3 s.h.**Emergency Management Planning**

In-depth analysis of planning methodologies and constructs as well as pitfalls and limiting factors in the development and execution of emergency management plans at the strategic, operational and tactical levels. Origins of emergency management planning, applicable policies and legislation, historical incident review and analysis, contemporary and emerging planning doctrine, and advanced planning concepts.

EMGT 629: 1,3 s.h.**Topics:**

In-depth investigation and development of one or more topics of current interest not addressed in current curriculum. Topics will vary according to the needs of students and the faculty involved. Offered periodically.

EMGT 630: 3 s.h.**Topics:**

In-depth investigation and development of one or more topics of current interest not addressed in current curriculum. Topics will vary according to the needs of students and the faculty involved. Offered periodically

EMGT 631: 3 s.h.**Topics:**

In-depth investigation and development of one or more topics of current interest not addressed in current curriculum. Topics will vary according to the needs of students and the faculty involved. Offered periodically.

EMGT 632: 1-3 s.h.**Topics:**

In-depth investigation and development of one or more topics of current interest not addressed in current curriculum. Topics will vary according to the needs of students and the faculty involved. Offered periodically.

EMGT 633: 3 s.h.**GIS Applications for Emer Mgmt**

Introduction to Geographic Information Systems (GIS), with emphasis on their use in emergency management. Covers the different types of GIS data available, sources of data and software tools for querying and spatially analyzing data. Offered in fall of odd years.

EMGT 634: 3 s.h.**Comparative EMGT Systems**

Provides a comparative perspective to emergency management by examining different governmental frameworks for emergency/disaster management from around the globe. Students will gain insight, through a variety of case studies into the connections between a country's political and legal culture, level of political-economic development and disaster vulnerability to the organization of its domestic emergency/disaster management system.

EMGT 653: 3 s.h.**Theoretical Prspctvs/Methods**

Theoretical perspectives drawn from sociology are applied to emergency management. The EM professional will develop insight into the common responses to planning, responding, recovery and mitigation. Offered in spring.

EMGT 691: 1-3 s.h.**Ind Stdy:**

Intensive study of a particular emergency-management area, topic or event. Permission of program coordinator is required.

EMGT 693: 3 s.h.**Field Experience Practicum**

A capstone experience in which emergency management knowledge and skills are applied and integrated within a field experience. Those already working within an emergency management related career will use their current position as the basis for completing a project applicable to enhancing their current skills and applying best practices. The course will provide you with the opportunity to participate in supervised emergency management work activities, or focused research, that provide experiential and research-based learning in the application and integration of the theory and skills acquired in earlier coursework. Permission of the program coordinator is required. Prerequisites: Successful completion of 24 credit hours in the MSEM program, submission and approval of the Field Experience Practicum Proposal Form.

English (ENGL)

ENGL 110: 3 s.h.**English Composition**

Required course in general education. Introduces strategies of expository and argumentative writing and provides practice in standard written English. Individual instructors use print or nonprint media to achieve this goal. Evaluations based on competency, not on progress. Minimum grade of C- designates competency.

ENGL 110H: 3 s.h.**Hnrs:English Composition**

Develops research and analytical skills; presumes basic writing competence. Students who demonstrate competency in ENGL 110 may be exempt from this requirement with written approval of the honors program director.

ENGL 111: 1 s.h.**English Composition Lab**

Assists students through workshop/lab format with assignments in accompanying English Composition course. Co-requisite ENGL 110.

ENGL 179: 3 s.h.**Experimental**

Experimental

ENGL 220: 3 s.h.**Introduction to Language Study (G1)**

Study of the historical development and present characteristics of the English language, the process of language learning, social and geographical dialects and semantics. An overview of linguistic investigation.

ENGL 221: 3 s.h.**Intro to Linguistic Analysis (G1)**

Investigates sounds, word structure, syntax and semantics of American English from the point of view of modern linguistics. Prereq: ENGL 110.

ENGL 221H: 3 s.h.**Hon: Intro to Linguistic Analy (G1)**

Honors Introduction to Linguistic Analysis

ENGL 230: 3 s.h.**Introduction to Literature (G1)**

Reading, analysis and interpretation of various literary genres (poetry, fiction and drama) selected from different periods with emphasis on cultural contexts. Not for English major credit.

ENGL 231: 3 s.h.**World Literature 1 (G1)**

Survey of literary development from earliest records to 1650. Emphasis on historical, aesthetic and philosophical aspects of world literature.

ENGL 232: 3 s.h.**World Literature 2 (G1)**

Continuation of ENGL 231 from 1650 to present.

ENGL 232H: 3 s.h.**Hnrs: World Literature 2 (G1, W)**

ENGL 233: 3 s.h.**Early British Literature (G1)**

Survey of British literature from Anglo-Saxon times to 1800. Texts studied span early tales like Beowulf and King Arthur legends through Shakespeare's plays up to the rise of the novel in the 18th century. Students will examine historical context and thematic connections as they observe authors wrestling with social problems and larger questions about the nature of faith and heroism, love and life, the monstrous and magical. Readings selected to include works by women writers, writers of color, and writers speaking from the margins of British society.

ENGL 234: 3 s.h.**Later British Literature (G1)**

Survey of British literature including works from the early Romantic period through the early 21st century. Explores historical context and thematic connections as students examine how authors such as Jane Austen, Charles Dickens, Virginia Woolf, and Zadie Smith respond and contribute to the vast social changes attending a period that spans the industrial revolution, two world wars, the expansion of civil liberties, and the rise of postmodernism. Readings selected to include works by women writers, writers of color, and writers speaking from the margins of British society. ENGL 233 is not a prerequisite.

ENGL 235: 3 s.h.**American Literary Tradition I (G1)**

This survey-style course looks to the literary foundations of America from Native American oral literatures to early Americans' various writings through the 1860s and explores issues, conflicts, preoccupations, and themes during this period.

ENGL 236: 3 s.h.**American Literary Tradition II (G1)**

Survey of American literature from 1865 to present. ENGL 235 is not a prerequisite.

ENGL 237: 3 s.h.**Literary Research and Analysis**

Textual, critical and rhetorical analyses of literary genres. Designed to familiarize the student with literary theory and interpretation of genres through research and analytical writing. Prereq: ENGL 110.

ENGL 240: 3 s.h.**The Art of Film (G1)**

Interpretation of film as an art form, including technical and artistic aspects of film making. Explores theoretical approaches to cinema.

ENGL 240H: 3 s.h.**Hrs:Introduction to Film (G1, W)**

Honors Introduction to Film

ENGL 241H: 3 s.h.**H:Explorations in World Lit (D, G1, W)**

Investigates connections among a selection of representative literary works from at least three different linguistic traditions and various historical periods in both Western and non-Western cultures. Prereq: ENGL 110, Member University Honors College or 3.35 GPA.

ENGL 242: 3 s.h.**Reading Our World: (G1, W)**

Applies critical lenses from fields of English Studies to a selection of texts on a particular theme. Engages students in interpreting current themes across cultures and/or time periods. Students will explore the topic from different perspectives by learning methods for critiquing texts, including new media. Themes/topics determined by instructor.

ENGL 242H: 3 s.h.**Hrs: Reading our World (G1, W)****ENGL 250H: 3 s.h.****Hon: Press & Society (G1, W)****ENGL 279: 3 s.h.****Experimental**

Experimental

ENGL 292: 3 s.h.**Science Fiction (G1, W)**

The nature and development of science fiction from Jules Verne and H. G. Wells to major writers of the present, with emphasis on methods of extrapolation - descriptions of consistent, altered frames of references based on scientific knowledge and historical, social or cultural patterns. Emphasis on multiple lines of inquiry or analysis. Prereq: ENGL 110.

ENGL 292H: 3 s.h.**Hon: Science Fiction (G1, W)****ENGL 300: 3-12 s.h.****English Internship**

A variety of options are available for English majors to apply their fields of study in professional contexts. Prereq: ENGL 110, 24 s.h. and permission of COOP coordinator. An (AW) indicates that the course counts toward the advanced writing part of the general education requirements.

ENGL 315: 3 s.h.**Advanced Reporting (W)**

A course in reporting news and features that emphasizes experience in the field completing authentic journalistic assignments. Includes the study of traditional and nontraditional journalistic forms. Prereq: ENGL 313.

ENGL 321: 3 s.h.**Modern Syntax (G1)**

Analysis of the syntax of American English. Prereq: ENGL 110 and 220 or 221 or permission of instructor.

ENGL 322: 3 s.h.**History of English (G1, W)**

Examines language change and its effects on the development of English phonology, morphology, syntax and semantics. Prereq: ENGL 110.

ENGL 322H: 3 s.h.**Hon: History of English (G1, W)****ENGL 331: 3 s.h.****Special Topics in Literature**

Thematic investigation of a significant literary topic, major author, or literary style. May be taken more than once for credit since the topic varies. Prereq: ENGL 110.

ENGL 333: 3 s.h.**African-American Literature 1 (D, G1, W)**

Major writers and genres to circa 1935, with emphasis on the cultural roots and aesthetics within the American literary tradition. Prereq: ENGL 110.

ENGL 333H: 3 s.h.**Hrs:African American Lit 1 (D, G1, W)**

Honors African American Literature 1

ENGL 334: 3 s.h.**African American Literature 2 (D, G1, W)**

Major writers from circa 1935 to the present, with emphasis on literary movements, critical discourses and the relationship between literature and its historical contexts. May use thematic approach. Covers various genres, including oral tradition. Considers the black experience in the U.S. in an interdisciplinary context that analyzes cultural production. Prereq: ENGL 110.

ENGL 334H: 3 s.h.**Hrs:African American Lit 2 (D, G1, W)**

Honors African American Literature 2

ENGL 336: 3 s.h.**New Dimensions to World Lit (D, G1, W)**

Introduces students to non-Western literary traditions through a theme selected by the instructor. Students will increase their awareness and appreciation of cultural differences and the art of literature. ENGL 110.

ENGL 337: 3 s.h.**Women Writers in Middle Ages (P)**

Investigates the work of women who lived and wrote in the medieval period, primarily (though not entirely) in Europe. Prereq: COMM 100, ENGL 110, junior status.

ENGL 338: 3 s.h.**Folklore and Literature (G1)**

Folklore, with emphasis on literature, history, region, gender and class. Ballads, tales, riddles, legends, proverbs and other forms from American, English and international sources. Includes field collection projects. Prereq: ENGL 110.

ENGL 338H: 3 s.h.**H:Folklore and Literature (G1, W)****ENGL 343: 3 s.h.****Fiction Seminar (D, G1, W)**

Seminar with emphasis on fiction as a literary genre. Examines fictional narratives, including the novel, creative nonfiction, novella and short story. Reflects comparative and/or transnational perspectives. Prereq: ENGL 110.

ENGL 347: 3 s.h.**Ethnicity in Film (D, G1)**

Examines issues of ethnicity in cinema. Designed to enhance understanding of the relationships between the ethnic experience and film's representations of it. Studied ethnicities (African Americans, Latinx, etc.) vary by semester. Prereq: COMM 100, ENGL 110.

ENGL 379: 3 s.h.**Experimental**

Experimental

ENGL 400: 3-9 s.h.**English Internship**

A variety of options are available for English majors to apply their fields of study in professional contexts. Prereq: ENGL 110, 24 s.h. and permission of COOP coordinator. An (AW) indicates that the course counts toward the advanced writing part of the general education requirements.

ENGL 401: 3 s.h.**Old Eng Lang and Literature (G1, W)**

An introduction to the structure of the Old English language and to Old English prose and poetry. Prereq: ENGL 110.

ENGL 402: 3 s.h.**Middle Eng Lang and Literature (W)**

An introduction to the structure of the Middle English language and to Middle English prose and poetry exclusive of Chaucer. Prereq: ENGL 110, 237.

ENGL 403: 3 s.h.**Chaucer**

Chaucer's life, times and important works; study of the language and pronunciation. Prereq: ENGL 110, 237.

ENGL 404: 3 s.h.**The English Renaissance**

Nondramatic literature during the late 15th and 16th centuries from "Morte d'Arthur" through the early 17th century, prose and verse during reigns of Lancaster, York, Tudor. Prereq: ENGL 110, 237.

ENGL 405: 3 s.h.**Shakespeare (G1, W)**

A study of several of Shakespeare's plays and some of his non-dramatic poetry, set in the historical, cultural, social, and literary context of the Renaissance, with special attention to the enduring, abiding concerns of human nature. Prereq: ENGL 110.

ENGL 405H: 3 s.h.**Hrs:Shakespeare (G1, W)**

Shakespeare's life, works and times; detailed consideration of major plays. Prereq: ENGL 110.

ENGL 406: 3 s.h.**17th Cen Lit Prior Restoration**

Metaphysical and cavalier poetry and other nondramatic literature from 1600 to 1660, exclusive of Milton's poetry. Prereq: ENGL 110, 237.

ENGL 407: 3 s.h.**Milton**

A study of Milton's major poetry and selected prose works against the background of the Puritan Revolution. Prereq: ENGL 110.

ENGL 407H: 3 s.h.**Hrs:Milton**

A study of Milton's major poetry and selected prose works against the background of the Puritan Revolution. Prereq: ENGL 110.

ENGL 411: 3 s.h.**Romantic Literature**

Rise of romanticism in later 18th century to the beginning of Victorianism. Emphasis on poetry and criticism between 1798 and 1832. Prereq: ENGL 110, 237.

ENGL 412: 3 s.h.**Victorian Literature: Madwomen & Decadent Men (G1, W)**

Literary figures and their works against social and political backgrounds from the start of Victoria's reign through the start of World War I, a period marked by rapid social change impelled by industrialism and imperial expansion. Examines canonical authors (e.g. the Brontës, Charles Darwin, Christina Rossetti, and Oscar Wilde) as well as lesser-known writers (e.g. the early feminist "new women" and writers who documented the consequences of colonialism). Explores how authors negotiate nineteenth-century anxieties regarding class conflict and the industrial "condition of England"; shifting conceptions of gender and sexuality; tensions between science and religion; the ethics of imperialism; and evolving theories of the modern arts. Prereq ENGL 110.

ENGL 413: 3 s.h.**British Literature Since 1914**

Literary figures and works against the background of crisis in the 20th century from the onset of World War I to the present. New movements, attitudes and experimental techniques. Prereq: ENGL 110, 237.

ENGL 414: 3 s.h.**The British Novel (G1, W)**

Studies in the British novel. The course emphasis will vary from semester to semester, focusing on 18th-, 19th- 20th- and/or 21st-century novels. May be taken more than once for credit since the content of the course varies. Prereq: ENGL 110.

ENGL 415: 3 s.h.**Seminar of British Writers**

Intensive study of the works of selected British writers. May be taken more than once for credit since the content varies. Prereq: ENGL 110.

ENGL 416: 3 s.h.**The Woman Writer (G1, W)**

Chronological study of British women writers of poetry, prose, criticism and/or drama. Authors studied varies. Prereq: ENGL 110.

ENGL 421: 3 s.h.**Early American Literature**

Examination of colonial and federal literature, with some discussion of the beginnings of Romanticism. Special attention to Bradstreet, Taylor, Edwards, Franklin, Wheatley, Brockden Brown, Irving and Cooper. Prereq: ENGL 110, 237.

ENGL 422: 3 s.h.**The American Renaissance**

Focuses on Transcendentalism and authors including Hawthorne, Poe, Thoreau, Melville, Emerson, Whitman and Dickinson. Prereq: ENGL 110, 237.

ENGL 423: 3 s.h.**Development of the Amer Novel**

Narrative fiction from early and middle parts of 19th century to "fin de siècle." Emphasizes the Romance, the Gothic tale and the rise of the novel. Prereq: ENGL 110, 237.

ENGL 424: 3 s.h.**Realism and Naturalism to 1920**

Studies stylistic, thematic and philosophic issues relating to literary realism and naturalism. Selections from writers including Twain, Howells, James, Crane, Norris, London and Dreiser. Prereq: ENGL 110, 237.

ENGL 425: 3 s.h.**Modern Amer Fiction, 1920-1945**

Important American fiction writers of the twentieth century with emphasis on major developments in ideas and techniques. Special attention to Anderson, Fitzgerald, Hemingway, Faulkner, Steinbeck and others. Prereq: ENGL 110, 237.

ENGL 426: 3 s.h.**Modern American Drama (G1, W)**

American drama from World War I to the present, with emphasis on significant developments in styles and techniques explored by such dramatists as O'Neill, Hellman, Williams, Miller, Albee and others. Prereq: ENGL 110.

ENGL 427: 3 s.h.**Modern American Poetry**

Study of major American poets, including Eliot, Pound, Frost, Stevens, Williams and others; or of a school such as the Imagists, the Fugitives and others. Prereq: ENGL 110, 237.

ENGL 428: 3 s.h.**Contemporary Amer Lit: 1945-P**

Major trends in poetry, fiction and drama since World War II. Emphasizes prominent authors including Barth, Bellow, Mailer, Oates, Updike, Plath, Olson, Shepard, Mamet and others. Prereq: ENGL 110, 237.

ENGL 429: 3 s.h.**Smnr Sel Am Auth:**

Intensive study of the works of selected American authors. May be taken more than once for credit. Prereq: ENGL 110, 237.

ENGL 429H: 3 s.h.**Hnrs:Sem in Select Amer Authrs**

Hnrs:Sem in Select Amer Authrs

ENGL 430: 3 s.h.**Ethnic American Lit Since 1945 (D, P)**

Examines representative works of various ethnic groups in contemporary America. Develops an appreciation for and a critical understanding of multiculturalism and social tension reflected in contemporary ethnic literature. Discusses complex issues, such as race, ethnicity, power, gender and identity, that are involved in the process of Americanization. Prereq: COMM 100, ENGL 110 and junior status.

ENGL 430H: 3 s.h.**Hon: Ethnic Am Lit Since 1945 (D, P)****ENGL 431: 3 s.h.****Comparative Literature (P)**

Explores works from several literary traditions in world literature, using comparative and/or transnational perspectives. Examines correspondences between literary works in their historical and cultural contexts. May focus on a theme, a historical period or an aesthetic movement.

ENGL 431H: 3 s.h.**Hnrs: Comparative Lit 1: 1850-****ENGL 435: 3 s.h.****Journlsm Thru Women's Prspctvs (P)**

Literary journalism, a genre that combines literary techniques with journalistic techniques, that focuses on the circumstances of women from a variety of cultures as writers and subjects of the genre. Offered infrequently. Prereq: COMM 100, ENGL 110 and junior status.

ENGL 441: 3 s.h.**Poetry (D, W)**

Seminar with emphasis on poetry as a genre. Topics may include prosody, poetry in translation, contemporary trends in verse and schools of poetry. Reflects comparative and/or transnational perspectives. Prereq: ENGL 110.

ENGL 441H: 3 s.h.**Hnrs:Poetry**

Seminar with emphasis on poetry as a genre. Topics may include prosody, poetry in translation, contemporary trends in verse and schools of poetry. Reflects comparative perspective. Prereq: ENGL 110, 237.

ENGL 442: 3 s.h.**Drama**

Seminar with emphasis on drama as a literary genre. Emphasis on masterpieces of drama in the Western world. Prereq: ENGL 110, 237.

ENGL 445: 3 s.h.**Short Story:Hist,Devel,Genres (G1)**

Covers history, development and genres of the short story, with a focus on matters of style, interdisciplinary dimensions, historico-cultural context and critical approaches. Offered annually. Prereq: ENGL 110, 237.

ENGL 445H: 3 s.h.**Hnrs: Short Story (G1)****ENGL 451: 3 s.h.****Literary Criticism (P)**

Seminar on major critics and theorists from Plato and Aristotle to selected modern critics. Explores representative critical trends and controversies. Prereq: ENGL 110, 237.

ENGL 460: 3 s.h.**Teach ESL Listening/Speaking**

Gain a deeper understanding of the nature of spoken English and investigate current approaches to the teaching of ESL listening and speaking skills. Learn effective techniques and ideas for teaching ESL listening and speaking; also learn to integrate listening and speaking with other language skills in ESL teaching. Prereq: ENGL 110.

ENGL 462: 3 s.h.**Dialects of American English (P)**

Study of the origin and the features of the regional and social dialects of American English. Prereq: COMM 100, ENGL 110 and junior status, and one course in linguistics or permission of instructor.

ENGL 462H: 3 s.h.**Hnrs:Dialects of American English (P)**

Honors Dialects of American English

ENGL 463: 3 s.h.**Applied Linguistics (G1, W)**

Application of linguistic theory to selected problems of language teaching and research. Prereq: ENGL 110 and one course in linguistics or permission of instructor.

ENGL 463H: 3 s.h.**H:Applied Linguistics****ENGL 464: 3 s.h.****Teaching Eng as Second Lang**

Approaches, methods and techniques appropriate to teaching standard English to speakers of other languages. Includes international tutoring opportunities. Prereq: ENGL 110 and permission of instructor.

ENGL 465: 3 s.h.**Special Topics in Lang: Sem**

Investigation of topics in linguistic science, may include generative metrics, morphophonics, tagmemic analysis; investigation of English language problems selected by students in conference with instructor. May be taken more than once for credit as topic varies. Prereq: ENGL 110 and 3 hours in English language study or permission of instructor.

ENGL 471H: 3 s.h.**Hon: Creative Writing****ENGL 473: 3 s.h.****Special Topics in Journalism**

Techniques and problems in journalism. Offered in spring. Prereq: ENGL 313.

ENGL 479: 1-3 s.h.**Experimental**

Experimental

ENGL 481: 3 s.h.**History Of Film (D, G1, W)**

Viewing/discussion of influential narrative films from early silents to recent independents. Technology-intensive course. Prereq: ENGL 110.

ENGL 482: 3 s.h.**Film and American Society (G1)**

Viewing/discussion of significant American films in relation to social and historical context. Technology-intensive course. Prereq: ENGL 110.

ENGL 483: 3 s.h.**Politics, Film & Electronic Media (P)**

Exploration of the relationships between media, history, politics and people during the 20th and 21st centuries. Prereq: COMM 100, ENGL 110 and junior status.

ENGL 483H: 3 s.h.**H:Politics,Film,Electrnc Media (P)**

Honors Politics, Film and Electronic Media

ENGL 484: 3 s.h.**Sci Fiction, Technology & Film (G1, W)**

Explores the relationships between film, technology, the environment, and society during the twentieth and twenty-first centuries. Discusses technological changes and human reactions to them, including the shifting relationships between technology, race, class, gender, and power. Prereq: COMM 100 and ENGL 110.

ENGL 486: 3 s.h.**Teaching Reading & Literature to Young Adults**

Inquiries into reading and literature in middle and high school classrooms. Special emphases on strategies for motivation, engagement and support in reading; creating appropriate learning contexts; expanding student choice and book selection; and alternative methods of assessing reading/ literature achievement. Required for B.S.Ed. in English. Course should be taken prior to Advanced Professional Studies block (preferably as juniors or seniors). Prereq: ENGL 110.

ENGL 487: 3 s.h.**Seminar in Teaching Writing (W)**

Explores the nature of writing instruction by balancing three stances: that of the writer, teacher and researcher. Engages students in a writers' workshop, developing inquiry through thoughtful discussions about writing pedagogy and by exploring new teaching processes in a case study of an adolescent writer. Must be taken prior to APS semester. Prereq or Coreq: ENGL 110, 311.

ENGL 487H: 3 s.h.**Hon: Seminar in Teaching Wrtg (W)**

Honors Seminar in Teaching Writing

ENGL 488: 3 s.h.**Teaching Secondary School English**

Specialized problems of English instruction. Required for B.S.Ed. in English. Prereq: ENGL 486, 487, successful completion of the social and psychological foundations block and admission to Advanced Professional Studies. Must be taken during semester immediately prior to EDSE 461, Student Teaching and Seminar. Must be taken concurrently with EDSE 321.

ENGL 488H: 3 s.h.**H: Teaching Sec School English****ENGL 489: 1-4 s.h.****Honors Course**

For information on independent study and departmental honors, see your adviser.

ENGL 498: 1-6 s.h.**Independent Study in English**

For information on independent study and departmental honors, see your adviser.

ENGL 499: 1-4 s.h.**Departmental Honors**

For information on independent study and departmental honors, see your adviser.

ENGL 500: 3-12 s.h.**Co-Op Ed Experience in English**

Co-Op Ed Experience in English

ENGL 579: 1-3 s.h.

Experimental
Experimental

ENGL 581: 3 s.h.**Genres in Poetry Writing**

An immersion in poetry writing, often in workshop format, with special attention to the theories and practices of poetry's construction, for example how and why verse is generated in distinctive ways. Instructors will choose the genre that will be the focus of each section.

ENGL 586: 3 s.h.**Special Topics in English**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 587: 3 s.h.**Special Topics in English**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 588: 3 s.h.**Special Topics in English**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 589: 3 s.h.**Special Topics in English**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 601: 3 s.h.**Old English Language and Lit**

An introduction to the structure of Old English and reading in Old English prose and poetry. Offered periodically.

ENGL 602: 3 s.h.**Middle English**

Language and literature of England from 1100 to 1500, exclusive of Chaucer, with attention to changes in the language, literature and culture, especially between 1066 and 1509. Offered periodically.

ENGL 603: 3 s.h.**Chaucer**

Important works by Chaucer, with attention to the religious, philosophical, political and literary characteristics of his time; study of the language, pronunciation and versification; and important criticism. Offered annually.

ENGL 604: 3 s.h.**Renaissance in English**

Renaissance spirit in England, demonstrated by nondramatic literature. Offered biennially.

ENGL 605: 3 s.h.**Shakespeare**

Critical and historical examination of Shakespeare's plays and poetry, and introduction to major critics and sources. Offered every semester.

ENGL 606: 3 s.h.**Eng Lit in the Early 17th Cent**

Major English works, with attention to prose style, forms and style in verse; political events and developments in religious thought; intellectual climate of period 1600-1660. Offered biennially.

ENGL 607: 3 s.h.**Milton**

Milton's poetry and prose, in relation to religious, philosophical and critical tendencies of the Puritan period. Offered annually.

ENGL 609: 3 s.h.**English Novel of the 18th Cent**

Emphasis on the rise of the English novel as an art form. Reading list varies. Offered periodically.

ENGL 610: 3 s.h.**British Novel of the 19th Cent**

Study of the Victorian novel as an art form and as expression of the general culture of a period. Reading list varies. Offered periodically.

ENGL 611: 3 s.h.**Romantic Movement in England**

Main currents in the literature of the Romantic Age. Emphasis on Wordsworth, Coleridge, Byron, Shelley and Keats. Attention paid to Burns, Blake and major prose writers of the period. Offered periodically.

ENGL 612: 3 s.h.**Literature of Victorian England**

Victorian culture as interpreted by leading poets and prose writers who came to prominence between 1830 and 1900. Emphasis will be placed on such figures as Carlyle, Mill, Newman, Tennyson, Browning, Arnold, Ruskin, the Rossettis, Swinburne, Carroll, Hopkins, Hardy and Wilde. Offered periodically.

ENGL 613: 3 s.h.**Modern British Fiction**

Examination of the novel and story since 1900. Focus on experimental narrative techniques in the fiction of Conrad, Joyce, Lawrence, Forster, Woolf and Ford. Offered periodically.

ENGL 614: 3 s.h.**The Profession of Engl Studies**

"English studies" represents a wide range of scholarly and pedagogical interests and practices. This course will focus on the history and present state of English studies as an academic discipline or field.

ENGL 615: 3 s.h.**Sem Sel Brit Writ:**

Intensive study of selected figures; investigation of primary and secondary sources; special problems in scholarly research. Writers studied will vary. Offered periodically.

ENGL 616: 3 s.h.**The Documentary**

This course examines the art of interpreting, understanding, appreciating, and analyzing nonfiction film. It examines both rhetorical and narrative devices in nonfiction film as well as ethical considerations and ways to interpret a range of nonfiction cinematic genres. Auteur studies as well as film theories contribute to participants' understanding of this important medium.

ENGL 621: 3 s.h.**Early American Lit to 1830**

Examination of Colonial and Federal literature, with some discussion of the beginnings of Romanticism. Special attention to Bradstreet, Taylor, Edwards, Franklin, Wheatley, Brockden, Brown, Irving and Cooper. Offered annually.

ENGL 622: 3 s.h.**The Amer Renaissance: 1830-85**

Focus on Transcendentalism and such figures as Hawthorne, Poe, Thoreau, Melville, Emerson, Whitman and Dickinson. Offered annually.

ENGL 623: 3 s.h.**Dev of the Amer Novel: 19th C**

Narrative fiction from early and middle parts of 19th century to "fin de siècle"; emphasis on the Romance, the Gothic tale, and the rise of the novel. Offered periodically.

ENGL 624: 3 s.h.**Realism and Naturalism to 1920**

A study of stylistic, thematic and philosophic issues relating to literary realism and naturalism. Selections from writers such as Twain, Howells, Wharton, James, Crane, Norris, London and Dreiser. Offered periodically.

ENGL 625: 3 s.h.**Modern Amer Fiction, 1920-1945**

Important American fiction writers of the 20th century, with emphasis on major developments in ideas and techniques. Special attention to Anderson, Cather, Wright, Hurston, Fitzgerald, Hemingway, Faulkner, Steinbeck and others. Offered annually.

ENGL 626: 3 s.h.**Modern American Drama**

American drama from World War I to the present, with emphasis on significant developments in the styles and techniques explored by such dramatists as O'Neill, Hellman, Williams, Miller, Albee, Hansberry and others. Offered annually.

ENGL 627: 3 s.h.**Modern American Poetry**

In-depth study of several major American poets, including Eliot, Pound, Millay, Moore, Hughes, Frost, Stevens, Williams and others. Offered periodically.

ENGL 628: 3 s.h.**Contemporary Amer Lit: 1945-Pr**

Major trends in poetry, fiction and drama since World War II, with emphasis on such prominent figures as Barth, Bellow, Mailer, Oates, Updike, Plath, Olson, Shepard, Mamet and others. Offered annually.

ENGL 629: 3 s.h.**Semnr Sel Am Auth:**

Intensive study of the works of selected American authors. May be taken more than once for credit. Offered periodically.

ENGL 630: 3 s.h.**American Ethnic Literature**

A study of the representative literary works of various ethnic groups in contemporary America. Designed to develop an appreciation for and a critical understanding of multiculturalism, the course will examine the cultural plurality and social tension reflected in contemporary ethnic literature and discuss complex issues, such as race, ethnicity, power, gender, and identity that are involved in the process of Americanization.

ENGL 631: 3 s.h.**Comparative Literature 1**

Foundations of modernism in world literature. Symbolism, Aestheticism, Decadence. Comparative approach to the study of literature, from Poe to Baudelaire to Pater, Sartre, Tolstoy, T.S. Eliot, Lorca, Unamuno and others. Offered periodically.

ENGL 641: 3 s.h.**Poetry**

The nature of poetry as genre: content as an extension of form; form as an extension of content; work in prosody; intensive reading in verse of all types and periods; projects in bibliography and explication. Offered annually.

ENGL 642: 3 s.h.**Drama**

Drama as a literary genre; detailed study of specimens of drama of all types and periods; emphasis on masterpieces of drama from Aeschylus to Pinter; dramatic theory and criticism. Offered annually.

ENGL 643: 3 s.h.**Fiction**

Fiction as a literary genre; in-depth study of specific works of various types and periods; emphasis on specimens of fiction from around the world. Fiction theory and criticism. Offered annually.

ENGL 644: 3 s.h.**Modern British Poetry**

Forms, techniques and schools of 20th-century British poetry. Emphasis on the major poets and representative contemporary poets. Offered periodically.

ENGL 645: 3 s.h.**Short Story:Hist,Devel,Genres**

The rise and development of the short story as a literary genre. Offered periodically.

ENGL 651: 3 s.h.**Literary Criticism**

Origin and development of literary criticism; the splintering of critical approaches and methodologies (e.g., psychological, sociological, linguistic, archetypal and mythopoetic approaches); current developments such as phenomenology and structuralism; deconstruction; feminist criticism, etc. Offered annually.

ENGL 660: 3 s.h.**Tchg ESL Listening and Speaking**

Gain a deeper understanding of the nature of spoken English and investigate current approaches to the teaching of ESL listening and speaking skills. Learn effective techniques and teaching ideas for ESL listening and speaking. Also learn the integration of listening and speaking with other language skills in ESL teaching. Note: This course counts toward the M.A. or M.Ed. degree in English, but not toward the ESL certification or the BSE Chapter 49-2 ESL requirement. Prereq: ENGL 110. Offered annually.

ENGL 661: 3 s.h.**Semnr in Transformational Ling**

An introduction to the transformational-generative approach to language analysis. The primary focus of the course is syntax, although the semantic and phonological components of grammar are also examined. Offered periodically.

ENGL 662: 3 s.h.**Dialects of American English**

An investigation of the nature of dialectal and stylistic variation in American English, focusing on selected problems and issues of recent research in linguistic geography and sociolinguistics. Offered periodically.

ENGL 663: 3 s.h.**Applied Linguistics**

Applications of current linguistic theory to the study and teaching of a variety of language-related subject matters, including grammar, composition, spelling, second language acquisition, reading and literature. Offered periodically.

ENGL 664: 3 s.h.**Teaching of Eng as Sec Lang**

Examination of leading theoretical approaches to second language learning. Methods and techniques useful in developing listening, speaking, reading and writing skills. Opportunities for peer teaching and related application projects. Offered periodically.

ENGL 666: 3 s.h.**Semnr in Tchng Lit to Adolesc**

Study of a considerable body of literature suitable for adolescents of varying abilities and backgrounds, and of techniques useful in improving reading skills and developing positive attitudes toward reading. For M.Ed. majors. Offered annually.

ENGL 667: 3 s.h.**Seminar in Eng Curriculum**

Principles and processes of curriculum development and a study of exemplary curricula for English in the middle and secondary schools. For M.Ed. majors. Offered periodically.

ENGL 668: 3 s.h.**Sem Eng Ed:**

Recent research and new directions in English education. Individualized research and study. Seminar presentation of independent investigation. For M.Ed. majors. Offered periodically.

ENGL 670: 3 s.h.**Film and Media in Sec Classrm**

Examination of structures, genres and purposes of both fiction and nonfiction film, television and advertising in the context of the secondary classroom and the ways viewers should read and interpret those media. Students will learn how the effective understanding and analysis of these forms can assist them in a deeper comprehension and construction of print texts. Emphasis will be placed on interpreting these texts as a means of developing 21st-century literacies. Offered in summer.

ENGL 677: 3 s.h.**Writing Pedagogy**

Participants learn about writing instruction by engaging in a writers' workshop, via discussions, by studying adolescent writers, by exploring new teaching processes in a case study, and by reading about writing instruction. The purpose is to provide the opportunity for students to become thoughtful and effective teachers of writing, whether in a secondary context, a college or university context or an adult education context. Students work toward this goal by situating themselves in a flexible vantage point: that of the teacher-writer-researcher.

ENGL 678: 3 s.h.**The Teacher as Writer**

This course is designed for teachers K-12 who would like to grow as writers. It consists of structured participation in an on-going writing workshop where participants become increasingly sophisticated in their use of writing process strategies, conference and response skills, various genres and styles. The course includes mini-workshops from local writers and is a place where we form a community of writers as we share, listen and grow. Participants experiment with new genres and submit at least one of their pieces for publication.

ENGL 679: 1-4 s.h.**Experimental**

Experimental

ENGL 680: 3 s.h.**Digital Portfolio Workshop**

The Digital Portfolio Workshop requires students to create a professional portfolio using writing and coursework. Students will craft a portfolio that meets their individual and career goals. The workshop includes content strategies that maximize the efficacy of the Digital Portfolio schema.

ENGL 686: 3 s.h.**Topics In English**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 687: 3 s.h.**Topics In English**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 688: 3 s.h.**Special Topics in English**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 689: 3 s.h.**Special Topics In English**

In-depth investigation and development of one or more topics of current interest not normally covered in regular courses. Special topics to be covered and methods to be used will vary according to the needs of the students and faculty involved. Offered periodically.

ENGL 691: 1-3 s.h.**Independent Studies**

Intensive study of a particular field, curriculum area, or problem in English or English education. Student must petition the chairperson of the English department in writing for permission to take this course and may register for it only twice. Offered periodically.

ENGL 692: 3 s.h.**Writing Institute****ENGL 693: 3 s.h.****Writing Institute****ENGL 694: 3 s.h.****Writing Institute****ENGL 695: 3 s.h.****Writing Institute****ENGL 698: 3-6 s.h.****Research Report**

Research Report

ENGL 699: 3-6 s.h.**Thesis:**

Thesis

ENGL 9999: 0 s.h.**ENGLISH MAJORS**

Entertainment Technology (ENTC)

ENTC 208: 1-3 s.h.

Production Practicum

Experiential learning through production of entertainment and events. A practical course for live entertainment technicians and designers: Scenic/Carpentry, Costume/Wardrobe, Properties, Lighting/Electric, Sound/Audio, Video, and other entertainment technology areas. Open to all majors. 1, 2, and 3 credit sections offered regularly. Pre/Co-Req: THEA 120 – Stagecraft. Requires permission of instructor through application or interview.

ENTC 220: 3 s.h.

Theatrical Lighting & Sound

An introduction to the process of designing lighting and sound for theatre and live entertainment; develops intermediate knowledge, skills, and abilities in related entertainment technologies/equipment through practice. Students are expected to already have a foundational knowledge of entertainment/theatre technology. Prerequisite: THEA 120 - Stagecraft

ENTC 222: 3 s.h.

Vectorworks

An introduction to the use of Vectorworks software for entertainment and theatre drafting/modeling, and design documentation.

ENTC 300: 3-6 s.h.

Co-op Ed Experience in ENTC

Co-op/Internship Experience in Entertainment Technology

ENTC 300H: 3-6 s.h.

Hon: Co-op Exp in ENTC

ENTC 313: 3 s.h.

Adv Prod for Live Entertainment

An advanced study of entertainment rigging, power/data distribution, and specialty systems in entertainment technology. Students develop an understanding of higher-level creative solutions to production in entertainment. Students are expected to have a strong knowledge of entertainment technology and technical theatre. Prerequisites: THEA 120 Stagecraft and THEA/ENTC 220 Lighting & Sound.

ENTC 320: 3 s.h.

Scenic Painting

The study, exploration and practice of the materials and techniques of applying finishes, textures, decorative painting, and faux finishes as used in theatre, motion pictures, media, productions and architectural applications. Previous art experience is not required

ENTC 400: 3-12 s.h.

Co-op Ed Experience in ENTC

Co-op/Internship Experience in Entertainment Technology

ENTC 489: 1-4 s.h.

Honors Course

Honors course for Entertainment Technology

ENTC 495: 3 s.h.

Topics in ENTC

Advanced and Special Topics in Entertainment Technologies. Topics vary, course may be repeated up to four times under different titles.

ENTC 498: 1-4 s.h.

Independent Study

Independent Study

ENTC 499: 1-4 s.h.

Thesis Entertainment Technolog

Thesis in Entertainment Technology

Entrepreneurship (ENTR)

ENTR 201: 3 s.h.

The Art of Entrepreneurship (G3)

This course introduces and explores the mind-set and process of entrepreneurship in: (1) social entrepreneurship (solving social issues); (2) business entrepreneurship (starting an innovative enterprise); (3) employee entrepreneurship (as a worker in an existing business) and (4) academic entrepreneurship (the pursuit of a valuable and productive education). Emphasis will be on identifying opportunities and value, developing the art of creative problem solving and effectively expressing those solutions. Prereq: none.

ENTR 279: 3 s.h.

Experimental

ENTR 300: 3-12 s.h.

Co-Op Ed Exp in Entrepreneur

Co-Op Ed Experience in Entrepreneurship

ENTR 315: 3 s.h.

Entrepreneurship Practicum

Serves as training for entrepreneurial leadership and emphasizes experiential learning in the practice and the development of skills that are needed by entrepreneurs, including effective leadership, collaboration, planning, and communication.

ENTR 370: 3 s.h.

Media Entrepreneurship (W)

The course focuses on the major steps needed to create a for-profit or nonprofit communication-based enterprise. Emphasis on media writers creating an entrepreneurial endeavor to serve as a model for further development or continued operation.

ENTR 379: 3 s.h.

Experimental

ENTR 400: 3-12 s.h.

Co-Op Ed Exp in Entrepreneur

Co-Op Ed Experience in Entrepreneurship

ENTR 479: 3 s.h.

Experimental

Experimental Course in Entrepreneurship

ENTR 488: 3 s.h.

Capstone in Entrepreneurship

This course serves as a capstone for the Entrepreneurship Minor and provides students with the opportunity to work on either a simulated or real startup company, as well as examining case studies from leading entrepreneurs. Multidisciplinary teams of students work on mentor-defined or mentor-approved projects, from product or process conception towards commercialization. The course is intended to show what it takes to assemble teams with core competencies in different areas into a successfully functioning business organization. Teams work on a variety of issues including intellectual property, marketing, definition of a product requirements document, human factors, safety and environmental concerns, and legal matters.

ENTR 498: 1-3 s.h.

Ind Study:

ENTR 500: 3-12 s.h.

Co-Op Ed Exp in Entrepreneur

Co-Op Ed Experience in Entrepreneurship

ENTR 501: 3 s.h.

Intro to Entrepreneurship

This course offers a broad overview of the art, science, and process entrepreneurship. Course concepts addressed include Corporate, Social, and Educational Entrepreneurism. Students will investigate opportunities for developing a business while learning how to evaluate opportunities, assess overall resources, and manage growth.

ENTR 510: 3 s.h.

ENTR Promotions & Branding

The focus of this course is on helping entrepreneurs understand the fundamentals of sales promotions as well as create a brand for their business and themselves. Students will learn how to analyze direct competition, establish an online presence for the purposes of branding and gain experience with other low cost promotional techniques. Pre-Req: ENTR 501 or permission of Faculty

ENTR 511: 3 s.h.

Entre: Networking & Sales

This course introduces the Entrepreneurial tools necessary for networking and sales in ways that help create networks, through important ties including; economic, financial, consumer, social and political attitudes that can improve entrepreneurial endeavors. This course explores real-world principles that permeate the functioning of these diverse networks. Pre-requisites: ENTR 501 or permission of faculty

ENTR 512: 3 s.h.

ENTR Conflict & Negotiation

The course is designed to provide participants with the theory and skills to manage interpersonal communication conflict and negotiation in an entrepreneurial environment. Various negotiation styles will be discussed and applied to case studies and the participants' current professional relationships. The role of ethical conflict resolution, negotiation and decisionmaking will be emphasized. Existing and emerging entrepreneurs will apply conflict management and negotiation principles to interactions with current or likely future internal and external stakeholders. Prerequisite: Introduction to Entrepreneurship (ENTR 501)

ENTR 540: 3 s.h.

Entrepreneurship Capstone

As a culmination to the graduate-level certificate program in Entrepreneurship, this capstone course focuses on tying together the functional aspects of an entrepreneurial initiative to position it for growth and longevity. The course immerses the student in entrepreneurship through experiential learning and covers entrepreneurial thinking among students to develop the necessary real-world skills for founding and growing an entrepreneurial venture. Pre-Req: ENTR 501,510, 511 or permission of Faculty

ENTR 541: 1 s.h.

Topics in Entrepreneurship:

The development and exchange of scholarly information and the scope of the work shall include the exploration of current topics in entrepreneurship, which will require course registrants to engage in research and scholarly exchanges through class discussion, projects, reports, and/or papers.

Envir Hazards and Emrgncy Mgmt (EHEM)

EHEM 201: 3 s.h.

Introduction to Emergency Management (G3)

An introduction into all aspects of emergency management from the origins through the civil defense era to the present day with a look towards the future of the global aspect of emergency management. Students will learn the basics of emergency management, how to function as an effective emergency manager and how to manage an emergency management agency. Prereq: ENGL 110.

EHEM 201H: 3 s.h.

H:Intro to Emergency Mgmt (G3)

EHEM 205: 3 s.h.

Natural Hazards Risk Assessment and Mitigation

An exploration of risk assessment methodologies for natural disasters, review of natural hazard mitigation and its role in disaster management; analysis of past and current government and private sector programs; and an examination of new approaches. Natural hazard mitigation implementation approaches including those in the form of community-wide programs and to relate the hazard mitigation processes to disaster planning.

EHEM 205H: 3 s.h.

Hon: Hazards Assmt & Mitigatn

EHEM 300: 3-12 s.h.

Co-Op Ed Experience in EHEM

Co-Op Ed Experience in EHEM

EHEM 305: 3 s.h.

Disaster Management & Community Risk Reduction (G3)

Study of current trends of building disaster resilient and disaster resistant communities to prevent the size of the devastation from these disasters. An examination into prevalent legislation that controls and shapes both building construction and land use planning, technological advances for building a disaster resistant community and legal issues of community planning. Prereq: EHEM 201

EHEM 305H: 3 s.h.

Hon: Dis Mgmt & Comm Risk Redu (G3)

EHEM 309: 3 s.h.

Disaster Response & Recovery

An in-depth treatment of emergency management practices as it applies to local, state, tribal, territorial, and federal disaster response in the context of short-term and long-term community recovery. The disaster response and recovery efforts will be addressed with a foundation of statutory requirements, key concepts, core principles, roles and responsibilities of leadership ranging from the individual to the Federal government and across the public, private, and the non-profit sectors.

EHEM 309H: 3 s.h.

Hon: Disaster Resp/Recovery

EHEM 315: 3 s.h.**Business Continuity and Continuity of Operations**

Critical dependence of private and public organizations on disaster vulnerable technologies and operations as a result of natural and man-made disasters. Students will have the opportunity to review the contemporary plan development strategies and methodologies and to produce working plans that provide preventive measures to minimize the impact of all disasters and provide an organized response to ensure continuity of operations. Concepts of business continuity management system consisting of risk identification and mitigation, business impact analysis, development of continuity strategies, training and awareness, plan creation, maintenance and testing will be emphasized.

EHEM 316: 3 s.h.**Intro to Terrorism, WMD and Homeland Security (G3)**

An introduction into all aspects of terrorism, weapons of mass destruction and homeland security in our modern world. A study of the overall history of terrorism, legislation that oversees emergency management, and various methods for combating terrorism. How to manage an emergency management agency through modern age terrorism threats. Prereq: EHEM 201.

EHEM 319: 3 s.h.**Emergency Management Planning**

Provides students with an in-depth analysis of planning methodologies and constructs as well as pitfalls and limiting factors in the development and execution of emergency management plans at the strategic, operational and tactical levels. Pre-requisite EHEM 201

EHEM 329: 3 s.h.**Special Topics in Emergency Management**

In-depth investigation and development of one or more topics of current or emerging not addressed as part of the existing curriculum. Prereq: EHEM 201 or EHEM 205

EHEM 393: 3 s.h.**Field Experience Practicum**

A capstone experience in which emergency-management knowledge and skills are applied and integrated within a field experience. Those already working within an emergency-management-related career can use their current position as the basis for completing a project applicable to enhancing their current skills and applying best practices. For BS Emergency Management majors and Environmental Hazards and Emergency management minors only. Senior level and 18 credits in EHEM courses required. Permission of instructor required to enroll.

EHEM 400: 3-12 s.h.**Co-Op Ed Experience in EHEM**

Co-Op Ed Experience in EHEM

EHEM 489: 1-3 s.h.

Hnrs:

EHEM 498: 1-4 s.h.

Ind Stdy:

Ind Stdy:

EHEM 499: 1-3 s.h.

Hnrs Thesis:

Environmental Science (ENVI)

ENVI 330: 3 s.h.**Environmental Statistics & Risk Assessment**

Methods of statistical analysis and risk assessment applied to environmental science, including characteristics of environmental quality data; statistical measures and distributions; identifying system changes; hypothesis testing of environmental quality; risk, hazards and exposures; bioassays. Team-taught. Offered periodically.

ENVI 495: 3 s.h.**Environmental Clinic**

A capstone course devoted to the definition and assessment of an environmental problem from watershed, airshed, biodiversity and human health perspectives. Case studies will be used as models of how environmental problems can be defined/documented and solutions can be implemented. Student teams will define a problem and implement a solution using interdisciplinary approaches while working with a faculty team. Students are encouraged to take this course at the conclusion of the minor. Offered periodically. Prereq: 12 credits of environmental science minor.

Finance (FIN)

FIN 179: 3 s.h.**Experimental**

Experimental Finance Course

FIN 203: 3 s.h.**Personal Finance (G3)**

Theoretical tools of economics and business management are applied to personal financial planning and management. Topics include financial planning, consumer credit, budgeting, insurance, retirement and estate planning.

FIN 203H: 3 s.h.**Hon: Personal Finance (G3)****FIN 279: 3 s.h.****Experimental**

Experimental Course in Finance

FIN 342: 3 s.h.**Managerial Finance 2**

Advanced topics in corporate finance, including risk analysis of operating and financial decisions, capital budgeting and cash flow analysis. Offered fall. Prereq: MATH 235 and BUAD 206 or ECON 332 or ECON 333 and C- or higher in BUAD 341,

FIN 343: 3 s.h.**Real Estate Fundamentals**

Introduces special characteristics of real estate and how real estate decisions are made. Includes real estate terms, laws, commercial and residential markets, and property valuation. Offered periodically. Prereq: C- or higher in BUAD 341.

FIN 344: 3 s.h.**International Finance**

The international financial environment and a comprehensive analysis of foreign exchange rates and instruments. Topics include the international monetary system, balance of payments, contemporary currency trading and quotation, forward contracts, international parity conditions and foreign currency options. Offered annually. Prereq: C- or higher in BUAD 341.

FIN 345: 3 s.h.**Investment Analysis**

Analysis of investment objectives and functioning of capital markets, including market trading strategies and techniques of portfolio management. Study of stocks and bonds, mutual funds, options and futures. Offered annually. Prereq: C- or higher in BUAD 341.

FIN 346: 3 s.h.**Princip of Bank Administration**

Bank investment practices, liquidity management, deposits acquisition and administration, branch location decisions, optimal bank capital, mathematical model in banking, management science in banking, computers and checkless banking. Offered periodically. Prereq: C- or higher in BUAD 341.

FIN 347: 3 s.h.**Risk and Insurance**

Introduces principles and mechanics of insurance. Includes the conceptual and historical framework of insurance and the actual mechanics of insurance risk management as they pertain to personal and business needs. Offered periodically. Prereq: C- or higher in BUAD 341.

FIN 379: 3 s.h.**Experimental**

Experimental Course in Finance

FIN 405: 3 s.h.**Topics in Finance**

Advanced, innovative, or exploratory topics and disciplines within finance. Specific content items developed by instructor. Most topics will be for business majors only. Offered periodically. Prerequisites may vary. Consult the current course offering.

FIN 422: 3 s.h.**Behavioral Finance**

A comprehensive examination of the relatively new discipline of behavioral finance. Designed to expose students to the decision-making biases that cause investors and managers to deviate from actions predicted by economic and financial models, and that cause financial markets to behave in ways counter to these theories. Experiments are used throughout the semester to help students better understand the effects of human behavior and conflicting goals on individual investors and market outcomes. Prerequisites a C- or better in FIN203 and BUAD341.

FIN 445: 3 s.h.**Financial Markets**

Classical and modern thought on markets. Numerous modern markets are investigated in terms of functionality, strategy and development. Offered annually. Prereq: ECON 101 and C- or higher in BUAD 341.

FIN 447: 3 s.h.**Cases in Finance (W)**

Continuation of the study of financial theory and its application using the case method. Real-world financial problems for which elementary or traditional analysis may be deficient. Emphasizes the interrelationship of finance to other areas of study (such as marketing, personnel). Offered spring. Prereq: C- or higher in FIN 342 and ENGL 110.

FIN 479: 3 s.h.**Experimental**

Experimental Course in Finance

FIN 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

Foreign Language (FORL)

FORL 001: 0 s.h.**Summer Institute:**

Summer Institute:

FORL 179: 1-3 s.h.**Experimental**

Experimental

FORL 279: 1-3 s.h.**Experimental**

Experimental

FORL 300: 3-12 s.h.**Co-Op Ed Experience in For Lan**

Co-Op Ed Experience in For Lan

FORL 480: 3 s.h.**Tchg For Lang in Sec School**

Study of current theories of second language acquisition and methods of teaching foreign languages in elementary and secondary schools. Students will develop techniques for teaching language for proficiency in all skill areas; planning lessons and units; selecting, adapting and developing materials; assessment; and the use of new technologies. Must be taken simultaneously with EDSE 321, EDSE 340, EDFN 330 and SPED 346. Offered in fall. Prereq: admission to Advanced Professional Studies, SPAN 470 or FREN 470 or GERM 470.

FORL 498: 1-9 s.h.**FORL Independent Study**

Independent Study for Foreign Languages (no specific language)

French (FREN)

Geography (GEOG)

GEOG 101: 3 s.h.**The Global Environment (G3)**

Global survey of human environment interactions focusing on people's use of natural resources and major related issues, including scarcity and environmental impacts. Comparisons between developing and developed countries and across cultures.

GEOG 120: 3 s.h.**Human Geography (D, G3)**

Cultural geography of race, ethnicity, gender and political systems. Emphasis on processes that create and maintain cultures and the geographies that these processes produce. Offered in spring.

GEOG 123: 3 s.h.**Place and Identity (G1)**

Introduction to humanistic geography through an examination of the foundational geographical concepts of place and human identity. 'Place', and its close corollary 'identity', are explored chronologically beginning with the philosopher-geographers of ancient Greece and Rome, through to modern social and political philosophies of the 19th and 20th centuries. Cross cultural examples are used to illustrate the nature of place as a fundamental element of everyday human experience of the world.

GEOG 130: 3 s.h.**Intro to Environmental Science (G2)**

Introduction to the scientific concepts, principles, and methodologies that underlie environmental change and environmental sustainability. Emphasis on the spatial scale and interconnection of multiple environmental processes, the effects of human activities on environmental processes, and the technical and scientific methods for their assessment and analysis.

GEOG 130H: 3 s.h.**Hon: Intro to Environ Science (G2)****GEOG 141: 3 s.h.****World Regional Geography (G3)**

Spatial patterns of environmental, cultural, social, economic and political developments in selected regions of the world. Emphasis on developed and less developed parts of the world.

GEOG 202: 3 s.h.**Environmental Sustainability (G3)**

Investigation of problems that have arisen through human use of earth's resources, and the technical, economic, policy, and social options available to us. Offered in fall, spring.

GEOG 222: 3 s.h.**Economic Geography (G3)**

Location of economic activities in different environmental settings. The growth of global economic interdependence. Economic growth and development strategies in a regional framework. Economic versus environmental trade-offs. Offered in summer.

GEOG 223: 3 s.h.**Health, Gender, Race & Class (G3)**

Introduction to the geographical distribution of select contemporary diseases and their relationships to other health care issues. Distribution of, and access to, scarce health care resources along with impacts of gender, race, and class on human life chances at global (especially developed versus developing countries), regional and local (such as urban versus rural) scales are evaluated.

GEOG 226: 3 s.h.**Political Geography (D, G3, W)**

Political boundaries of the world map. Covers violent conflicts from which countries were formed. Colonization (1400-1900), decolonization (1800-1970) and the Cold War are discussed. Offered in fall, spring. Prereq: ENGL 110.

GEOG 226H: 3 s.h.**Hnrs:Political Geography (D, G3, W)**

Hnrs:Political Geography. Offered in fall.

GEOG 227: 3 s.h.**Cities (G3)**

City development is described and explained in a global context. The US city system is explained and compared to European, Asian and African urban systems. Contemporary city problems (gentrification, urban decline, segregation, etc.) are discussed.

GEOG 228: 3 s.h.**Geography of Sport (G3)**

Using a geographical basis, the course will examine a variety of topics, including landscapes of modern sport; place and space in sport; institutions and spatial organization of sport; and sport, politics and development. Offered periodically.

GEOG 229: 3 s.h.**Sustainable Tourism (G3)**

An investigation of the areal distribution of recreation and tourist activities and their positive and negative impacts; emphasis on environmental and economic aspects of leisure within a locational framework. Planning methodology to alleviate problems and create higher-quality recreational experiences. Offered infrequently.

GEOG 230: 3 s.h.**Physical Geography (G2)**

Study of the Earth's physical environment, including atmosphere, hydrosphere, lithosphere and biosphere. Viewing the Earth as an integrated system, global patterns and processes are analyzed. Offered annually.

GEOG 242: 3 s.h.**London (G3)**

Using London as the core of the class, students will be introduced to basic geographic concepts and methods of analysis. Despite the focus on one city, London, the course will take a thematic approach towards geographical inquiry (map interpretation, urban planning, migration, segregation, industrial development, political geography and empire building) London's twentieth century industrial decline will be used to illustrate broader themes of global economic competition.

GEOG 245: 3 s.h.**Geography of Pennsylvania (G3)**

Introduction to the geography of Pennsylvania, using the tools and concepts of regional geography. Physical, cultural and economic landscapes and resulting social and environmental issues are examined.

GEOG 245H: 3 s.h.**Hon: Geog of Pennsylvania (G3)****GEOG 248: 3 s.h.****Geography of Africa (D, G3)**

The course uses a thematic approach to examine many of the subfields of geography as they pertain to Africa. Topics include the physical landscape, climate, vegetation, environmental issues, precolonial and colonial history, politics, culture, population, urbanization, agricultural and economic development, and medical gender issues. Offered periodically.

GEOG 248H: 3 s.h.**Hon: Geography of Africa (D, G3)****GEOG 278: 3 s.h.****Transportation Geography (G3)**

Transportation is defined as the movement of goods and people from place to place. This course introduces the principles underlying these movements, with discussion of the economic, social and environmental impacts. Offered periodically.

GEOG 279: 3 s.h.**Experimental**

Experimental Course in Geography

GEOG 281: 3 s.h.**Maps and GIS (G3)**

Thorough examination of maps as tools for representing Earth dimensions, depicting landscapes and displaying data. Use Geographic Information Systems (GIS) mapping software to make a variety of effective maps.

GEOG 289: 3 s.h.**Field and Research Methods in Geography (W)**

Introduction to the theory, process, and methodology used to collect and analyze data, and conduct and communicate research within the multidisciplinary context of geographic inquiry.

GEOG 292: 3 s.h.**Quantitative and Spatial Analysis (G2)**

Analysis of spatial and other geographical data using descriptive statistical measures, probability and sampling, and inferential statistical methods. Emphasis on geographical problem solving. Prereq: GEOG 281, and MATH 130 or higher, or MPT 151 or higher, or MATH 101.

GEOG 295: 3 s.h.**GIS I: Vector Data Analysis (G2)**

Introduction to Geographic Information Systems (GIS) computer technology, theory, and methodology focusing on vector data models. Combines understanding of geographic data and research with experience in digital mapping, geographic databases, and spatial analysis. Offered in fall, spring. Prereq: GEOG 281.

GEOG 296: 3 s.h.**GIS II: Raster Data Analysis**

Introduce students to the fundamental concepts of Raster GIS. Topics will include: the physical basis for remote sensing, the extraction of information contained within energy, remote sensing instrumentation, aerial photography, photogrammetry, digital image processing, data structure, database design, and spatial data analysis. Land-based environmental resources and sustainability applications.

GEOG 296H: 3 s.h.**H: GIS II: Raster Data Analysis****GEOG 300: 3-12 s.h.****Co-Op Ed Experience in Geog**

Assignment with a public agency or private organization. Requirements include design of an approved job description relevant to employer's functions and student's program, and a planned program of contact with the faculty supervisor. Performance evaluation by sponsor used in assigning satisfactory/unsatisfactory grade.

GEOG 302: 3 s.h.**Food System Sustainability (G3, W)**

Examines the attendant economic, social and environmental impacts of our food system. Key areas of policy influence on our food system and sustainable interventions for transforming our food system will also be addressed. Offered periodically. Prereq: ENGL 110; GEOG 101 or GEOG 130 or GEOG 202 or permission of instructor.

GEOG 304: 3 s.h.**Water Resources Management (G3)**

An interdisciplinary study of how we plan, manage and use water. Topics range from water law to hydrology. Offered periodically. Prereq: GEOG 101 or 202.

GEOG 305: 3 s.h.**Energy Sustainability (G3, W)**

Explores energy production and consumption from geographic and sustainability perspectives. The social, economic and environmental impacts of traditional and alternative energy resources will be examined. Options for a sustainable energy future in different geographic locations will be addressed. Offered periodically. Prereq: ENGL 110; GEOG 101 or GEOG 202 or permission of instructor.

GEOG 305H: 3 s.h.**Hon: Energy Sustainability (G3, W)****GEOG 306: 3 s.h.****Environmental Impact Assessment**

The various regulatory requirements and technical methods for developing federal environmental-impact statements for air, water, biological and socioeconomic environments. Offered periodically. Prereq: GEOG 202 and 230 or permission of instructor.

GEOG 307: 3 s.h.**US Environmental Policy (G3)**

Federal environmental legislation; the relationship between local, state and federal agencies in policy formation and implementation; industry responsibilities and options under existing law; the role of interest groups and the public in environmental decision making and U.S. engagement in emerging international environmental policy debates. Offered in fall of odd years. Prereq: junior or senior status; GEOG 101 or 202 or GOVT 205 or ECON 102 or permission of instructor.

GEOG 333: 3 s.h.**Biogeography (G3)**

Interactions between environmental, biological and human factors which have led to current geographical distributions of flora and fauna. Field trip required. Offered periodically. Prereq: GEOG 230 or BIOL 100 or permission of instructor.

GEOG 336: 3 s.h.**Climate And Society (G3)**

Human interrelationships with the atmospheric environment. Includes microclimatological applications in agriculture, water resources, human health and architecture to analysis of global climate-change issues. Offered periodically. Prereq: GEOG 230 or ESCI 107 or permission of instructor.

GEOG 342: 3 s.h.**Europe (G3, W)**

Introduction to Western Europe as a region. Emphasis on its delimitation and cultural, economic and political spatial patterns relating to the desire to form a European community. Europe within a global framework also considered. Offered in winter, spring, summer. Prereq: ENGL 110.

GEOG 343: 3 s.h.**Latin America & the Caribbean (P)**

A thematic study of the physiographic and cultural regions of Latin America and the Caribbean. Historical, economic, political, social, and environmental geography approaches to studying regional characteristics. Select topics include population change, land use change, urban development, economic development, environmental sustainability, and human rights. Offered periodically. Prereq: COMM100; ENGL110; and junior or senior status.

GEOG 344: 3 s.h.**North America (G3)**

Geography of the U.S. and Canada using the tools and concepts of regional geography. Physical, population and economic patterns are merged in developing an understanding of regional characteristics and issues.

GEOG 350: 3 s.h.**Global Issues (G3)**

Issues related to urban, cultural and resource problems are analyzed globally. Emphasis on spatial nature of these problems and emerging global interdependence. Focus on a single current issue, which will be identified in advertised course title. Offered periodically.

GEOG 372: 3 s.h.**Urban and Regional Planning (G3)**

Introduction to land use and other types of planning in urban and rural areas. Assessment of development suitability and environmental impact. Techniques for implementing different types of plans. Offered annually.

GEOG 379: 3 s.h.**Experimental**

Experimental

GEOG 384: 3 s.h.**Cartography**

Introduction to concepts and techniques of mapmaking. Skill developed in computer-based compilation, layout and lettering of maps. Offered periodically. Prereq: GEOG 281, 295.

GEOG 395: 3 s.h.**GIS for Web Development**

Integrate GIS and Web development technologies. Implement data compilation and map design decisions to support an organization's internal and public information flows. Incorporate interactive maps and information retrieval to enhance Web content. Prerequisites: GEOG 295 or ESCI 281, and DESN 247 or CSCI 121.

GEOG 396: 3 s.h.**GIS Modeling**

Analyze and construct GIS-based models of various geographical scenarios. Strategize spatial and temporal problem solving in environmental, transportation, emergency management and other contexts. Adapt some models to computer algorithms used within GIS software. Prerequisites: GEOG 295 or ESCI 281, and GEOG 296, and CSCI 161 or ESCI 282, or permission. Offered fall of even-numbered years.

GEOG 397: 3 s.h.**GIS Data Management**

Fully explore the GIS geodatabase model and related data structures, and how they encapsulate all data types, characteristics and capabilities. Assess data quality and long-term data management issues.

GEOG 400: 3-12 s.h.**Co-Op Ed Experience in Geog**

Assignment with a public agency or private organization. Requirements include design of an approved job description relevant to employer's functions and student's program, and a planned program of contact with the faculty supervisor. Performance evaluation by sponsor used in assigning satisfactory/unsatisfactory grade.

GEOG 407: 3 s.h.**Glbl Envrnmtl Policy/Negotiatn (G3, W)**

Global political and economic forces and environmental change. Emphasis on spatial patterns and processes of transboundary environmental problems, the major pieces of international environmental policy, the negotiations process between states and nonstate actors in policy formation and implementation, and the dynamics of North-South relations on the changing physical landscape. Offered in spring of even years. Prereq: junior or senior status; ENGL 110, GEOG 307 or permission of instructor.

GEOG 408: 3 s.h.**Sustainable Development (D, P)**

Social, economic, and environmental aspects of global sustainable development. Class discussion integrated with research and service learning projects. Prereq: COMM 100, ENGL 110, and junior or senior standing.

GEOG 479: 3 s.h.**Experimental**

Experimental

GEOG 488: 1-3 s.h.**Senior Thesis**

Investigation of selected topic with individual research assignment; focus varies but related to geographical analysis. For senior Geography majors only. Prereq: senior standing and completion of basic courses. Offered as needed.

GEOG 489: 1-4 s.h.**Honors Thesis**

Investigation of selected topic with individual research assignment; focus varies but related to geographical analysis. Prereq: senior standing and completion of basic courses and eligibility for departmental honors. See Special Academic Opportunities, Departmental Honors section of this catalog.

GEOG 498: 1-3 s.h.**Independent Study**

Investigation of selected topic with individual research assignment; focus varies.

GEOG 499: 1-4 s.h.**Departmental Honors**

Investigation of selected topic with individual research assignment; focus varies but related to geographical analysis. Prereq: senior standing and completion of basic courses and eligibility for departmental honors. See Special Academic Opportunities, Departmental Honors section of this catalog.

GEOG 500: 3-12 s.h.**Co-Op Ed Experience in Geog**

Co-Op Ed Experience in Geog

GEOG 579: 3 s.h.**Experimental**

Experimental

German (GERM)

Gerontology (GERT)

GERT 100: 3 s.h.**Introduction to Gerontology (G3)**

An introduction to the field of aging and examination of the physiological, sociological, psychological and economic perspectives. This course also focuses on problems of the aged at levels of self, interactions with others and the broader societal context. Offered in spring of even years.

GERT 179: 3 s.h.**Experimental**

Experimental

GERT 210: 3 s.h.**Aging and the Law (G3)**

Introduction to legal concepts and thinking. Study of the laws, regulations, social policies and psychological factors that affect delivery of service to the elderly in the areas of economic security, employment, health care, wills, mental health, housing, criminal justice, consumer protection. Offered periodically. Prereq: ENGL 110.

GERT 279: 3 s.h.**Experimental**

Experimental

GERT 300: 3-12 s.h.**Co-Op Ed Experience in Gert**

Supervised practicum at cooperating agencies and organizations active in serving the elderly, for a minimum of 150 hours (10 hrs./week). Involvement in meeting physiological and/or psychological and/or social needs of the elderly. Prereq: GERT 100 and at least 30 s.h. of general education and gerontology courses. Faculty involvement in and approval of practicum plan. Malpractice liability insurance required.

GERT 379: 3 s.h.**Experimental**
Experimental**GERT 400: 3-12 s.h.****Co-Op Ed Experience in Gert**
Co-Op Ed Experience in Gert**GERT 479: 3 s.h.****Experimental**
Experimental**GERT 500: 3-12 s.h.****Co-Op Ed Experience in Gert**
Co-Op Ed Experience in Gert

Gifted Education (GFED)

GFED 370: 3 s.h.**Teaching Gifted Learners**

Designed to acquaint prospective teachers with some viable techniques for dealing with gifted and able children in their classrooms. Some attention will also be paid to reviewing existing programs and means of identification. Some work with gifted students in the schools will be another component of the course. Offered annually.

GFED 377: 3 s.h.**The Gifted in Pop Culture (D, P)**

This course will introduce students to various characteristics, issues and needs of gifted individuals. Through the lens of popular culture media (e.g., film, television, graphic novels, literature) portrayals of fictional gifted characters will be examined in regards to topics such as identification, education, socialization, gender, ethnicity, poverty and disability. These portrayals will then be juxtaposed with current research to gain an authentic understanding of this group and their unique needs. Pre-requisites: ENGL 110 or ENGL 110H, COMM 100 or COMM 100H and 60 credits (Junior Standing).

GFED 377H: 3 s.h.**Hon: Gifted in Pop Culture (D, P)****GFED 670: 3 s.h.****Psychology of the Gifted**

Covers diverse elements in psychology that converge in the study of giftedness. The early studies of Terman will give a historical perspective leading to an exploration of developments in the areas of measurement, individual differences and multifactorial views of intelligence. Emphasis will be placed upon the literature on creativity and problem solving. The contribution of humanistic psychology which gives a sense of process or personal growth and of achievement will be explored.

GFED 674: 3 s.h.**Program for the Gifted**

Designed for in-service teachers pursuing a master's degree in gifted education or for those teachers with special interest in educating the gifted and talented. In-depth exploration of six components of gifted programs: definition of gifted, identification of the gifted, curriculum, teacher selection, program organization, and management.

GFED 675: 3 s.h.**Eval Instructionl Effectivness**

An advanced course dealing with ways to evaluate the achievement of gifted and able students. Attention will be paid to interpretation of relevant research pertaining to the instruction and identification of gifted and able students. Prereq: GFED 674 or permission.

GFED 676: 3 s.h.**Tchg Gftd Lrnrs:Instruct Strat**

Prepares teachers to identify and use appropriate instructional and curricular strategies to meet the needs of gifted and talented learners. Best practices and current research on instructional pedagogy for the gifted and talented will be examined and implemented. Appropriate informational technology will be used to research, plan and implement instructional strategies for gifted and talented learners.

GFED 686: 3 s.h.**Topics in Gifted Education**

Possible topics include creativity, motivation, management of gifted programs, research, etc. Participants may take this course more than once. Topics vary each year and are taught by faculty from various departments.

GFED 687: 3 s.h.**Topics in Gifted Education**

Possible topics include creativity, motivation, management of gifted programs, research, etc. Participants may take this course more than once. Topics vary each year and are taught by faculty from various departments.

GFED 688: 3 s.h.**Topics in Gifted Education**

Possible topics include creativity, motivation, management of gifted programs, research, etc. Participants may take this course more than once. Topics vary each year and are taught by faculty from various departments.

GFED 690: 3,6 s.h.**Clinical Practicum**

Practical application of curriculum models and strategies for gifted students. Production of materials/units to be used in the classroom. Direct instruction of gifted youngsters will be required. Prereq: GFED 674 or permission.

GFED 691: 1-3 s.h.**Ind Stdy: Gifted Education**

Independent Study in Gifted Education

GFED 699: 3,6 s.h.**Thesis**

Thesis. Prereq: 24 graduate s.h.

Government, Policy, and Law (GOVT)

GOVT 100: 3 s.h.**Politics and Popular Culture (G3)**

Demonstrates and analyzes the reciprocal relationship between politics and popular culture, both within the United States and globally.

GOVT 111: 3 s.h.**Introduction to American Government (G3)**

Introduction to the major tenets of the American political system.

GOVT 112: 3 s.h.**Introduction to State and Local Government (G3)**

The federal system and state and local governmental problems. Emphasis on Pennsylvania when possible.

GOVT 179: 3 s.h.**Experimental**

Experimental

GOVT 205: 3 s.h.**Introduction to Public Policy (G3)**

Decision making by governments in response to public problems. The policy process. Current policy issues, selected from such possible examples as education, abortion, energy and environment. Some problems of policy evaluation.

GOVT 211: 3 s.h.**Introduction to the U.S. Constitution (G3)**

An introduction to the U.S. Constitution, with specific attention on its purpose, principles, parts, and theories of interpretation. GOVT 111 highly recommended prior to this course.

GOVT 212: 3 s.h.**Women & American Politics (G3, W)**

Examines the role of women in American political institutions including the legislature, executive, and judiciary, the factors which impact women's participation in politics, and the consequences for issues which concern women such as abortion, pay equity, and paid family leave.

GOVT 221: 3 s.h.**Introduction to Comparative Political Systems (G3)**

Introduction to the comparative analysis of government and politics through an examination of different political systems including advanced democracies and developing nations.

GOVT 225: 3 s.h.**Modern China (G3)**

Study of political development in China, with an emphasis on political behavior, culture, institutions, processes and structure.

GOVT 228: 3 s.h.**Democracy and Its Challenges (W)**

An exploration into the entire process of democratization, from the conditions that allow democracy to emerge through the stages of democratization towards the post-democratic challenges faced around the globe.

GOVT 231: 3 s.h.**Introduction to Political Theory (G3, W)**

Representative philosophers and concepts in the history of Western political theory from antiquity through the 19th century.

GOVT 231H: 3 s.h.**Hrs: Intro Political Theory (G3)**

Hrs: Intro Political Theory

GOVT 232: 3 s.h.**Political Theory, Literature, and Film (G3, W)**

Uses literature and film to explore central topics in political theory such as capitalism, socialism, democracy and its problems, technology and its problems, etc. Prereq: ENGL 110

GOVT 241: 3 s.h.**Public Administration and Public Service (G3, W)**

A study of intergovernmental relations, organizational theory, decision making, personnel, management, budgeting, program evaluation and policy analysis. Prereq: ENGL 110. Recommended: GOVT 111.

GOVT 251: 3 s.h.**Introduction to Global Politics (G3)**

The nation-state system. Military, political, economic, organizational and legal relations among states. Power and the pursuit of national goals.

GOVT 252: 3 s.h.**Global Crime and Justice (G3)**

Explores the increasingly transnational nature of crime (including global crimes such as human, arms and drug trafficking), the consequent impact upon human security and sustainable development, and international legal responses. Also addresses the legal distinctions and connections between global and international crimes, the latter including terrorism and crimes against humanity. Open to all majors.

GOVT 279: 3 s.h.**Experimental**

Experimental

GOVT 300: 3-12 s.h.**Co-Op Ed Experience in GOVT**

Co-Op Ed Experience in GOVT

GOVT 312: 3 s.h.**American Political Parties (G3, W)**

The origins of American political parties. The American two party system. Political parties in American campaigns and elections. The role of political parties in American governance. The role of third parties in America. Prereq: ENGL 110. Recommended: GOVT 111.

GOVT 312H: 3 s.h.**Honors: American Political Parties (G3, W)****GOVT 313: 3 s.h.****American Presidency (G3, W)**

Examination of the presidency and the executive branch of national government. Emphasis on the growth and development of presidential power. Prereq: ENGL 110.

GOVT 314: 3 s.h.**American Judiciary (G3, W)**

Examination of state and federal courts. Primary emphasis on federal courts and especially the U.S. Supreme Court. Recommended: GOVT 111.

GOVT 315: 3 s.h.**Congress and Lawmaking (G3, W)**

A study of the organization, rules and procedures of the Senate and House of Representatives and extensive analysis of the internal and external environment for policy making by Congress. State legislatures are also examined in the same manner. Prereq: ENGL 110. Strongly recommended: GOVT 111.

GOVT 323: 3 s.h.**Government and Politics of the Middle East (D, G3)**

Examination of Middle Eastern politics, including the political systems of Israel, the Palestinian national movement, Iraq, Jordan, Saudi Arabia, Turkey, Syria, and Iran. It assumes a comparative approach toward several regional issues, such as terrorism, the Palestinian-Israeli conflict, Islamic fundamentalism and the peace process. The impact of national, economic, gender and religious perspectives upon the region's politics will also be addressed. GOVT 221 recommended.

GOVT 325: 3 s.h.**Modern Asia (G3)**

Study of political development across East Asia, with an emphasis on political behavior, culture, institutions, processes and structure.

GOVT 327: 3 s.h.**Canadian Government and Politics (P)**

Government and politics of Canada and an examination of how its geography, history, economics and culture have affected its governance. Consideration of major policy issues and their impact on Canada's future. Prereq: COMM 100, ENGL 110 and junior status.

GOVT 327H: 3 s.h.**Honors: Canadian Government and Politics (P)****GOVT 331: 3 s.h.****Modern Political Thought**

This course will examine political thinkers from Machiavelli to Nietzsche. Among others, it will explore the thought of Hobbes, Locke, Rousseau, Marx, Hume, etc. The course will explore questions regarding human nature, the ideal state, the tensions between principles of freedom and equality, critique of existing systems, etc. Prereq: GOVT 111, Prereq/ Coreq: GOVT 231.

GOVT 332: 3 s.h.**Contemporary Politics (G3, W)**

Examines the principles and ideologies found in current politics. Includes an examination of progressivism, communism, conservatism, multiculturalism, etc.

GOVT 333: 3 s.h.**American Political Thought (G3, W)**

Study of the history and development of democracy in an American setting. Emphasis on different and often conflicting versions of democratic theory and practice. Prereq: ENGL 110

GOVT 341: 3 s.h.**Introduction to City Planning (P)**

Study of the dynamics of human settlement patterns in the country and abroad. Examines public policy alternatives regarding land use and development patterns. Introduces methods and techniques used in designing settlement systems and studies values reflected in human settlement patterns. Prereq: COMM 100, ENGL 110 and junior status.

GOVT 351: 3 s.h.**International Law**

Classical sources and recent developments in international law. Evaluation of law in the context of world politics. Recommended: GOVT 251.

GOVT 351H: 3 s.h.**Honors: International Law**

H:International Law

GOVT 352: 3 s.h.**International Organizations (G3)**

Study of various intergovernmental and nongovernmental associations representing a number of multinational groupings serving humanitarian, economic and security functions. Emphasis on organizations such as the United Nations and the European Union. Recommended: GOVT 251.

GOVT 355: 3 s.h.**American Foreign Policy (G3)**

Institutional and historical overview of American foreign policy. Formal, informal and institutional sources of foreign policy. Emphasis on post-WWII presidential administrations. Recommended: GOVT 111 or GOVT 251.

GOVT 355H: 3 s.h.**Honors: American Foreign Policy (G3)**

Hrs:American Foreign Policy

GOVT 356: 3 s.h.**Disasters and Our World (P)**

Provides a multi-perspective and global exploration into why there is no such thing as a "natural" disaster. The political, economic, social and environmental sources of vulnerability to such events will be explored along with the role disasters play in some of the 21st century's most pressing global policy challenges. Open to all majors. Prereq: ENGL 110, COMM 100 and Junior Class Standing. Students who completed GOVT 408.02: Disasters and Global Politics in Fall 2019 are not eligible to earn credit for this course.

GOVT 361: 3 s.h.**Politics of Race and Ethnicity (D, G3)**

Examination of the role of racial and ethnic minority groups in American politics and government. Focus on political resources and political status of ethnic minority groups in America, ethnic minority group representation and participation in American politics, the racial divide in American public opinion, racial politics in America's cities and strategies of ethnic minority political empowerment. Prereq: GOVT 111.

GOVT 379: 3 s.h.**Experimental**

Experimental

GOVT 379H: 3 s.h.**Honors: Experimental****GOVT 400: 3-12 s.h.****Co-Op Ed Experience in GOVT**

Co-Op Ed Experience in GOVT

GOVT 401: 3 s.h.**Political Research Skills and Methods**

Knowledge and application of the Scientific Method in political research. Focus on empirical research, explanation and causation, measurement, hypothesis testing, and the challenges of conducting political research.

GOVT 408: 3 s.h.**Seminar in Government, Policy and Law**

Analysis of critical problems in the discipline. Research and preparation of a written report. Seminar may be taken for credit more than once, provided content is different each time.

GOVT 408H: 3 s.h.**Honors: Seminar in Government, Policy, and Law****GOVT 411: 3 s.h.****Constitutional Law: Federalism and Separation of Powers**

Focus on the allocation of power between branches and among levels of government, as interpreted through significant cases of the U.S. Supreme Court. Prereq: GOVT 111. Recommended: GOVT 314.

GOVT 411H: 3 s.h.**Honors: Constitutional Law: Federalism and Separation of Powers****GOVT 412: 3 s.h.****Constitutional Law: Civil Rights and Civil Liberties**

Focus on individual rights and liberties protected by the U.S. Constitution and Bill of Rights, as interpreted through significant cases of the U.S. Supreme Court. Prereq: GOVT 111. Recommended: GOVT 314.

GOVT 412H: 3 s.h.**Honors: Constitutional Law: Civil Rights and Civil Liberties**

GOVT 431: 3 s.h.**Literature and Politics (W)**

This course will take one work of fiction, a particular author/writer, or a number of different works of fiction which are thematically connected, and examine the political, social, and cultural questions and issues embedded in these works. Political philosophy asks central questions about human life- what makes us human; what, if anything, makes the best state; how can humans live together while being individuals in their own right, etc. Well crafted works of political fiction are often the best gateway to politics since they use a fictional reality to develop abstract concepts. In fact, some of the best works of political philosophy is fiction. Instructors will choose works of fiction which, juxtaposed with political writings, speeches, articles, and texts, enable students to identify and answer the great political questions of generations. Prereq: C- or higher GOVT 111 and GOVT 231

GOVT 455: 3 s.h.**US-Middle East Foreign Relations (W)**

An institutional, historical and contemporary overview of American foreign policy in the Middle East. While key events and political processes equated with the post-World War II period will be examined, the focus of GOVT 455 will be on current US interests and policies within the region. Past events will be utilized to underscore their contemporary political relevance to US policymakers. Specifically, American policy vis-a-vis Israel, the Palestinian national movement, Egypt, Iran, Iraq, Saudi Arabia, Turkey, and Syria will be explored in detail.

GOVT 456: 3 s.h.**Global Humanitarianism (W)**

Explores the complex landscape of international humanitarian assistance, including its political, economic, governance and ethical challenges, as well as its historical evolution. It will prepare students for direct entry into a related field, post-graduate study or becoming an international aid or development volunteer. Prereq: ENGL 110, GOVT 251 OR INTL 201 and Junior class standing or permission of instructor.

GOVT 479: 3 s.h.**Experimental**

Experimental

GOVT 489: 1-4 s.h.**Honors Course**

Honors Course

GOVT 498: 1-6 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

GOVT 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

GOVT 500: 3-12 s.h.**Co-Op Ed Experience in GOVT**

Co-Op Ed Experience in Government, Policy and Law

GOVT 586: 3 s.h.**Goethe Institut**

Goethe Institut

History (HIST)

HIST 101: 3 s.h.**Europe and the World 1350-1789 (G3)**

Europe and its world relationships during the centuries of the Reformation, the scientific revolution, overseas expansion and revolution. Offered in fall, spring.

HIST 102: 3 s.h.**Europe and World 1789-Present (G3)**

Europe and its world relationships in the age of industrialization and democratization. Offered in fall, spring.

HIST 105: 3 s.h.**History Matters**

An introduction to the study of history as an academic discipline (a major) and as a profession (a career) with a focus on research, interpretation, and teaching.

HIST 105H: 3 s.h.**Hon: Craft of History****HIST 106: 3 s.h.****Contours of US History (G3)**

A survey of United States history from the peopling of the Americas to the present. Identifies and examines the key themes in the creation and transformation of the nation and its peoples. Offered in fall, spring.

HIST 107: 3 s.h.**Pre-Modern World Cultures (G3)**

General survey of world history and culture from known beginnings to 1500. Intended for nonmajors. Offered periodically. Equivalent course HIST 206: No credit given if credit earned for HIST 206. Offered annually.

HIST 179: 3 s.h.**Experimental**

Experimental

HIST 200: 3 s.h.**Reimagining Holidays & Heroes (G3)**

Content-based inquiry into the celebration of US holidays and heroes. Course covers American Revolution and founding of the United States, Indigenous America since pre-Columbian interactions, and a history of Blacks in America from 1619 to the present.

HIST 205: 3 s.h.**The Art & Craft of History**

An intermediate investigation of the practices of historical investigation: formulation of research queries, location and analysis of evidence, and analytical narration of findings. Prereq: HIST 105 with a grade of C- or higher.

HIST 206: 3 s.h.**World Culture & Religion to 1500 (D, G3, W)**

Survey of world history from known beginnings to 1500. Offered annually. Equivalent course HIST 107: No credit given if credit earned for HIST 107. Prereq: ENGL 110.

HIST 213: 3 s.h.**Greeks and Romans (G3)**

This course considers the social, political and economic history of Ancient Greece and Rome. No prior knowledge of history is necessary.

HIST 214: 3 s.h.**History of Christianity (D, G3)**

Examines the formation of early Christianity, the spread of Christianity from the Roman Mediterranean through Asia, Africa, and Europe, and the major issues of European Reformation.

HIST 215: 3 s.h.**Slaves & Masters Ancient World (G3)**

Considers the social, political and economic factors concerning the practice of slavery in ancient world cultures. No prior knowledge of history is necessary.

HIST 215H: 3 s.h.**Hon: Slaves/Master Ancient Wrl (G3)****HIST 216: 3 s.h.****Vikings (G3)**

Considers the social, political and economic history of the Viking explorers and their society. No prior knowledge of history is necessary.

HIST 216H: 3 s.h.**Hon: Vikings (G3)****HIST 218: 3 s.h.****People and the Environment (G3, W)**

This course offers an introduction to the methods and insights of environmental history in Europe and the Americas from 1500 to the present. It examines developments in Europe, with background in medieval dynamics and a focus on the period from 1500 onward, through 18th-century projects that cleared land and drained swamps, 19th and 20th century industrialization, World Wars I and II, and the post-World War II era. It also discuss the European colonization of the Americas, with background on Indian use of the land before contact with colonists.

HIST 222: 3 s.h.**Modern Britain (G3)**

Modern England: the political, social, economic and cultural evolution of England from 1688 to the present. Offered annually.

HIST 222H: 3 s.h.**Hnrs: Modern Britain (G3)****HIST 223: 3 s.h.****Traditional Germany (G3, W)**

The evolution of the German people and their political, cultural and socio-economic institutions from Roman times to 1806. Offered annually. Prereq: ENGL 110.

HIST 224: 3 s.h.**Modern Germany (G3, W)**

German history from 1806 to the present. Offered annually. Prereq: ENGL 110.

HIST 225: 3 s.h.**Germany, 1945-Present (G3, W)**

This course examines the transformation of Germany from 1945, when, at the end of World War II, there were four occupational zones and no German state, through the era of two German states, East and West, from 1949 to 1990, to the present post-reunification Germany. The events of the Third Reich, World War II, and the Holocaust will form a backdrop to much of this history, and we will quickly review them. Then, the course focuses on the activities of the four occupying powers (the United States, the Soviet Union, Great Britain, and France) in the post-war years, the emerging Cold War, the formation of East and West Germany, developments from the 1950s to the 1980s, the collapse of East Germany and reunification, and post-reunification developments. Prerequisites: ENGL 110 or ENGL 110H

HIST 230: 3 s.h.**Modern Jewish History (G3, W)**

Survey of the history of Jews in the mid 18th-20th centuries. Course designed to enrich students' historical and cultural knowledge and improve students' understanding of Gentile-Jewish relations in the modern world. Offered periodically. Prereq: ENGL 110.

HIST 241: 3 s.h.**Imperial Russia (G3, W)**

Political, cultural, economic and social history from Peter the Great to the Russian Revolution. Offered annually. Prereq: ENGL 110.

HIST 241H: 3 s.h.**Hon: Imperial Russia (G3, W)****HIST 242: 3 s.h.****Soviet Union (G3)**

Political, cultural, economic and social history from the Russian Revolution to the present. Offered annually.

HIST 250: 3 s.h.**Women in American History (G3, W)**

History of women in the United States from the early 16th century through the late 20th century, with a particular emphasis on the significance of race, class, religion and region in the shaping of women's experiences. Offered periodically. Prereq: ENGL 110.

HIST 250H: 3 s.h.**H:Women in American History (G3, W)**

Honors Course - History of women in the United States from the early 16th century through the late 20th century, with a particular emphasis on the significance of race, class, religion and region in the shaping of women's experiences.

HIST 272: 3 s.h.**Afro-American History 1 (G3, W)**

History of African Americans from their first arrival in the Americas through the Civil War, with a particular emphasis on the process of enslavement, the formation of African-American communities and institutions, and the evolution of Black abolitionism. Offered annually. Prereq: ENGL 110.

HIST 273: 3 s.h.**Afro-American History 2 (G3, W)**

History of African Americans from the Civil War through the present, with a particular emphasis on the processes of emancipation, urbanization and enfranchisement. Offered annually. Prereq: ENGL 110.

HIST 276: 3 s.h.**Am Foreign Rltns, 1890 to Pres (G3)**

With the rise of the United States as an international power in the 1890s through its current foreign policy initiatives, it has acted as a leader in the world community. This course examines the rise, decline and resurrection of the United States as a world power through its foreign relations. Offered annually. Prereq: ENGL 110.

HIST 276H: 3 s.h.**Hon: Am For Rltns, 1890-Presen (G3)****HIST 279: 3 s.h.****Experimental**

Experimental

HIST 280: 3 s.h.**Pre-Colonial Africa (G3)**

Examines major social, economic and political developments in pre-colonial African societies. It begins with an overview of historiographical debates of African history, the peopling of Africa, early migration, agricultural innovation, climatic changes to the development of civilizations and cross-cultural contacts. Offered annually.

HIST 281: 3 s.h.**African History (G3)**

A survey of African history; special emphasis on the period since 1500. Offered annually. Prereq: ENGL 110.

HIST 282: 3 s.h.**Transatlantic Slave Trade (G3)**

This course examines the Transatlantic slave trade as a transcontinental episode that was responsible for the forced migration of millions of Africans to the Americas and Europe. It critically analyzes the various dimensions of the global forces that created the Atlantic World, experienced by tens of millions of enslaved African people. It illuminates the origins and continuing legacy of inequality based in European expansion, enslavement and economic supremacy. As an exploration of human history in the Atlantic World, this course discusses in depth the historiography of the slave trade and slavery in contemporary political, economic and social interactions of Africa, Americas and Europe.

HIST 283: 3 s.h.**Colonial Latin America (G3, W)**

From pre-Columbian America to the independence of Latin America (1825). Offered periodically. Prereq: ENGL 110.

HIST 284: 3 s.h.**Modern Latin America (G3, W)**

Continuation of HIST 283 from 1826 to the present. Offered annually. Prereq: ENGL 110.

HIST 285: 3 s.h.**Decolonization and Emp in Africa (G3)**

This course examines the process of the fall and dissolution of European Empires in the decades following the ending of the Second World War. It discusses the historiographical debate of factors that precipitated decolonization in the international, metropolitan, and national arenas. The course explores colonial insurgency and counterinsurgency programs as well as negotiated, non-violent struggles that culminated in the transfer of power to African nationalists.

HIST 286: 3 s.h.**War, Revolution and Terrorism (G3)**

Examines causes, conducts, and consequences of modern wars, revolutions, and terrorism in our contemporary world. Offers students a critical understanding of the concepts and competing theories associated with the study of war. Also explores the social, political, and economic predicaments of modern states confronting the various forms of warfare.

HIST 286H: 3 s.h.**Hon: War, Revolution & Terrorism (G3)****HIST 300: 3-12 s.h.****Co-Op Ed Experience in History**

Co-Op Ed Experience in History

HIST 305: 3 s.h.**Historical Investigations**

An advanced investigation of a selected topic in history that combines readings colloquium and research seminar. Prereq: HIST 205 C- or better.

HIST 308: 3 s.h.**Topics in History (G3)**

A thematic investigation of a significant historical topic with course structure and topic determined by the instructor prior to the preregistration period. Offered periodically.

HIST 308H: 3 s.h.**H Topics:**

H Topics:

HIST 313: 3 s.h.**History of Middle Ages (G3, W)**

Major political, cultural and socioeconomic developments in Europe, c. 500-1300 A.D. Offered annually. Prereq: ENGL 110.

HIST 313H: 3 s.h.**Hon: Hist of Middle Ages (G3, W)****HIST 314: 3 s.h.****The Crusades (D, G3)**

The history of the European Crusade movement to the Levant, as it was then called. The course will not concentrate on military history, but rather on the social, cultural and political factors that led to and resulted from these expeditions. The course will consider these issues from the point of view of the several groups of people, European and West Asian, who were involved in these events. Offered annually.

HIST 320: 3 s.h.**Renaissance and Reformation (G3, W)**

Cultural, social and political history of Europe, 1300-1650, with emphasis on Renaissance arts and literature and 16th century religious upheaval. Offered periodically. Prereq: ENGL 110.

HIST 330: 3 s.h.**Nineteenth-Century Europe (G3, W)**

The history of 19th-century Europe, including social, political, intellectual, cultural, religious and economic history. Offered periodically. Prereq: ENGL 110.

HIST 330H: 3 s.h.**Hon: Nineteenth-Century Europe (G3, W)****HIST 334: 3 s.h.****Victorian England (G3, W)**

The political, social, economic and intellectual development of England and the British Empire from the end of the Napoleonic wars to the outbreak of World War I. Offered periodically. Prereq: ENGL 110.

HIST 334H: 3 s.h.**Hon: Victorian England (G3, W)**

Honors Course - The political, social, economic and intellectual development of England and the British Empire from the end of the Napoleonic wars to the outbreak of World War I.

HIST 340: 3 s.h.**Twentieth Century Europe (G3, W)**

The political, socio-economic, cultural and diplomatic transformation of Europe, 1900 to the present. Offered periodically. Prereq: ENGL 110.

HIST 342: 3 s.h.**Hitler and Nazism (G3, W)**

The origins, development and impact upon Germany and the rest of the world of National Socialist theory and practice. Offered annually. Prereq: ENGL 110.

HIST 351: 3 s.h.**17th Century British America (G3, W)**

The founding and growth of the British Colonies to the Glorious Revolution of 1688, with particular attention devoted to society, beliefs and government. Offered annually. Prereq: ENGL 110.

HIST 352: 3 s.h.**Provincial and Revolutionary America (G3, W)**

America from the Glorious Revolution to the completion of the American Revolution, with particular attention to social, cultural and political developments such as the Enlightenment, the Great Awakening and the War for Independence. Offered annually. Prereq: ENGL 110.

HIST 352H: 3 s.h.**Hon: Provincial and Revolutionary America (G3, W)**

HIST 355: 3 s.h.**Civil War and Reconstruction (G3)**

The social, political and economic causes of the Civil War, the military and social events of the war, and the postwar developments of Reconstruction, with particular emphasis on the place of African Americans in U.S. society.

HIST 356H: 3 s.h.**H:New Era, 1876-1919 (G3)**

Honors Course - Responses to industrialization from populism through the progressive era. Changes in thought and culture. World War I and American society. The rise of America as a world power.

HIST 357: 3 s.h.**Modern U.S. History (G3)**

The United States from 1900 to the present. Focus is on political and social, not military, history. Offered periodically

HIST 359: 3 s.h.**First World War (G3)**

This course focuses on the military strategy and tactics employed by the combatants during the First World War (1914-1918). Offered annually.

HIST 360: 3 s.h.**The Second World War (G3)**

The course focuses on the military strategy and tactics employed by the combatants during the Second World War (1939-1945). Offered annually.

HIST 379: 3 s.h.**Experimental**

Experimental

HIST 383: 3 s.h.**Eur Implrm in Af 1870-1914 (G3, W)**

Provides an informed understanding of major themes in late 19th- and early 20th-century Africa, with a particular focus on the impact of British, French, Belgian and German imperialism. Special attention will be given to the discussion of the historiography of imperialism related to Africa. Contemporary Africa will be used to provide a background for assessing the effect of imperialism on African society, politics and economies. Offered annually. Prereq: ENGL 110/H.

HIST 388: 3 s.h.**Twentieth-Century Africa (G3, W)**

Course surveys major developments in 20th-century Africa by situating them in their respective historical contexts. It examines the idea of race, cultural representation of others, colonial economic relations, decolonization, national liberation movements, debts, structural adjustment programs, democracy, post-apartheid South Africa, the emergence of U.S. Africa Command (AFRICOM) and Human Rights and Development. Offered periodically. Prereq: ENGL 110.

HIST 400: 3-12 s.h.**Co-Op Ed Experience in History**

Co-Op Ed Experience in History

HIST 401: 3 s.h.**Cultural Interactions across the Atlantic World, 1450-1820 (P)**

This perspectives course will compare the social, economic, political and religious relations of three areas: Africa, Europe and the Native Societies of the Americas in and during the period of the formation of the Atlantic World. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

HIST 401H: 3 s.h.**H:Atlantic World, 1450-1820**

Honors Course - This perspectives course will compare the social, economic, political and religious relations of three areas: Africa, Europe and the Native Societies of the Americas in and during the period of the formation of the Atlantic World.

HIST 405: 3 s.h.**Senior Seminar**

Students will prepare and defend a seminar paper of approximately 25 pages. Prereq: HIST 205 with a grade of C- or higher; junior or senior standing or permission of instructor. Satisfies advance writing (AW) requirement if a grade of B or higher is attained.

HIST 453: 3 s.h.**Indians & Colonists in PA (P)**

Early Pennsylvania became home to a variety of groups in the course of the 18th century. This course takes a transatlantic approach as it explores the diverse backgrounds of European settlers and the Native Americans whom they encountered, and interactions following the establishment of the colony. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

HIST 453H: 3 s.h.**H:Colonial PA German Society (P)****HIST 470: 3 s.h.****The Vietnam War (P)**

The Vietnam War continues to be one of the more controversial moments in the history of the United States. Course examines the war with the objective of achieving a greater understanding of why the United States entered into the conflict and how the war was fought on the military battlefields in Vietnam and political battlefields in Washington, D.C., Saigon, Hanoi and around the world. Offered annually. Prereq: COMM 100, ENGL 110 and junior status.

HIST 470H: 3 s.h.**Hnrs:The Vietnam War (P)**

Honors Course - The Vietnam War continues to be one of the more controversial moments in the history of the United States. Course examines the war with the objective of achieving a greater understanding of why the United States entered into the conflict and how the war was fought on the military battlefields in Vietnam and political battlefields in Washington, D.C., Saigon, Hanoi and around the world.

HIST 479: 3 s.h.**Experimental**

Experimental

HIST 480: 3 s.h.**History of Medicine (G3)**

The history of medicine, health and disease, including political, social, cultural, religious and economic factors from the ancient world to the present. The course includes material from European, American and world perspectives. Offered periodically.

HIST 480H: 3 s.h.**Hnrs: History of Medicine (G3)**

Honors Section. The history of medicine, health and disease, including political, social, cultural, religious and economic factors from the ancient world to the present. The course includes material from European, American and world perspectives. Offered periodically.

HIST 489: 1-6 s.h.**Honors Course**

Honors Course

HIST 489H: 1-4 s.h.**Honors Course****HIST 490: 3 s.h.****17th Century Anglo-America (P)**

This perspectives course introduces students to the use of anthropological methods in studying past societies through examinations of small communities in England and America. Offered annually. Prereq: COMM 100, ENGL 110 and junior status.

HIST 498: 1-6 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

HIST 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

HIST 500: 3-12 s.h.**Co-Op Ed Experience in History**

Co-Op Ed Experience in History

HIST 501: 3 s.h.**U.S. History, Beginnings-1815**

An intensive readings and discussion course focusing on the major issues and interpretations of early American history. Offered every third semester.

HIST 502: 3 s.h.**U.S. History 1815-1919**

An intensive readings and discussion course focusing on the major issues and interpretations for the period 1815-1919. Offered every third semester.

HIST 503: 3 s.h.**U.S. History, 1919 to present**

An intensive readings and discussion course focusing on the major issues and interpretations for the period since World War I. Offered every third semester.

HIST 505: 3 s.h.**Early Modern Europe, 1500-1789**

An intensive readings and discussion course focusing on the major issues and interpretations of early modern Europe. Offered every third semester.

HIST 506: 3 s.h.**Age of Revolution, 1789-1914**

An intensive readings and discussion course focusing on the major issues and interpretations of European history from the French Revolution to the First World War. Offered every third semester.

HIST 507: 3 s.h.**Modern Europe, 1914-Present**

An intensive readings and discussion course focusing on the major issues and interpretations of recent European history. Offered periodically.

HIST 510: 3 s.h.**Tpc in US Hist:**

A topical readings course devoted to selected issues and problems in the history of the United States. Offered annually.

HIST 511: 3 s.h.**Tpc in Eur Hist:**

A topical readings course devoted to selected issues and problems in European history. Offered annually.

HIST 512: 3 s.h.**Topics in Regional History**

A topical readings course devoted to selected issues and problems in regional and comparative history. Offered periodically.

HIST 520: 3 s.h.**Historiography and Historical Research**

Essential to the practice of history are the ability to think historically, familiarity with its basic sources and an understanding of past historiographical traditions. This course seeks to offer instruction in the traditions of history writing that shaped and contextualized the present historiographical tradition, as well as provide training in the execution of various methods of historical research and writing. Offered annually.

HIST 610: 3 s.h.**Smnr in US Hist:**

A research seminar devoted to selected issues and problems in United States history. Offered annually.

HIST 611: 3 s.h.**Seminar in European History**

A research seminar devoted to selected issues and problems in European history. Offered annually.

HIST 612: 3 s.h.**Seminar in Regional History**

A research seminar devoted to selected issues and problems in regional and comparative history. Offered periodically.

HIST 691: 1-3 s.h.**Independent Study**

Independent Study

HIST 699: 3 s.h.**Thesis:**

Thesis:

Humanities (HUMN)

HUMN 110: 3 s.h.**French Fairy Tales (G1)**

An exploration of a major literary and cultural tradition still greatly influential in modern literature and films. Class will focus on Charles Perrault, the seventeenth century recorder of a number of well-known fairy tales such as Little Riding Hood, Cinderella, and Sleeping Beauty; Madame d'Aulnoy, one of the most prolific French fairy-tale writers of the seventeenth century; and Madame le prince de Beaumont, author of the Beauty and the Beast. Modern adaptations of Perrault's fairy tales in films, literature, music and/or art will be discussed. Finally students will be asked to read articles chosen to represent a wide variety of critical approaches to fairy tales. Class will consist of lectures and interactive activities.

HUMN 163: 3 s.h.**Latin and Greek Terminology (G1)**

Latin and Greek components in English words. Study of prefixes, suffixes and roots integrated with the combinative principles, orthography and pronunciation of general and scientific vocabulary. Attention given to the history of the classical element in English. No prior knowledge of Latin and Greek required. Offered infrequently.

HUMN 179: 2-3 s.h.**Experimental**

Experimental

HUMN 202: 3 s.h.**Classical Mythology (G1)**

Major mythological materials from Greek and Roman civilization. Analysis and interpretation of myth together with its symbolic, allegorical and psychological implications, and its treatment in art and literature from classical to modern times. Offered annually.

HUMN 210: 3 s.h.**French Literature in English (G1, W)**

Outstanding masterpieces taught in English by an instructor of French. Designed primarily as an elective for nonmajors desirous of enriching their knowledge of foreign literature. Offered periodically. Prereq: ENGL 110.

HUMN 210H: 3 s.h.**Hnrs:French Lit in Translatn (G1, W)**

Hnrs:French Lit in Translatn

HUMN 220: 3 s.h.**German Literature in Translatn (G1, W)**

German masterpieces taught in English by an instructor of German. Designed primarily as an elective for nonmajors with interest in foreign literature. May be selected by B.A. majors with consent of adviser to fulfill humanities course requirements. Offered in fall, spring. Prereq: ENGL 110.

HUMN 220H: 3 s.h.**Hnrs:German Lit in Translatn (G1, W)**

Hnrs:German Lit in Translatn

HUMN 230: 3 s.h.**Amish and Other PA Dutch (G1)**

The Amish and other Pennsylvania Germans, their history, culture, language and lifestyle, with emphasis on Lancaster County, Pa. Student written and oral reports on historical sites, museums and other subjects. Offered infrequently.

HUMN 280: 3 s.h.**Spanish Literature in English (G1)**

Outstanding Spanish and Spanish-American literary works. Course taught in English by an instructor of Spanish. Offered periodically.

HUMN 280H: 3 s.h.**Hnrs:Spanish Lit in English**

Hnrs:Spanish Lit in English

HUMN 370: 3 s.h.**Russian Folk Culture (P)**

An examination of Russian culture up to about 1700 with Peter the Great's moves toward Westernization; the essence and foundations of the Russian worldview as conditioned by events and as reflected in religion, arts and crafts, folklore, oral and written literature, daily life and rites of passage. Requirements include a crafts project, papers on aspects of folklore and literature, and written examination. A useful course for education majors. Knowledge of Russian is not required. Offered infrequently. Prereq: COMM 100, ENGL 110, junior status.

HUMN 380: 3 s.h.**Latino Issues of Identity (P)**

Critically examines a variety of poetry, fiction, short stories and essays produced by U.S. Latino/a writers and artists. Analysis of films and newspaper clippings related to the Latino experience will be discussed. Texts examined will be approached not as isolated words on a page, but as part of a living culture with a rich historical context. Interdisciplinary in nature, combining literature with history and cultural studies, but also comparative, since the diversity of cultures will be explored under the rubric of "Latino," which includes Chicanos, Puerto Ricans, Cubans and Dominicans, among others. Knowledge of Spanish not necessary. Offered periodically. Prereq: COMM 100, ENGL 110, junior status.

HUMN 391: 3 s.h.**Topics: (G1, W)**

In-depth investigation and development of a topic of current interest not covered in regularly scheduled courses. The topics will vary according to the needs and interest of the students and the faculty involved. Specific topics will be identified by the subtitles each time the course is offered. Course may be taken for credit each time the content (subtitle) is different. Offered periodically. Prereq: ENGL 110.

HUMN 391H: 3 s.h.**Honors Topics: (G1, W)****HUMN 479: 3 s.h.****Experimental**

Experimental

HUMN 498: 1-3 s.h.**Independent Study**

Independent Study for Humanities (Foreign Languages) - non-language area study.

Industry and Technology (ITEC)

ITEC 101: 3 s.h.**Introduction to Engineering (G2)**

This course engages learners in using scientific and mathematical reasoning to explore and engage in engineering design, covers the fundamentals of the engineering design process, and exposes students to a wide range of career paths available to engineers, including engineering, applied engineering, and engineering technology areas. In this course, students will follow the creativity-based engineering design process through laboratory-based activities. Students will design and manufacture physical artifacts to meet a specific engineering challenge, and must defend their decisions with scientific and mathematical reasoning. This course focuses on how engineers apply their creativity, resourcefulness, mathematical, scientific and technical knowledge and skills in the creation or refinement of technological products/systems.

ITEC 110: 3 s.h.**Communication/Info Systems**

Communication technology to design, compose, send, receive and understand ideas and information. Emphasis on graphic and electronic media. Experiences with graphic design, graphic reproduction, desktop publishing, web-page development, photography, and digital video and audio. 2 hrs. lec., 3 hrs. lab. Offered fall, spring.

ITEC 120: 3 s.h.**Energy & Power Systems**

An introduction to energy and power systems. Principles of conventional and alternative energy resources and energy conservation, and electrical, fluid, and mechanical power will be studied along with environmental concerns associated with power production. 2 hours lecture, 3 hours lab.

ITEC 130: 3 s.h.**Prod Materials and Process**

The integration and interrelationships of materials and processes for construction and manufacturing, including the application of math and scientific principles and the technological impacts on industry and society. Requires experiences in materials processing and production tooling. 2 hrs. lec., 3 hrs lab. Offered fall, spring.

ITEC 140: 3 s.h.**Bio-related Technologies**

Agriculture, medicine and other technologies in which living organisms are used to solve problems and modify products and systems. Includes problem solving, design and research activities for understanding biorelated technologies, issues and impacts. 2 hrs. lec., 3 hrs. lab. Reserved for EDTE majors. Offered fall, spring.

ITEC 140H: 3 s.h.**Hon: Bio-Related Tech****ITEC 179: 3 s.h.****Experimental**

Experimental

ITEC 241: 3 s.h.**Drafting Communications**

Introductory technical sketching, conventional drafting and computer-aided drafting (CAD). Experiences with equipment use and care, lettering, geometric constructions, multiview projection, dimensioning, sectioning and pictorial representation. 2 hrs. lec., 3 hrs. lab. Offered fall, spring.

ITEC 243: 3 s.h.**Tech Sketching/Design/Rendering**

Freehand sketching and basic elements of two-dimensional design and rendering. Various sketching and shading techniques are developed. Elements and principles of design, methods of designing, and evaluation and design of products are included. An application software is used to render design sketches. 2 hrs. lec., 3 hrs. lab.

ITEC 251: 3 s.h.**Print Media Systems**

Contemporary resources, processes and impacts of graphic reproduction. Emphasis on workflows relative to offset lithography, flexography, gravure, digital printing and screen printing. Covers graphic design; digital-image composition; digital photography; scanning; prepress, press and postpress production. 2 hrs. lec., 3 hrs. lab. Offered fall, spring. Prereq: ITEC 110 or ART 244 or COMM 201 or by permission.

ITEC 252: 3 s.h.**Web Publishing Systems**

Planning, creating, and publishing of web media. Topics include information design, optimization of graphic and audio files, navigation systems and website technologies. Multimedia authoring software will be utilized to produce and publish websites that include digital animations and interactive forms. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 110 or permission of instructor.

ITEC 261: 3 s.h.**Electronic Systems**

Survey of electricity and electronics, including typical direct current and alternating current applications, safe practices and technological impacts. Experiences include breadboarding, design and problem solving, use of test equipment and electronic project assembly/troubleshooting. 2 hrs. lec., 3 hrs. lab. Offered fall, spring.

ITEC 261H: 3 s.h.**H:Electronic Systems****ITEC 262: 3 s.h.****Semiconductor Electronics**

In-depth study of semiconductor theory, including diodes, transistors and silicon-controlled rectifiers. Emphasizes digital, linear and hybrid integrated circuits. Covers surface mount and emerging technologies, such as nanotechnology and biotechnology. Practical applications include prototyping circuits, design and problem solving, use of test equipment and troubleshooting. 2 hrs. lec., 3 hrs. lab. Offered fall, spring. Prereq: ITEC 261 or permission of instructor.

ITEC 271: 3 s.h.**Nonmetallic Materials**

Various nonmetallic materials, processes, products and impacts, including polymers, ceramics, wood, clay, composites and glass. Instruction and experiences provided on safety and the use of tools and machines associated with nonmetallics. Includes production activities in each of the specified nonmetallic material areas. 2 hrs. lec., 3 hrs. lab. Offered fall, spring. Prereq: ITEC 130.

ITEC 279: 3 s.h.**Experimental**

ITEC 279

ITEC 281: 3 s.h.**Metallic Materials & Prod Mthd**

Examination of metallic materials, including their structures, properties and the processes used to convert them into products. Particular attention is paid to the relationship between microstructural characteristics, physical and mechanical properties and production methods. Connections are made between the properties of metals and their applications. Laboratory experiences include manual and automated production techniques, conditioning processes and characterization methods to quantify process-property-performance relationships. 2 hrs. lec., 3 hrs. lab. Offered fall, spring. Prereq: ITEC 130.

ITEC 300: 3-12 s.h.**Co-Op Ed Experience in ITEC**

Co-Op Ed Experience in ITEC

ITEC 301: 3 s.h.**Technology and Humans (P)**

Analysis of the development of technology and its impact on humans and a realization of the importance of human technological behavior on the environment, social/cultural systems and the future. Students use analytical skills on a written independent research project and oral skills to present and defend positions on technological problems facing our society. Prereq: COMM 100, ENGL 110 and junior class standing.

ITEC 301H: 3 s.h.**Hnrs:Technology and Humans (P)**

Hnrs:Technology and Humans

ITEC 302: 3 s.h.**Futurology (P)**

A nontechnical interdisciplinary course to help students identify and analyze forces causing technological and social change. Using an understanding of the processes of technological and social change and research techniques for forecasting the future, students complete a written independent research project. Develops skills to project future technological and social developments and their impacts. Offered periodically. Prereq: COMM 100, ENGL 110 and junior class standing.

ITEC 302H: 3 s.h.**H: Futurology (P)**

ITEC 303: 3 s.h.**Tech Assessmnt:Amish and Others (D, P)**

A nontechnical course designed for all students to help learners analyze the use of technology, with focus on Anabaptists (particularly Amish, Old Order Mennonites and certain Brethren groups) of Lancaster County. Contrasting the way these groups assess and use technology with that of their own culture will allow students to better understand their own approach to technology. Students will develop their own technology-assessment system based on independent research. Offered in summer. Prereq: COMM 100, ENGL 110 and junior class standing.

ITEC 303H: 3 s.h.**H:Tech Assessmnt:Amish/Others (D, P)****ITEC 304: 3 s.h.****Energy, Sustainability & Envir (P)**

A non-technical course for all students dealing with energy sustainability, energy resources and conservation, and the effects of energy use on our environment. This course contains up-to-date information on essential subjects such as solar energy, wind energy, nuclear energy and energy conservation. Contemporary alternatives such as photovoltaic electricity and wind power generation will be addressed. Individual transportation to field sites is required (discuss with instructor before registering for class if this is an issue). Prereq: COMM 100, ENGL 110, MATH 100 or higher and Junior class standing.

ITEC 322: 3 s.h.**Transportation & Robotics**

Includes the application of scientific and mathematical principles to the solution of land, air, space, and/or water transportation challenges. Incorporates the investigation of a variety of robotics and control systems with emphasis on computational thinking. 2 hours lecture, 3 hours lab. Prerequisites: ITEC 120, ITEC 261, Math 100 or higher

ITEC 325: 3 s.h.**Power Conversion and Control**

Electric motors as conversion devices explored. Experiences include designing, creating and testing fluid and electrical energy conversion circuitry to perform specific control applications. 2 hrs. lec., 3 hrs. lab. Offered fall, spring. Prereq: ITEC 120 or 261.

ITEC 326: 3 s.h.**Fluid Power**

Investigation of scientific, mathematical and technological principles. Experiences with the design, creation, use and repair of hydraulic and pneumatic systems. A research and development activity required. 2 hrs. lec., 3 hrs. lab. Offered annually. Prereq: ITEC 120 or 325.

ITEC 327: 3 s.h.**Engineering Structures**

Students will design, construct, and evaluate model structures. Emphasis is placed on the use of science, technology, engineering, and mathematical (STEM) principles as they relate to structures. 2 hours lecture, 3 hours lab. Prerequisites: ITEC 120, 130, 241, and Math 100 or higher.

ITEC 331: 3 s.h.**Construction Technology 1**

Utilization of materials for the construction of residential and light commercial structures. Includes the effects of these changes on people and their environment. 2 hrs. lec., 3 hrs. lab. Offered spring. Prereq: ITEC 271 or permission of instructor.

ITEC 332: 3 s.h.**Construction Technology 2**

Methods, materials and processes employed in heavy and industrial construction technologies. Includes field-engineering techniques, equipment, civil engineering fundamentals and use of modeling and simulation techniques. Emphasis given to construction projects such as bridges, roads, industrial and commercial buildings, utilities, tunnels and dams. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: ITEC 271 or permission of instructor.

ITEC 342: 3 s.h.**Cmptr-Aided Engineering Drawing**

Advanced study of threads, gears and standard fasteners; geometric dimensioning and tolerancing (GD&T); schematic, production and assembly drawings; and introduction to solids modeling. Builds on view orientation, projection systems and basic CAD. 2 hrs. lec., 3 hrs. lab. Offered fall, spring. Prereq: ITEC 241.

ITEC 344: 3 s.h.**Product Design**

An exploration of the thinking processes, problem solving strategies, documentation techniques, and making skills used by designers toward creating new products. The use of the elements and principles of design, aesthetics, ergonomics, and social/cultural considerations as tools toward designing for manufacture, designing for sustainability, and universal design are emphasized. Other topics explored include the role of human emotion toward design and design's influence on human history.

ITEC 344H: 3 s.h.**Hrs: Product Design****ITEC 345: 3 s.h.****Statics/Strength of Materials**

Elementary, analytical and practical approaches to the principles and physical concepts of statics. Covers force systems; equivalent force/moment systems; distributed forces; internal forces; principles of equilibrium; application to trusses, frames and beams; stress and strain; and mechanical properties of materials. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: ITEC 241 and MATH 151, 160 or 161; or permission of instructor.

ITEC 346: 3 s.h.**Architectural Drawing**

Study of principles of residential design and architectural styles with an emphasis on the development of a complete set of original working and presentation drawings using computer-aided design (CAD) and Building Information Modeling (BIM). 2 hours lecture, 3 hours lab. Prerequisite: ITEC 241.

ITEC 347: 3 s.h.**Engineering Visualization**

Students study the relationships of three-dimensional lines, angles, surfaces, and solids by projecting three-dimensional reality onto a two-dimensional surface such as a computer screen. The students gain the necessary tools and principles to graphically visualize, manipulate, and solve engineering and architectural design problems. Traditionally these problems were solved by doing mathematical calculations. In contrast, this class uses descriptive geometry to solve three-dimensional spatial problems graphically. The computer is used as the main drafting tool. Engineering visualization extends beyond the principles of descriptive geometry. Students use visualization techniques and spatial reasoning to solve fundamental engineering concepts and related problems, represent their design proposals, view the 3D environment from any angle using a flying camera, and support their spatial, numeric, algebraic and quantitative thinking. 2 hrs. lec., 3 hours lab. Prereq: ITEC 241.

ITEC 348: 3 s.h.**Green Buildings**

This course covers fundamentals of green buildings and sustainable energy technologies and their dynamic costs and benefits. Green buildings are designed and constructed to maximize the energy efficiency of the envelope and provide superior quality in the indoor environment. This course allows students to explore the integration of design principles and application of renewable energy, natural building materials, and ecological landscape into building design and community development. Pre-requisite: MATH 130 and ITEC 241

ITEC 351: 3 s.h.**Digital Imaging**

Create digital images using cameras and scanners. Set up and characterize a digital workstation and produce digitally imaged products. Hands-on activities will require students to demonstrate their proficiency using contemporary hardware and software to compose, capture, convert, color and tonal correct, manipulate and print digital images and products. 2 hrs. lec., 3 hrs. lab. Offered annually.

ITEC 355: 3 s.h.**Contemporary Printing**

Advanced study of today's major printing processes, especially offset and screen. Experiences include layout and design, computerized electronic composition, copy preparation, line and halftone photography, special-effects photography, exposure unit calibration, image assembly, platemaking, printing and finishing complex graphic products. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: ITEC 251.

ITEC 356: 3 s.h.**Desktop Publishing (W)**

Utilization of desktop microcomputer systems to design, compose and publish graphic materials. A research and development activity required. 2 hrs. lec., 3 hrs. lab. Prereq: ENGL 110.

ITEC 357: 3 s.h.**Packaging Specialty Printing**

In-depth study of problems and processes related to printing and converting in package, label and specialty printing. Students study and experience package design structures, materials flexographic printing, screen container printing, converting methods and bar code applications. Current industry practices explored. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 241 and 251; or ART 348.

ITEC 357H: 3 s.h.**Hon: Packaging Spec Prnting****ITEC 364: 3 s.h.****Digital Electronics**

Practical applications of digital logic for processing electronically encoded information. Covers numbering systems, logic design, basic gates, sequential and combination logic, and digital troubleshooting. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: ITEC 262 or permission of instructor.

ITEC 375: 3 s.h.**Polymer and Ceramic Tech**

Design, development and production of polymer and ceramic products. Covers contemporary pattern and molding materials along with industrial forming processes. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: ITEC 271.

ITEC 376: 3 s.h.**Woodworking Technology**

Use of hand tools and machine woodworking techniques to fabricate wood products. Covers technological problems and contributions of using wood in daily living. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: ITEC 271.

ITEC 379: 3 s.h.**Experimental**

Experimental

ITEC 382: 3 s.h.**Automated Manufacturing**

A comprehensive experience in the design, programming and implementation of computer-controlled manufacturing processes. Emphasis is placed on understanding machine code, utilizing computer-aided design and manufacturing (CAD/CAM) software and identifying proper process controls to increase productivity and reduce cost. Laboratory experiences develop a combination of software and hardware competencies. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: ITEC 130; and ITEC 241; and ITEC 271 OR 281 OR 342; or permission of instructor.

ITEC 392: 3 s.h.**Intro to Industrial Training (W)**

Techniques and procedures required to conceptualize, prepare, deliver and evaluate training programs. Includes experiences in preparing instructional media, presenting a unit of instruction and developing appropriate evaluation instruments. Offered fall, spring. Prereq: ENGL 110.

ITEC 400: 3-12 s.h.**Co-Op Ed Experience in ITEC**

Co-Op Ed Experience in ITEC

ITEC 425: 3 s.h.**Industrial Robotic Systems**

This course focuses on the study of industrial robotics and modern machine vision technology. Topics include the evaluation, justification, programming, safety, and integration of industrial robotic devices with machine vision systems. 2 hours lecture, 3 hours lab. Prerequisite: ITEC 325.

ITEC 427: 3 s.h.**Programmable Logic Controllers**

Focus on the integration and application of the programmable logic controller (PLC). Students design, construct and troubleshoot a variety of industrial control systems utilizing programmable logic controllers, networks, human-machine interfaces, variable frequency drives, control loops and sensors. A research and development component required. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 425; and MATH 151 or 161 or permission of instructor.

ITEC 433: 3 s.h.**Construction Project Management**

Methods, processes and information necessary to manage a construction project. Includes cost and risk control; developing and applying policies and procedures; subcontractor management; specifying and purchasing materials; scheduling; and contract development. Experiences include use of project-planning and cost-estimation software for development of a complete project plan. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: ITEC 332 or permission of instructor.

ITEC 435: 3 s.h.**Manufacturing Enterprise**

Exploration of the technological and management processes for conceptualizing and manufacturing a product. Experiences with product engineering, production engineering, manufacturing management and enterprise operations in a student-centered learning environment. 2 hrs. lec., 3 hrs. lab. Offered periodically. Prereq: ITEC 110, 120, 130, 140, 241 and 271 or 281, and a major in technology education (TECE).

ITEC 448: 3 s.h.**Machine Tool Design**

Analysis, planning, design, construction and application of tools, methods and procedures necessary to increase manufacturing productivity. Integrated with machining and fabrication practices. 2 hrs. lec., 3 hrs. lab. Offered annually. Prereq: ITEC 342.

ITEC 455: 3 s.h.**R and D in Graphic Communicatns**

This course involves testing various components of the manufacturing processes involved in creating print and digital/web media. Typical activities will involve testing colorants (e.g., inks, toners, etc.) and substrates used in lithography, flexography, screen-printing and digital printing systems. Optimum conditions for specific printing methods will be determined through controlled testing and examination. Students may also propose to examine specific interrelationships between production procedures used in various digital media processes. The course will also cover color separation and reproduction, which includes the study of process color theory, desktop color separations and color reproduction. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 355 or permission of instructor.

ITEC 457: 3 s.h.**Print Prod Mgmt/Cost Estimatin**

A study of current topics and systems for setting printing production standards, cost estimating, production scheduling, job planning and the consideration of new equipment and technologies. Students will integrate the technical knowledge learned through previous graphics laboratory classes with other course work in management, marketing, science, business, etc., with a focus on how it all relates specifically to the printing production process. The course is structured to offer an overview in several areas of print production management, with emphasis on cost estimating and current printing industry topics. 2 hours lecture/3 hours lab. Prereq: ITEC 355 and MATH 130, or permission of instructor.

ITEC 466: 3 s.h.**Wireless Communication Systems**

This course utilizes both theory and applications related to wireless communications systems. Topics include amplitude modulation (AM) and frequency modulation (FM) as well as the principles of television broadcasting and reception systems. Transmission lines, antennas and wave propagation are also described. New applications include microwave, wireless telephony, satellite communications and Wireless Fidelity (WiFi™). A research and development activity is required. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 262 or permission of instructor.

ITEC 467: 3 s.h.**Mobile Robotics**

Study of the development of mobile robotic solutions. Emphasis is placed on the programming and interfacing of microcontrollers to control autonomous mobile robots in known environments. A research and development activity is required. 2 hrs. lec., 3 hrs. lab. Prereq: ITEC 262 or permission of instructor.

ITEC 479: 3 s.h.**Experimental****ITEC 485: 3 s.h.****Adv Manufacturing Systems**

Computer-integrated manufacturing (CIM) systems, strategies and implementation across the manufacturing enterprise. Focus on the integration of systems such as design of products; computer-aided engineering (CAE); the control of quality, design and construction of production tooling, rapid prototyping, computer-aided process planning (CAPP), finite element analysis (FEA), computer-aided design (CAD), computer-aided manufacturing (CAM) and computer numerical control (CNC). Manufacturing, automation and robotics emphasized. Advanced-level production experiences with an intensive research and development component required. 2 hrs. lec., 3 hrs. lab. Offered periodically.

ITEC 489: 1-4 s.h.**Honors Course**

Preparation of honors thesis proposal. For the definition of honors course and student eligibility, refer to the departmental honors section of this catalog. EDTE, AETM and OSEH majors may enroll in the Department of Applied Engineering, Safety & Technology honors program. Contact the department office for guidelines and an application.

ITEC 492: 3 s.h.**Technical Entrepreneurship**

A capstone Applied Engineering & Technology Management course in which students study and apply technical, managerial, and entrepreneurial concepts to the development and operation of a student-centered venture. Students organize and operate a model enterprise to develop manufacture and market a consumer product.

ITEC 494: 3 s.h.**Total Quality Management**

The history and development of quality movements; factors influencing the total quality concept; the scope of modern quality systems; management organization and strategies for quality; engineering technology for quality; and statistical tools for measurement and monitoring of quality. 2 hrs. lec., 3 hrs. lab. Offered fall, spring. Prereq: MATH 130 or permission of instructor.

ITEC 498: 1-4 s.h.**Independent Study**

See Independent Study section of this catalog. Written permission of faculty sponsor and department chairperson required.

ITEC 499: 1-4 s.h.

Departmental Honors (W)

Completion and defense of thesis research. See departmental honors section of this catalog. Contact the Department of Applied Engineering, Safety & Technology office for guidelines.

ITEC 500: 3-12 s.h.

Co-Op Ed Experience in ITEC

Co-Op Ed Experience in ITEC

ITEC 515: 3 s.h.

Adv Prob:

Resources, processes and outcomes of selected technical areas in technology education. Technical area emphasized (e.g., computer-aided drafting and design, computer numerical control, desktop publishing, digital electronics, manufacturing, photography and robotics) varies with the course offering. Laboratory experiences focus on technological problem solving. 2 hrs. lec., 3 hrs. lab.

ITEC 525: 3 s.h.

Adv Prob:

Resources, processes and outcomes of selected technical areas in technology education. Technical area emphasized (e.g., computer-aided drafting and design, computer numerical control, desktop publishing, digital electronics, manufacturing, photography and robotics) varies with the course offering. Laboratory experiences focus on technological problem solving. 2 hrs. lec., 3 hrs. lab.

ITEC 535: 3 s.h.

Adv Prob:

Resources, processes and outcomes of selected technical areas in technology education. Technical area emphasized (e.g., computer-aided drafting and design, computer numerical control, desktop publishing, digital electronics, manufacturing, photography and robotics) varies with the course offering. Laboratory experiences focus on technological problem solving. 2 hrs. lec., 3 hrs. lab.

ITEC 579: 3 s.h.

Experimental

Experimental

ITEC 586: 1-3 s.h.

Special Topics:

Investigation of one or more topics of current interest in technology and innovation. Topics vary according to needs and interests of students and faculty involved. Offered periodically.

ITEC 587: 1-3 s.h.

Special Topics:

Investigation of one or more topics of current interest in technology and innovation. Topics vary according to needs and interests of students and faculty involved. Offered periodically.

ITEC 588: 1-3 s.h.

Special Topics:

Investigation of one or more topics of current interest in technology and innovation. Topics vary according to needs and interests of students and faculty involved. Offered periodically.

ITEC 589: 1-3 s.h.

Special Topics:

Investigation of one or more topics of current interest in technology and innovation. Topics vary according to needs and interests of students and faculty involved. Offered periodically.

Information Technology (INTE)

INTE 120: 4 s.h.

Integrated Information Technology Application Projects

Introduction to the use of information technology to retrieve, filter, process, classify, sort, and evaluate data and information in a business environment. Developing word processing, spreadsheets, database, scripting, and presentation skills to create integrated projects for business and workplace environments.

INTE 130: 4 s.h.

Fundamentals of Information Technology

This course provides students with a working knowledge of the terminology, processes, and components associated with information technology. Students will be introduced to the creation, organization, analysis, storage, retrieval, representation, and transmission of data and information as well as work force considerations, and related societal and ethical issues with respect to IT.

INTE 230: 4 s.h.

Network Concepts, Security and Administration

An introduction to computer network concepts that includes fundamental protocols and administration. Computer network communications will be discussed including LAN and WAN topologies, protocols and services, such as TCP/IP, and Ethernet, within the context of the OSI Reference Model, multimedia, and content distribution networks. Topics in network management will also be covered, including users/groups, file permissions, system maintenance, and trouble shooting. Network management, packet analyzer, and network simulation tools may be used.

INTE 240: 4 s.h.

The Fundamentals of Web Technology

Introduction to web-based information systems that includes the principles and practices of website development process, website project implementation, and evaluation of web-based applications including related software, databases, programming interfaces, and platforms. Security and privacy issues related to web-based information systems are explored. Applications of architectural principles of scalability, reliability, and redundancy in website development are discussed.

INTE 255: 3 s.h.

Intro to Data Analytics

Introduction to data analysis techniques and programming that enables real-time decision making in IT organizations. Includes skills and applications in pre-processing, preparing, and reporting data for further analysis. (Cross-listed with MATH 255, credit may not be received for both courses.)

INTE 300: 3-12 s.h.

Co-Op/Internship in INTE

Internship in Information Technology

INTE 335: 3 s.h.**Advanced Computer Networking**

This is an advanced-level course on computer networks. This course is the continuation discussion on INTE 230 Network Concepts. The course has a comprehensive overview on advanced topics in network protocols, and networked systems. This course starts with a brief overview of TCP/IP protocol suite and reference model. The main discussions are fundamentals of network technology, Routing Algorithms, Routing Among the ISPs, Software Defined Networking (SDN), Network Management and SNMP, Error-Detection and Correction Techniques in Link Layer, Link-Layer Addressing and ARP, Virtual Local Area Networks (VLANs), Data Center Networking, Wireless and Mobile Networks, Mobility Management, and Security in Computer Networks. Some Network security topics are discussed such as: Principles of Cryptography, Digital Signatures, End-Point Authentication, Securing E-Mail, Transport Layer Security (TLS), Virtual Private Networks (VPNs), and Firewalls. Prerequisites: INTE 230

INTE 350: 4 s.h.**Cybersecurity**

Investigate vulnerability of computer networks, systems, and computer applications. Learn methods of mitigation and/or prevention of cybercrime. Attributes of cybercrime such as virus attacks, identity theft, electronic funds transfers, and phishing will be examined along with an introduction to the cybersecurity script programming paradigm.

INTE 360: 4 s.h.**IT Risk Management and Security**

Explores Networking Security from the perspective of risk management to develop strategies to mitigate and manage risks. Focuses on assessment strategies for effective mitigation measures and risk management practices in terms of cybersecurity. Risk Management Fundamentals and Managing Risks as Threats, Vulnerabilities, and Exploits will be covered and methods on how they are applied in cyber security decisions will be investigated.

INTE 365: 3 s.h.**Health Care Information Management**

Students will apply fundamental skills in information technology to database design, data structures, software applications, and their management functions in health services organizations. Techniques in database design and management in the health care system will be discussed.

INTE 400: 3-12 s.h.**Co-Op/Internship INTE**

Internship in Information Technology

INTE 410: 4 s.h.**IT Project Management**

This course covers technical and behavioral aspects of the successful management of information systems developments. Topics include needs identification, system project manager and team, system project organizations, project communications, system project planning, scheduling, control, associated costs, and using project management software tools. Examples of IT project management process will be explored for different industry lines with respect to system development activities and System Development Life Cycle. INTE 360 is recommended.

INTE 420: 4 s.h.**Fundamentals of Operating Systems Management**

This is an introduction to the foundational principles of operating systems. Topics include system management in memory, processor, process and thread mechanics, devices, network, file and directory, graphical and command line user interfaces. Essentials for effective administration and maintenance of an operating system and its services will be discussed. In addition, students will learn to install, manage, and secure an operating system.

INTE 425: 3 s.h.**Data Explor and Visualization**

Students will learn dataset elements, data collection, representation and querying techniques, visual variables and statistical tools for graphing, and preparation of data for further analysis, with emphasis on issues related to healthcare. Students will also be introduced to data science tools and related coding techniques.

INTE 435: 3 s.h.**IT Security, Privacy & Ethics**

Examination of information technology security and privacy issues in the context of law and ethics. This course explores the civil and common law issues that apply to information technology. The course studies jurisdictional, statutes, and constitutional issues related to cybercrime and privacy issues in the information age.

INTE 440: 4 s.h.**Human-Computer Interaction**

This course studies the effective and productive information systems, including interactive computer systems, input and output devices, screen layouts, machine design, health issues, organizational impacts, and access for people with disabilities. Topics include interaction system design, conceptualizing interaction, cognitive aspect of users, social interaction, emotional interaction with systems, and interfaces. The process of designing user-friendly interfaces will be discussed including data gathering, data analysis, interpretation, and presentation.

INTE 465: 3 s.h.**Data Analytics in Health Care**

An introduction into the uses of data analytics in population health practices and their administration. Students will explore the development of validated predictive analytics and their application in clinical interventions. The intersection of data analytics with ethics will also be discussed.

INTE 466: 3 s.h.**Ethical Hacking and Penetration Testing**

Discussion of advanced topics in Cybersecurity, such as security testing, system defense, and countermeasures. The implications of information security vulnerabilities in systems, networks, and applications are explored. Students will be able to identify solutions before adversaries exploit the flaws. In this course, students discover techniques that attackers use to compromise network and systems security. Demonstrating how an adversary could hack into systems by simulate a hack of systems to uncover and exploit vulnerabilities in an isolated penetration test computer laboratory. The course offers learning on how to protect network and systems through hands-on lab activities utilizing the tools and methods that intruders use. Methods of security assessments for the strength of the organizational cybersecurity posture are discussed. Additional topics include firewall and intrusion detection system exploration, denial of service attack issues, Internet security mechanisms, spoofing, session hijacking, and sniffers.

INTE 489: 1-4 s.h.

Honors Course

Honors Course Information Technology

INTE 498: 1-4 s.h.

Independent Study

INTE 499: 1-4 s.h.

Departmental Honors

Departmental Honors Thesis Course

Integrated Scientific Applictn (ISCA)

ISCA 579: 1-3 s.h.

Experimental

Experimental course number for Integrated Scientific Applications. Topics vary.

ISCA 679: 1-4 s.h.

Experimental

Experimental Course in Integrated Scientific Applications

International Business (INTB)

INTB 179: 3 s.h.

Experimental

Experimental Course International Business

INTB 279: 3 s.h.

Experimental

Experimental Course in International Business

INTB 321A: 3 s.h.

Intro to International Business (G3)

A survey of international business (IB). Introduces major issues, institutions, opportunities, problems and managerial processes unique to international business. Includes micro and macro context, theory, impact of environmental factors on international business operations, and identification and analysis of managerial issues. Course content relates to current events. Offered in fall, spring. Prereq: ECON 101, 102.

INTB 321B: 3 s.h.

Intro to International Business (G3)

A survey of international business (IB). Introduces major issues, institutions, opportunities, problems and managerial processes unique to international business. Includes micro and macro context, theory, impact of environmental factors on international business operations, and identification and analysis of managerial issues. Course content relates to current events. Offered in fall, spring. Prereq: ECON 101, 102.

INTB 379: 3 s.h.

Experimental

Experimental Course in International Business

INTB 405: 3 s.h.

Topics in Internatl Business

Advanced, innovative, or exploratory topics and disciplines within international business. Specific content items developed by instructor. Most topics will be for business majors only. Offered periodically. Prerequisites may vary. Consult the current course offering.

INTB 479: 3 s.h.

Experimental

Experimental Course in International Business

INTB 499: 1-4 s.h.

Departmental Honors

Departmental Honors

International Studies (INTL)

INTL 201: 3 s.h.

Intro to International Studies (G3)

Study of global cultural diversity, economic interdependence, environmental issues and international relations. Offered in fall, spring.

INTL 201H: 3 s.h.

Hrs:Intr to Intrnatl Studies (G3)

Hrs:Intr to Intrnatl Studies

INTL 300: 3-12 s.h.

Co-Op Ed Experience in INTL

Co-Op Ed Experience in INTL

INTL 379: 3 s.h.

Experimental

Experimental Course

INTL 400: 3-12 s.h.

Co-Op Ed Experience in INTL

Co-Op Ed Experience in INTL

INTL 488: 3 s.h.

Senior Seminar

Research, discussion and analysis of current global issues. Prereq: C- or better in INTL 201, 75 total credits earned and 9 credits in International Studies.

INTL 488H: 3 s.h.

H:Senior Seminar

H:Senior Seminar

INTL 489: 1-4 s.h.

Honors Course

Honors Course

INTL 491: 1-6 s.h.

Topics in International Studies

Investigation of topics on economic, environmental or political global systems or in-depth comparative study of international issues, cultures or the arts. Offered annually.

INTL 491H: 3 s.h.

Hrs:Tpcs in Intrnatl Studies

Hrs:Tpcs in Intrnatl Studies

INTL 498: 1-4 s.h.

Independent Study

For further information, see the Special Academic Opportunities section.

INTL 499: 1-4 s.h.

Departmental Honors

Departmental Honors

INTL 500: 3-12 s.h.

Co-Op Ed Experience in Intl

Co-Op Ed Experience in Intl

Japanese (JAPN)

JAPN 101: 3 s.h.

Elementary Japanese 1 (G1)

Introduction to language and culture. Fundamentals of grammar and syntax. Oral practice, short readings and practice in aural comprehension. Emphasis on learning useful everyday phrases and working toward accuracy in pronunciation. Offered infrequently.

JAPN 102: 3 s.h.

Elementary Japanese 2 (G1)

Continuation of JAPN 101; emphasis on more complex syntactical structures while working toward greater proficiency in both productive (speaking and writing) and receptive (reading and listening) skills. Prereq: JAPN 101 or equivalent.

JAPN 179: 3 s.h.

Experimental

Experimental

JAPN 201: 3 s.h.

Intermediate Japanese 1 (G1)

Continuation of JAPN 102. Further development of syntactical and phonological structures. Thematic basis for oral and written communication. Builds on proficiency attained in 101-102 sequence. Prereq: JAPN 102.

JAPN 202: 3 s.h.

Intermediate Japanese 2 (G1)

Continuation of JAPN 201. Further development of syntactical and phonological structures. Thematic basis for oral and written communication. Builds on proficiency attained in JAPN 201. Prereq: JAPN 201.

Journalism (JRNL)

JRNL 250: 3 s.h.

Journalism & Society (G1, W)

Explores journalism's role in American society by analyzing the problems facing journalists in the realms of politics, law, corporate power and ethics. Prereq: ENGL 110

JRNL 313: 3 s.h.

Fundamentals of Journalism (G1, W)

Introduction to the craft of journalism and the nuts and bolts of news writing, including story structures, leads, nut graphs, kickers, finding sources and conducting interviews.

JRNL 315: 3 s.h.

Advanced Reporting in a Diverse World (D, W)

Building on journalism fundamentals, this course calls for students to tackle more in-depth and lengthier reporting projects. The class delves into a wider range of reporting "beats," and places an emphasis on the importance of representation of diverse groups both in stories and in the newsroom.

JRNL 327: 3 s.h.

Feature Writing and Magazine Journalism

Writing long-form features and enterprise stories, including photography, video and audio content to enhance story presentation on the internet. All original work. Prereq: ENGL 313 or JRNL 313

JRNL 328: 3 s.h.

Ethics in Digital Media Journalism

Covers ethics of print-media publication. Focuses on the development of ethics in writing and changes in journalistic standards. May include case-study analysis.

JRNL 430: 3 s.h.

Investigative and Computer Assisted Reporting

Data-driven journalism, looking at the collection of data, analysis in software such as SPSS and the writing of longer-form articles about research. Prereq: ENGL 313 or JRNL 313

Language and Culture (LANC)

LANC 490: 3 s.h.

Sr Seminar: Lang & Cult Study

The Language and Culture Studies Senior Seminar gives senior French, German, and Spanish majors with the Culture Studies option the opportunity to compare and contrast various cultural topics from multiple interdisciplinary perspectives. Students from the various majors will research, discuss, and compare specific cultural topics germane to one or more of the countries in which their target language is spoken. The course will be taught in English and at the end of the course each student will submit a research paper and present their findings orally to a general audience. Prerequisite is 24 credits in the major. For FORL majors only.

LANC 501: 3 s.h.

Linguistic Studies

The study of the basics of linguistics as the scientific, principled analysis of language and of the applications of linguistics to a variety of fields of human activity, including language teaching, translation and interpretation, and the study of language use in professional contexts. The course is taught in English, but examples and some of the coursework will be dedicated to French, German, and Spanish, the languages of the Languages and Cultures program.

LANC 502: 3 s.h.

Interpretive Strategies

Students will develop advanced critical and analytical skills to be applied to texts of different genres and cultures in the target language of study. The course is taught in English, but examples and some parts of the coursework will be dedicated to French, German, and Spanish, the languages of the Languages and Cultures program.

LANC 503: 3 s.h.

Cultural Studies

Explores practical applications of cultural criticism to the study of cultural context, practice and production. Students will analyze cultural production and practice in their areas of specialization.

Latina/o Studies (LATS)

LATS 179: 1-3 s.h.

Experimental

Experimental

LATS 201: 3 s.h.

Introduction to Latino Studies (D, G1)

An introductory course designed to study the history, politics, economics and culture of the major Latino groups in the United States: Mexicans, Puerto Ricans, Cubans, Dominicans and Central Americans.

LATS 300: 3-12 s.h.

Co-Op Ed Experience in LATS

Allows students to volunteer or work at a Latino/a serving organization.

LATS 325: 3 s.h.**Afro-Latino Cultural Experiences (W)**

Critical examination of the complex diversity of experiences among U.S. Latinos, with a specific emphasis on Afro-Latino experiences. Afro-Latinos are Latinos with strong African phenotypic features and whose experiences as both "Black" and "Latino" mark them as distinct from both the larger African American and broader Latino communities, even though Afro-Latinos hold certain connections to both groups. Primary focus will be places on Afro-Latino historical and contemporary experiences, efforts to establish local, national, and transnational recognition, and Afro-Latino struggles against racism within the broader American society and from the larger Latino community.

LATS 340: 3 s.h.**U.S. - Mexico Border Issues (P)**

This course provides a multi-disciplinary perspective on issues at the U.S. – Mexico border from the perspectives of sociology, anthropology, geography, art, and political affairs. Women's non-governmental organizations that serve the border region are also discussed.

LATS 379: 1-3 s.h.**Experimental**

Experimental

LATS 488: 3 s.h.**Latina/o Studies Senior Seminar (W)**

Upper-level interdisciplinary study of Latino cultures through readings, attendance at Latinx cultural events, and independent student research. Prerequisites: LATS 201 and ENGL 110.

LATS 491: 3 s.h.**Topics in Latina/o Studies**

Investigation of topics related to the cultures, contributions and experiences of Latinas/os living in the United States. Pre/co-requisite of LATS 201.

LATS 498: 1-3 s.h.**Ind Stdy.**

Allows students to pursue an academic area of interest not available through an established course under the guidance and supervision of a faculty member. For further information, see the Special Academic Opportunities section of the catalog, and consult with the director of Latino studies or your adviser.

Management (MGMT)

MGMT 179: 3 s.h.**Experimental**

Experimental Course in Management

MGMT 279: 3 s.h.**Experimental**

Experimental Course in Management

MGMT 351: 3 s.h.**Organization Theory & Design**

Introduction of the perspective of business as a system dedicated to the reduction of uncertainties. Focus is on determining strategy and building a structure that supports organizational effectiveness. Factors considered include the external environment, interorganizational relationships, globalization, internal technologies and control systems, organizational life cycle, cultural and ethical values, innovation, and change management. Prereq: C- or higher in BUAD 251.

MGMT 353: 3 s.h.**Labor-Management Relations**

Course covers roles of management and labor unions using an analytical framework for labor relations problems, contract negotiations and administration. Offered periodically. Prereq: C- or higher in BUAD 251.

MGMT 354: 3 s.h.**Compensation Management**

Specific focus on methods for determining wages. Salaries, incentive payments, point classification and factor comparison systems are discussed in detail. Management of benefits, including hospitalization, major medical, life insurance, long-term disability and pension administration is emphasized. Offered periodically. Prereq: BUAD 352.

MGMT 355: 3 s.h.**Business and Society (G3)**

Relationships between economic decision-makers (business) and the various interests affected by their decisions (society). Emphasis on the ethical dimensions of decision making in business. Specific issues include cultural relativism, social and economic justice, private property and the choice of an economic system, corporate social responsibility, acceptable risks for consumers, acceptable risks to the environment, affirmative action and reverse discrimination, sexual harassment and comparable worth, disclosing and concealing information in sales, insider trading and whistleblowing. Offered in fall, spring.

MGMT 356: 3 s.h.**Entrepreneurial Management**

Managing a new venture while continually juggling vital issues such as: mission and values statement; goals and objectives; growth strategy; people and resources; organizational capabilities; financing strategy; vision of success. The course addresses differences between Entrepreneurial Management and Corporate Management. Prereq: BUAD 231 and C- or better in BUAD 251

MGMT 357: 3 s.h.**International Management (G3)**

Examination of management challenges associated with developing strategies and managing operations of firms whose activities extend across national boundaries. Theoretical, institutional, and case analysis of major issues, including the impact of international codes and organizations on corporate policies, the effect of government policies, techniques for assessing foreign environments, and strategies for managing international business operations are covered. Prereq: C- or higher in BUAD 251.

MGMT 371: 3 s.h.**Principles of Entrepreneurship**

Introduction to the process of turning an idea into a successful start-up business. The entrepreneurial mind-set, initiating ventures, developing the plan through understanding legal, marketing, and financial challenges, strategic growth, valuation of the enterprise, and harvesting the enterprise are studied within the context of the entrepreneurial process. Pre-req: C- or better in BUAD 231 and 251.

MGMT 372: 3 s.h.**Organizational Behavior**

Examines individual, group, and organizational-level behavioral and social science theories and applies those theories to managing human behavior in diverse organizations operating in a global business environment. Topics include personality, values, perception, motivation, teams, leadership, conflict resolution, communication, organizational culture, and change management. Pre-req: C- or better in BUAD 251

MGMT 373: 3 s.h.**Management Skills**

Focuses on developing business and interpersonal skills through engaging in activities designed to assess, practice, and improve various skill areas such as time management, teamwork, stress management, coaching and counseling, creativity, conflict management, problem solving, critical thinking, and motivating others. Students will be expected to demonstrate skills during semester activities. Prereq: C- or higher in BUAD 251.

MGMT 374: 3 s.h.**Leadership**

Examines various concepts related to leadership. Topics include trait, contingency, and behavioral approaches to leadership; values and ethics, diversity, motivation, power, and multiculturalism in leadership etc. The emphasis will be on learning and application of behaviors that are critical to effective leadership. Prereq: C- or higher in BUAD 251.

MGMT 374H: 3 s.h.**Hon: Leadership****MGMT 375: 3 s.h.****Business Web Development**

Prepares individuals to plan, manage, supervise, and market electronic business operations, products, and services provided online via the Internet. Builds skills to develop a modern business website using technologies such as HTML, CSS and JavaScript. Includes coverage of web client-server architecture, security, performance issues, monetization, website promotion, database integration through server-side scripting and commercial deployment. The course supports Entrepreneurial and Small Business Operations. Offered periodically. Prereq: BUAD 307

MGMT 379: 3 s.h.**Experimental**

Experimental Course in Management

MGMT 381: 3 s.h.**Data & Information Management**

Builds on the core concepts of data and information management. It is centered around the core skills of identifying organizational information requirements, modeling them using conceptual data modeling techniques, converting the conceptual data models into relational data models and verifying its structural characteristics with normalization techniques, and implementing and utilizing a relational database using an industrial-strength database management system. Includes coverage of basic database administration tasks. In addition to developing database applications, the course helps the students understand how large-scale packaged systems are highly dependent on the use of DBMSs. Building on the transactional database understanding, the course also provides an introduction to data and information management technologies that provide decision support capabilities under the broad business intelligence umbrella. Prereq: BUAD 307

MGMT 405: 3 s.h.**Topics in Management**

Advanced, innovative, or exploratory topics and disciplines within management. Specific content items developed by instructor. Most topics will be for business majors only. Offered periodically. Prerequisites may vary. Consult the current course offering.

MGMT 452: 3 s.h.**Operations and Supply Chain Management**

Survey of basic principles, concepts and techniques of operations management applicable to manufacturing as well as service organizations. Examines positioning, design and operating decisions and their interrelationships in the context of the overall competitive strategy of the firm. Explores current trends and innovations in operations management theory and practice. Topics include operations strategy, quality control/TQM, product/service design, capacity planning, process design, facility layout, design of work systems, location planning, supply chain management, inventory control, MRP/ERP, just-in-time systems, scheduling and project management. Prereq: MATH 130 or 235 and C- or higher in BUAD 251.

MGMT 453: 3 s.h.**Supply Chain Logistics Mgmt**

Study of the forward and reverse logistics supply chain management and arising globalization and sustainability challenges. Topics include strategic design of supply chain; management and control of flow and storage of products, services, and information from suppliers to consumers; and effective management of the reverse flow of returns, buybacks and end-of-life products to recapture value through refurbishing, remanufacturing, recycling, or proper disposal. Identification and analysis of emerging managerial issues in meeting complex mandated and competitive requirements of lean and green logistics systems. Prereq: MATH 235 and BUAD 231 (C- or higher) or BUAD 251 (C- or higher).

MGMT 454: 3 s.h.**Talent Acquisition**

Focused on providing a detailed understanding of the staffing process in organizations. The role of staffers is analyzed; major trends and the legal framework associated with staffing process is highlighted. Topics include: staffing strategies, strategic job analysis and competency modeling, forecasting, measurement, interviewing techniques etc.

MGMT 479: 3 s.h.**Experimental**

Experimental Course in Management

MGMT 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

MGMT 605: 3 s.h.**Business and Its Environment**

Business and Its Environment

MGMT 650: 3 s.h.**The Management Process**

The Management Process

MGMT 653: 3 s.h.**Operations Management**

Examines positioning, design and operating decisions and their interrelationships in the context of the overall competitive strategy of the firm. The international dimensions of operations management, as well as the relationships of operations management to other functional areas are stressed. Topics include operations strategy, quality management, product and service design, process design, capacity planning, facilities layout, design of work systems, location planning, total quality control, aggregate planning, independent demand inventory system, push and pull systems, enterprise resources planning, supply chain management, and scheduling.

MGMT 670: 3 s.h.**Strategy and Policy**

Capstone seminar in the formulation and administration of organizational planning and policy. The student is expected to utilize integrate, and apply the theories, concepts, principles and techniques relevant to business problems and situations. Uses case studies, course projects, library research, field research, group decision making, role-playing, simulations and other strategic planning and management process exercises. Emphasizes the global nature of business and utilizes technology to coordinate the activities of the group efforts. Prereq: Demonstrated proficiency in general business concepts at the introductory level through job experiences or coursework.

Management/Marketing (MGMK)

MGMK 300: 3-12 s.h.**Co-Op Ed Exp in Mgmt/Mktg**

Cooperative Education in Management and/or Marketing

MGMK 400: 3-12 s.h.**Co-Op Ed Exp in Mgmt/Mktg**

Cooperative Education Experience in Management/Marketing

MGMK 489: 1-4 s.h.**Honors Course**

Honors Course

MGMK 498: 1-4 s.h.**Independent Study**

Independent Study. See catalog or department for eligibility and registration information.

MGMK 500: 3-12 s.h.**Co-Op Ed Exp in Mgmt/Mktg**

Cooperative Education Experience in Management/Marketing

Marketing (MKTG)

MKTG 179: 3 s.h.**Experimental**

Experimental Course in Marketing

MKTG 279: 3 s.h.**Experimental**

Experimental Course in Marketing

MKTG 332: 3 s.h.**Consumer Behavior**

Analysis of individual and collective consumer behavior patterns both within and outside the marketplace through theoretical model building and empirical research findings. Emphasis on the role of consumer research in identifying, planning, implementing and evaluating both short-term and long-term marketing strategies. Offered annually. Prereq: C- or higher in BUAD 231.

MKTG 332H: 3 s.h.**Hon: Consumer Behavior****MKTG 333: 3 s.h.****Personal Selling**

Covers skills and knowledge required of sales representatives to understand customers' needs and make effective presentations. Includes prospecting and contacting customers, making presentations, handling objections, closing the sale and developing long-term relationships. Emphasis on individual role-play and group presentations. Offered annually. Prereq: C- or higher in BUAD 231.

MKTG 335: 3 s.h.**Advertising**

Economic and social roles of advertising in a contemporary business setting. Emphasis on the creation, development, implementation and evaluation of advertising campaigns through the analysis of creative processes, managerial techniques, media resources, budgeting methods and the concept of social responsibility. Offered annually. Prereq: C- or higher in BUAD 231.

MKTG 336: 3 s.h.**Retail Marketing**

The role of retail institutions in the marketing system. Emphasis on strategy development in the retailing context. Offered infrequently. Prereq: C- or higher in BUAD 231.

MKTG 337: 3 s.h.**Sales Force Administration**

Planning, direction and control of the sales force. Includes recruiting, selecting, training, supervising, compensating, motivating and evaluating sales representatives. Emphasis on acquisition of basic sales and managerial skills. Offered annually. Prereq: C- or higher in BUAD 231.

MKTG 379: 3 s.h.**Experimental**

Experimental Course in Marketing

MKTG 405: 3 s.h.**Topics in Marketing**

Advanced, innovative, or exploratory topics and disciplines within marketing. Specific content items developed by instructor. Most topics will be for business majors only. Offered periodically. Prerequisites may vary. Consult the current course offering.

MKTG 431: 3 s.h.**Marketing Research**

Research theory and techniques used in marketing activities. Stresses formulation of research objectives, instrument design, sample selection, data collection, statistical analysis, computer applications and report writing for managerial use. Offered fall, spring. Prereq: MATH 235, C- or higher in BUAD 231.

MKTG 431H: 3 s.h.**Hon: Marketing Research****MKTG 435: 3 s.h.****International Marketing**

The development of marketing strategy for entering and competing with businesses in foreign countries. Uniqueness of foreign markets and their impact on the marketing manager's decision-making processes are examined. Offered annually. Prereq: C- or higher in BUAD 231.

MKTG 436: 3 s.h.**Marketing Strategy**

Analysis of opportunities and problems confronting the marketing manager in decision making. Includes market segmentation, target marketing, positioning, market research, product life cycle strategies, marketing mix implementation and social responsibility. Emphasis on case analysis to bridge the gap between marketing theory and application. Offered annually. Prereq: MKTG (Formerly BUAD) 431 and 90 credits (Senior Standing).

MKTG 479: 3 s.h.**Experimental**

Experimental Course in Marketing

MKTG 499: 1-4 s.h.
Departmental Honors
 Departmental Honors

Mathematics (MATH)

MATH 070: 3 s.h.
Essential Mathematics

This course focuses on computational and problem-solving skills that students need to prepare them for the mathematical prerequisites in their chosen fields of study. Additionally the course is designed to build financial skills required for life success (e.g. financial management, budgeting, and so forth). The individual mathematical topics will be covered as needed by individual students in the class based on his/her current abilities. Potential topics of study will include addition, subtraction, multiplication, and division of whole numbers, rational numbers; study and application of ratio, proportion, and percent; applied topics dealing with measurement, areas and perimeters of geometric figures, and basic descriptive statistics. This course is taught in a hybrid learning environment including (but not limited to) face-to-face instruction/lecture, online video instruction, individual one-on-one coaching/tutoring, and adaptive learning computer technology. MATH 070 course credit cannot be counted towards fulfillment of a baccalaureate or associate degree.

MATH 079: 1-4 s.h.
Experimental/Developmental

Experimental Course for Pre-College Level study in Mathematics. Does not count toward 120 credits for degree completion.

MATH 090: 3 s.h.
Basic Mathematics

For students who need additional preparation before taking a college mathematics course. Remedial in nature and not applicable toward the science/math requirement. After successfully completing MATH 090, students are prepared to take courses that fulfill this requirement. Students who must take MATH 090 earn course credits, and the grade is counted in the cumulative grade point average, but MATH 090 course credit cannot be counted towards fulfillment of the baccalaureate or associate degree.

MATH 094: 2 s.h.
Fundamentals of Math I (MATH 104), Supplemental

Mathematics content that elementary and special education teachers of mathematics at any level need to know and understand before beginning to teach. Includes number systems, structure of algorithms, number theory, properties of integers, rational and real numbers, and beginning geometry and measurement. Emphasis on problem solving and reasoning within each topic.

MATH 100: 3 s.h.
Survey of Mathematical Ideas (G2)

A liberal arts course for students who will not be scheduling a technical/professional math course. A survey of mathematics important to the history of Western civilization and to the modern world. Introductory modules covered usually include number theory, geometry, topology, probability, statistics, graph theory, consumer mathematics and set theory. No credit in math/science block for math and science majors. Prereq: MATH 090 with a grade of C- or higher or math placement testing/evaluation before registration. Only one of MATH 100, 102, 107, and 108 may be taken for general education credit.

MATH 101: 3-5 s.h.
College Algebra

For students who need to improve their algebraic skills before taking a higher-level course such as MATH 151, 160 or 161; focuses on algebraic topics needed for success in college mathematics and its applications. Includes the real number system, linear equations and inequalities, word problems, polynomials and factoring, rational algebraic expressions, exponents and radicals, quadratic equations, irrational equations, graphs of equations, systems of equations and logarithmic and exponential functions. Prereq: high school algebra I, II and geometry; math placement testing/ evaluation before registration.

MATH 102: 3 s.h.
Math in Non-European Cultures (D, G2)

A survey of mathematical ideas developed by non-European cultures, including, but not limited to, those of Africans, Asians and native North, Central and South Americans. Includes culture and specific examples from the following areas of mathematics: number theory, topology, probability, group theory and logic. No credit under block G2 for math or science majors. Prereq: MATH 090 with a grade of C- or higher, math placement testing/ evaluation before registration. Only one of MATH 100, 102, 107, and 108 may be taken for general education credit.

MATH 104: 3 s.h.
Fundamentals of Math 1 (G2)

Mathematics content that elementary and special education teachers of mathematics at any level need to know and understand before beginning to teach. Designed to equip all such majors with sufficient knowledge and facility in mathematics for teaching it effectively. Includes sets and logic, number systems, structure of algorithms, number theory, properties of integers, rational numbers and real numbers, and beginning geometry and measurement. Emphasis on problem solving and reasoning within each topic. Required of all early childhood education and middle level majors. Prereq: math placement testing/evaluation before registration.

MATH 105: 3 s.h.
Fundamentals of Math 2 (G2)

An extension of MATH 104; covers additional mathematics topics relevant to teaching elementary mathematics. Includes algebra, additional study in geometry and measurement, probability and statistics, graphing and further emphasis on problem solving and reasoning. Required of all early childhood education majors. Prereq: C or higher in MATH 104 and passing score on the basic skills test.

MATH 107: 3 s.h.
Math Survey: Sports & Games (G2)

A liberal arts course for students who will not be scheduling a technical/professional mathematics course. Explores topics in mathematics through the lens of sports, athletic competitions, and games. Introductory modules may include (but not be limited to): number theory, geometry/measurement, algebra, probability, statistics, voting methods, and graph theory. No credit under G2 block for math or science majors. Only one of MATH 100, 102, 107, and 108 may be taken for general education credit. Prereq: MATH 090 with a grade of C-minus or higher or MPT 100.

MATH 108: 3 s.h.**Math Survey: Art & Music (G2)**

A liberal arts course for students who will not be scheduling a technical/professional mathematics course. Explores topics in mathematics through the lens of the fine arts, which may include (but is not limited to) architecture, visual arts, music, and dance. Mathematical content covered may include geometry, transformations, patterns, algebra, sequences and series, permutations, number theory, and fractals. No credit under G2 block for math or science majors. Only one of MATH 100, 102, 107, and 108 may be taken for general education credit. Prereq: MATH 090 with a grade of C-minus or higher or MPT 100.

MATH 110: 2 s.h.**Trigonometry**

For students preparing to take calculus who need additional background in trigonometry. Beginning with angles, numerical trigonometry and triangle solving, it develops the concepts and analytical skills required in calculus: identities, inverse functions, trigonometric equations, graphs and applications. Prereq: MATH 101 or math placement testing/evaluation before registration and high school algebra I, II and geometry.

MATH 120: 2 s.h.**Logic for Information Technology (G2)**

Discrete mathematics and its applications to technology including formal mathematical notation, propositional logic, predicate logic, set theory, relations, functions, and matrices. No credit toward a math or four-year computer science major. Prereq: MPT 120 or C- or higher in MATH 101.

MATH 130: 3 s.h.**Elements of Statistics 1 (G2)**

Derivation of basic formulas; measures of central tendency and variability; probability and normal curve; sampling and hypothesis testing; confidence intervals. No credit toward a math or four-year computer science major, or under block G2 for majors in the School of Science and Mathematics except for nursing majors and allied health technology majors. Prereq: any 100-level MATH course or math placement testing/evaluation before registration. MATH 234 and MATH 235 are equivalent courses, credit will not be given for MATH 130, 234 and/or 235.

MATH 151: 4 s.h.**Calculus for Management (G2)**

Elementary calculus and its applications in business, economics, life and social sciences. Functions, limits and continuity. The derivative, applications in marginal analysis, optimization, differentials and error estimation. Antiderivatives, area under a curve and definite integrals; integration by parts. Exponential and logarithm functions; applications to growth and decay problems. Improper integrals. No credit toward a major or minor in mathematics. Prereq: MATH 101 or equivalent with a grade of C- or higher, or math placement testing/evaluation before registration. Credit will not be granted for more than one course from MATH 151, 161 or 163H. These courses are considered equivalent and will be processed as repeat credit.

MATH 160: 4 s.h.**Precalculus (G2)**

For students preparing to take Calculus I (MATH 161) who need additional background. Covers topics in which beginning calculus students are often deficient: elementary functions, curve sketching, theory of equations, inequalities, trigonometry and analytic geometry. No credit toward a math major. Prereq: two years of high school algebra, one year of high school geometry and trigonometry, and math placement testing/evaluation before registration; or MATH 101.

MATH 161: 4 s.h.**Calculus 1 (G2)**

Introduces concepts and techniques of calculus, beginning with limits. Major emphasis is on the theory and applications of limits, continuity, derivatives, antiderivatives and the definite integral. Includes introductory calculus of trigonometric, inverse trigonometric, exponential and logarithmic functions. Prereq: C- or higher in MATH 160 or math placement testing/evaluation before registration. Credit will not be granted for more than one course from MATH 151, 161 or 163H. These courses are considered equivalent and will be processed as repeat credit.

MATH 161H: 4 s.h.**Hon: Calculus 1 (G2)****MATH 163H: 5 s.h.****Honors Calculus 1 (G2)**

The progression of mathematical concepts, in the context of the thought and civilization of the time, from the Babylonians to the 20th century. Focus on the contributions of the Hellenic and Alexandrian Greeks as a point of departure for the evolution of geometry, number theory, analysis and logic. Proofs of some of the great theorems. Offered in fall, spring and periodically in summer. Credit will not be granted for more than one course from MATH 151, 161 or 163H. These courses are considered equivalent and will be processed as repeat credit.

MATH 179: 4 s.h.**Experimental**

Experimental

MATH 204: 3 s.h.**Algebraic Foundations for Mid-Level Teacher (G2)**

Designed for middle-level (4-8) teacher candidates. It contains a concrete study of algebraic structures encountered in the middle-level school mathematics curriculum. Content includes sequential patterns and examples and properties of rings and integral domains such as the integers, integers mod n , polynomials and matrices. Prereq: passing score on BST, and grade of C or better in MATH 104 or department permission. For middle level education majors only.

MATH 205: 3 s.h.**Geometry for the Middle-Level Teacher (G2)**

Designed to equip middle-level (4-8) teacher candidates with sufficient knowledge and mathematical experiences for teaching geometry and measurement effectively. Includes the study of two-dimensional and three-dimensional figures, geometric constructions, congruence, similarity, angle measure, distance, area and volume. Connections between geometry and other mathematics topics; nature and art are addressed. Prereq: passing score on BST, and C or better in MATH 104 or department permission. For middle-level education majors only.

MATH 211: 4 s.h.**Calculus 2 (G2)**

Continuation of MATH 161. Techniques of integration, applications of the definite integral, improper integrals, parametric equations, polar coordinates, sequences and infinite series. Prereq: C- or higher in MATH 161 or 163.

MATH 230: 3 s.h.**Probability and Stats for Mid-Level Teacher (G2)**

Designed for middle-level (4-8) teaching candidates as an introduction to probability and statistics. Course will cover the following topics at an appropriate level: descriptive statistics, counting and basic probability, concept of random sampling, random variables and probability distributions, and statistical inference involving confidence intervals and hypothesis testing. Prereq: passing score on BST and C or better in MATH 104 or department permission. For middle-level education majors only.

MATH 234: 4 s.h.**Statistics for Health Sciences (G2)**

For nursing program and other health science students. Descriptive statistics, odds ratios, counting, basic probability, concept of random sampling, random variables, probability distributions, and statistical inference including confidence interval estimation and hypothesis testing for one and two sample problems involving means and proportions, chi-squared tests, one way ANOVA, simple linear regression, and correlation will be covered at an appropriate level. Prereq: Math Placement or a 100 level MATH course. MATH 130 and MATH 235 are equivalent courses, credit will not be given for MATH 130, 234 and/or 235.

MATH 235: 3 s.h.**Survey of Statistics (G2)**

A survey of elementary probability theory, estimation, hypothesis testing and simple regression and correlation. Interpretation of statistical inference in the analysis of data. Emphasis on applications in both behavioral and physical sciences. Prereq: MATH 101 or MATH 151 or higher, or math placement of MATH 151 or higher. MATH 130 and MATH 234 are equivalent courses, credit will not be given for MATH 130, 234 and/or 235.

MATH 236: 3 s.h.**Elements of Statistics 2 (G2)**

An extension of MATH 130 or MATH 235. Includes estimation, hypothesis testing, design of experiments with analysis of variance, regression analysis, covariance analysis and nonparametric approaches. Includes experiences using a variety of computing devices. A substantial methods course for any major who needs to use statistical techniques. No credit toward math major. Offered in spring. Prereq: MATH 130 or MATH 235.

MATH 255: 3 s.h.**Intro to Data Analytics**

Introduction to data analysis techniques and programming that enables real-time decision making in IT organizations. Includes skills and applications in pre-processing, preparing, and reporting data for further analysis. (Cross-listed with INTE 255, credit may not be received for both courses.)

MATH 256: 4 s.h.**Data Visualization and Communication (G2)**

This course is the continued exploration and application of data analysis techniques and programming that allows for the cleanup, analysis, interpretation, and presentation of business-related data. Includes skills and applications in pre-processing, preparing, reporting, and presenting data for further analysis. Students will be exposed to datasets created and managed by business organizations, and learn to ask salient strategic and operational questions based on the information contained within the datasets. Students will analyze statistical relations between variables, create visual depictions of the relations inherent in the data, and communicate their findings to broad audiences in oral and written formats.

MATH 279: 1-4 s.h.**Experimental**

Experimental

MATH 300: 3-12 s.h.**Co-Op Ed Experience in Math**

Co-Op Ed Experience in Math

MATH 301: 3 s.h.**History of Mathematics (P)**

The progression of mathematical concepts in the context of the thought and civilization of the time, from the Babylonians to the 20th century. Focus on the contributions of the Hellenic and Alexandrian Greeks as a point of departure for the evolution of geometry, number theory, analysis and logic. Proofs of some of the great theorems. Prereq: COMM 100, ENGL 110, MATH 151 or 156 or 161 or 163, and junior status.

MATH 301H: 3 s.h.**Hnrs:History of Mathematics (P)**

The progression of mathematical concepts in the context of the thought and civilization of the time, from the Babylonians to the 20th century. Focus on the contributions of the Hellenic and Alexandrian Greeks as a point of departure for the evolution of geometry, number theory, analysis and logic. Proofs of some of the great theorems. Prereq: COMM 100, ENGL 110, MATH 151 or 156 or 161 or 163, and junior status.

MATH 304: 4 s.h.**Matrix Algebra & Applications**

An introduction to matrix algebra with emphasis on applications: systems of linear equations, matrix algebra, determinants, Euclidean and general vector spaces, inner product spaces, eigenvalues and eigenvectors, matrix transformations, numerical methods for matrices, selected applications such as Markov chains, strategy games, cryptography, bar codes, Hadamard matrices, error-correcting codes, graph theory, computer graphics and internet search engines. Credit will not be granted for both MATH 304 and 322. Prereq: C- or better in MATH 161/163H.

MATH 305: 2 s.h.**Teaching Math in Secondary Schools 1**

The first of two secondary mathematics methods courses, participants will investigate mathematics teaching and learning from both teacher and student perspectives. Course participants will engage in mathematical problem solving and in the study of mathematics as the foundation for understanding current curriculum and standards. Lesson planning follows from the consideration of different types of mathematical content, including skills and concepts. Looking specifically at the learning of mathematics and questioning to promote higher-level thinking, this course prepares students for field experiences in subsequent semesters. Recommended: take concurrently with EDFN 211 and EDFN 241. Pre/Coreq: C- or higher in MATH 211.

MATH 310: 3 s.h.**Intro to Mathematical Proof (W)**

Emphasizes mathematical reasoning and communication of mathematical ideas both orally and in writing. Symbolic logic. Techniques of mathematical proof. Algebra of sets, binary relations and functions. Infinite sets, both countable and uncountable. Prereq: ENGL 110 and C- or higher in MATH 211.

MATH 310H: 3 s.h.**Hon: Intro to Mathematic Proof (W)**

MATH 311: 4 s.h.**Calculus 3 (G2)**

Continuation of MATH 211. Vector calculus, functions of several real variables, partial differentiation, implicit functions, multiple integrals, line and surface integrals and applications. Prereq: C- or higher in MATH 211.

MATH 312: 1 s.h.**Software for Multivariable Calc**

This course will introduce students to a computer algebra system and programming language of use in understanding multivariable calculus. Assuming no prior experience with this software, the students will learn how to evaluate algebraic expressions, plot functions and perform many operations common in calculus, such as integration and differentiation. Students will develop skills with this software that are useful for the visualization and manipulation of multivariable and vector-valued functions. Offered infrequently. Coreq: C- or higher in MATH 311.

MATH 319: 1 s.h.**Calculus and Actuarial Prbl Slvg**

An extension and synthesis of the calculus sequence that provides students with the problem-solving skills emphasized in such examinations as the Society of Actuaries Exam 1. Does not count as an upper-division elective for the mathematics major or minor. Offered in spring. Prereq: C- or higher in MATH 311.

MATH 322: 4 s.h.**Linear Algebra 1 (G2)**

A rigorous introduction to linear algebra. Includes systems of linear equations, matrix algebra, determinants, vector spaces, inner product spaces geometry in R^n , linear transformations, orthogonal transformations, eigentheory and diagonalization. Prereq or coreq: C- or higher in MATH 311; MATH 310 recommended. Credit will not be given for this course and MATH 304. MATH 322 is intended for mathematics majors and is more theory and proof-based. MATH 304 is more application oriented and intended for computer science or data science majors

MATH 325: 3 s.h.**Mathematical Connections**

Mathematical Connections is a 3-credit required course for BSE mathematics majors. Pre-service secondary mathematics teachers (middle and high school) will explore the nature of the mathematics that they will teach through the lens of the undergraduate mathematics courses that they have taken as part of their required program. Mathematical topics will include number systems, functions, number theory, trigonometry, geometry (Euclidean and non-Euclidean), calculus, and statistics. The course will include an examination of concept analysis, problem analysis and mathematical connections between standard secondary mathematics content and post-secondary mathematics coursework. The course will actively involve pre-service teachers in a productive dialogue about and rigorous investigation into the mathematics that they will teach. Restricted to BSE majors. Pre/ Coreq: C- or higher in MATH 333, and MATH 345, and MATH 354 or permission of instructor.

MATH 333: 4 s.h.**Probability and Statistics**

Designed for mathematics education majors. A rigorous study of probability, distribution theory and the basics of statistical inference. Includes probability, expectation, discrete and continuous distributions, descriptive statistics and both estimation and hypothesis testing for one- and two-sample problems. Credit will not be granted for both MATH 333 and MATH 335. Prereq: C- or higher in MATH 311.

MATH 335: 3 s.h.**Mathematical Statistics 1**

Probability, random variables and probability distributions, mathematical expectation, special probability distributions and probability densities. MATH 335 may be considered as an introductory course in probability theory. Offered in fall. Credit will not be granted for both MATH 333 and MATH 335. Prereq: C- or higher in MATH 311.

MATH 345: 3 s.h.**Abstract Algebra 1**

Groups, rings, fields, integral domains. Emphasis on structure of algebra. Prereq: C- or higher in MATH 310 and 322.

MATH 353: 3 s.h.**Survey of Geometry**

Various examples of axiom systems, axiomatic development of Neutral Geometry followed by Euclidean and Hyperbolic Geometry. Models for Euclidean and Hyperbolic Geometry. Emphasis on proving geometric theorems, both orally and in writing. Offered in fall. Prereq: C- or higher in MATH 310 and 322 or permission of instructor.

MATH 354: 4 s.h.**Classical and Transformational Geometry**

Geometry from both classical and transformational points of view. The classical part of the course will focus on the axiomatic development of neutral geometry followed by Euclidean and hyperbolic geometry. The transformational part of the course will begin with the study of two families of transformations: isometries and similarities, followed by the investigation of various geometric theorems in terms of these two families of transformations. Emphasis on proving geometric theorems using both classical and transformational approaches. Prereq: C- or better: MATH 310 and MATH 322.

MATH 355: 3 s.h.**Transformational Geometry**

The study of geometry from a transformational point of view. The group of affine transformations, with the subgroups of similarities and motions, is studied with investigation of invariant properties. Some exposure to transformations in the complex plane. Offered in spring and periodically in summer. Prereq: C- or higher in MATH 310 and 322 or permission of instructor.

MATH 355H: 3 s.h.**H: Transformational Geometry****MATH 365: 3 s.h.****Ordinary Differential Equation**

First-order differential equations; linear first- and second-order initial-value problems; power series solutions; applications. Also includes at least one of the following topics: special functions of mathematical physics, Laplace transforms, systems of first-order equations. Offered in fall, spring. Prereq: C- or higher in MATH 311.

MATH 370: 3 s.h.**Operations Research**

Principles of model building; examples from linear optimization, network analysis, dynamic programming, probabilistic decision theory, Markov chains, queuing theory, simulation and inventory models. Applications and theory will be examined. Offered periodically. Prereq: C- or higher in MATH 322 and one of MATH 235, 333 or 335 or permission of instructor.

MATH 372: 3 s.h.**Financial Mathematics I**

Provides an understanding of the fundamental concepts of financial mathematics, and how those concepts are applied in calculating present and accumulated values for various streams of cash flows as a basis for future use in: reserving, valuation, pricing, asset/liability management, investment income, capital budgeting, and valuing contingent cash flows. Prereq: C- or better in MATH 211

MATH 375: 3 s.h.**Numerical Analysis**

Numerical methods for solving systems of linear equations, solving nonlinear equations, integration, interpolation, approximation and least squares curve fitting. Error theory. Offered in spring. Prereq: C- or higher in CSCI 161, MATH 311 and 322.

MATH 379: 3 s.h.**Experimental**

Experimental

MATH 393: 3 s.h.**Number Theory**

The study of the properties of integers with respect to the fundamental operations. Primary emphasis on the logical derivations of these properties. Includes induction, divisibility, congruences, theorems of Fermat and Euler, continued fractions and quadratic reciprocity. Offered periodically. Prereq: C- or higher in MATH 310.

MATH 393H: 3 s.h.**H: Number Theory**

H: Number Theory

MATH 395: 3 s.h.**Introduction Combinatorics**

Mathematical foundation for the concepts and techniques used in combinatorics. Topics include recurrence relations, finite differences, generating functions, pigeonhole principle, special sequences of integers (such as Fibonacci, Sterling and Bell sequences), principle of inclusion and exclusion, and an introduction to the theory of graphs. Applications will be indicated. Offered periodically. Prereq: C- or higher in MATH 322.

MATH 400: 3-12 s.h.**Co-Op Ed Experience in Math**

Co-Op Ed Experience in Math

MATH 405: 3 s.h.**Teaching Math in Secondary Schools 2**

The second of two secondary mathematics methods courses, participants will focus on: lesson planning, unit development, and implementation; assessment and evaluation; classroom management and organization within school communities; and continued professional growth as reflective practitioners. A considerable portion of class time will be devoted to teaching mathematics to secondary school students. Must be taken simultaneously with EDSE 321, EDSE 340, SPED 346. Offered fall. Prereq/Co-requisite: C- or higher in MATH 305. Prereq: C- or higher in MATH 325, MATH 333 (or 335/435), MATH 345, and MATH 354.

MATH 408: 1-3 s.h.**Topics in Mathematics**

Topics in Mathematics. Topics courses are scheduled by arrangement with the instructor; semester hours of credit and meeting times for those courses are set by agreement.

MATH 418: 1-3 s.h.**Topics in Math Education**

Topics in Mathematics Education. Topics courses are scheduled by arrangement with the instructor; semester hours of credit and meeting times for those courses are set by agreement.

MATH 419: 1 s.h.**Actuarial Science Seminar**

A synthesis of calculus and probability that will develop the knowledge of the fundamental probability tools for quantitatively assessing risk. Students will be provided with the skills required in such examinations as the SOA Exam P and CAS Exam 1. Does not count as an upper-division elective for the mathematics major or minor. Offered in spring.

MATH 422: 3 s.h.**Linear Algebra 2**

A continuation of MATH 322. Topics include further theory of linear transformations and their matrix representations: invariant subspaces, equivalent and similar matrices, canonical forms. The vector space $L(V, W)$. Orthogonal transformations and isometries; analysis of Euclidean motions in R^3 . Least squares approximation and theory of generalized inverses. Bilinear and quadratic forms and their matrix representations; applications to conic sections in R^2 and quadric surfaces in R^3 . Complex vector spaces. Offered periodically. Prereq: MATH 310 and C- or higher in MATH 322.

MATH 435: 3 s.h.**Mathematical Statistics 2**

A continuation of MATH 335. Functions of random variables, sampling distributions, point estimation, interval estimation, hypotheses-testing theory and applications. Offered in spring. Prereq: C- or higher in MATH 335.

MATH 435H: 3 s.h.**HNRS: Mathematical Stats 2****MATH 438: 1-3 s.h.****Topics in Statistics**

Topics in Statistics. Topics courses are scheduled by arrangement with the instructor; semester hours of credit and meeting times for those courses are set by agreement.

MATH 445: 3 s.h.**Abstract Algebra 2**

Continuation of MATH 345. Introduction to field theory, rings of polynomials, introduction to Galois theory. Offered periodically. Prereq: C- or higher in MATH 345.

MATH 457: 3 s.h.**Elementary Differential Geometry**

Frenet frames; curvature and torsion of curves in 3-space. Calculus of vector fields; geodesics and curvature of surfaces in 3-space. Surface area and volume. The Euler characteristic of a surface and the Gauss-Bonnet theorem. Rigid motions and isometries. Riemannian metrics, parallelism, non-Euclidean geometries and applications. Offered periodically. Prereq: C- or higher in MATH 310, 311, 322.

MATH 464: 3 s.h.**Real Analysis 1**

Rigorous development of the concepts and methods of calculus. The real number system and its topology; theory of limits and continuity; differentiable functions and their properties, the Riemann integral. Prereq: C- or higher in MATH 311 and MATH 345 or department permission.

MATH 464H: 3 s.h.**Hrs: Real Analysis 1**

MATH 465: 3 s.h.**Real Analysis 2**

Continuation of MATH 464. Topics chosen from the following: convergence and uniform convergence of infinite sequences and series of functions; topology of Euclidean n -space \mathbb{R}^n ; differential calculus of functions $\mathbb{R} \rightarrow \mathbb{R}$ and $\mathbb{R}^n \rightarrow \mathbb{R}^m$; extreme values; implicit and inverse function theorems; Riemann integration in \mathbb{R}^n ; metric spaces; function spaces; Riemann-Stieltjes integration. Offered infrequently. Prereq: C- or higher in MATH 464.

MATH 467: 3 s.h.**Partial Differential Equations**

Fourier series and the method of separation of variables; the wave equation, heat equation and Laplace's equation; d'Alembert's formula. Maximum principles, energy integrals and uniqueness. Sturm-Liouville problems and eigenfunction expansions. Offered in fall. Prereq: C- or higher in MATH 365.

MATH 471: 3 s.h.**Mathematical Modeling**

Applications of mathematics to real-world problems drawn from industry, research laboratories, the physical sciences, and engineering and the scientific literature. May include parameter estimation, curve fitting, elementary probability, optimization, computer programming, and ordinary and partial differential equations. Offered periodically. Prereq: C- or higher in MATH 365.

MATH 472: 3 s.h.**Financial Mathematics II**

Develops knowledge of the theoretical basis of actuarial models and the application of those models to insurance and other financial risks. Pricing formulas for forwards, futures, and options are developed and used in financial strategies designed to reduce risk. Prereq: C- or better in MATH 335 or MATH 333 and C- or better in MATH 372.

MATH 478: 1-3 s.h.**Topics in Applied Mathematics**

Topics in Applied Mathematics. Topics courses are scheduled by arrangement with the instructor; semester hours of credit and meeting times for those courses are set by agreement.

MATH 479: 3 s.h.**Experimental**

Experimental

MATH 483: 3 s.h.**Point-Set Topology**

Foundation course for extensive study in modern higher analysis, topology and related areas. Infinite set theory, metric spaces, topological spaces, separation properties, continuous mappings, homeomorphisms, convergence theory, product spaces, quotient spaces, connectedness, compactness, function spaces, applications. Offered infrequently. Prereq: C- or higher in MATH 464 or permission of instructor.

MATH 489: 1-4 s.h.**Honors Course**

For the definition of honors course/thesis and eligibility, refer to the Special Academic Opportunities section of this catalog.

MATH 498: 1-3 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

MATH 499: 1-4 s.h.**Departmental Honors (AW)**

For the definition of honors course/thesis and eligibility, refer to the Special Academic Opportunities section of this catalog.

MATH 500: 3-12 s.h.**Co-Op Ed Experience in Math**

Co-Op Ed Experience in Math

MATH 502: 4 s.h.**Linear Algebra**

Systems of linear equations, matrix algebra and determinants; real vector spaces, linear independence, basis and dimension; real inner product spaces, Gram-Schmidt orthogonalization; eigen theory and diagonalization; linear transformations and matrix representation. Prereq or Coreq: MATH 311; MATH 310/520 recommended.

MATH 503: 4 s.h.**Probability and Stats for Tchrs**

A rigorous one-semester study of probability, distribution theory and the basics of statistical inference. Topics include probability, expectation, discrete and continuous distributions, descriptive statistics and both estimation and hypothesis testing for one- and two-sample problems. Prereq: MATH 311.

MATH 504: 3 s.h.**Modern Algebra for Teachers**

Algebraic properties of complex number systems, set theory, groups, rings, integral domains and fields. MATH 310/520 and MATH 322/502.

MATH 505: 4 s.h.**Classical & Modern Geometry**

Study of geometry from both classical and transformational points of view. The classical part will focus on the axiomatic development of various forms of geometry; the transformational part will focus on the study of geometry in terms of two families of transformations: isometries and similarities. Emphasis on investigating geometry using both classical and transformational approaches and their interactions.

MATH 506: 3 s.h.**Modern Analysis for Teachers**

Real number system, limits of sequences and functions, theory of differentiation, Riemann integration, infinite series. Prereq: MATH 310/520, 311, 322/502. MATH 345/504 recommended.

MATH 520: 3 s.h.**Logic and Foundations of Math**

Theory of inference, symbolic logic, nature of axiom systems, validity of proofs, consistency, independence, completeness, theory of sets and cardinal numbers.

MATH 535: 3 s.h.**Statistical Methods 1**

Survey of statistical methods used in research, education, behavioral science and biomedical applications. Experimental designs discussed regarding advantages, disadvantages, sampling problems and analysis. Regression and analysis of variance. Prereq: An elementary probability or statistics course. Offered in fall and periodically in summer.

MATH 536: 3 s.h.**Statistical Methods 2**

Continuation and extension of statistical methods introduced in Statistical Methods I (Math 535). Advanced topics in analysis of variance, randomized block designs and experimental designs. Prereq: Math 535 or permission of instructor. Offered in spring.

MATH 536H: 3 s.h.**Hon: Statistical Methods II**

MATH 537: 1 s.h.**Statistical Problem Solving Seminar**

Capstone course designed to serve as outcome assessment for math majors enrolled in statistics option. Course involves problem solving, data analysis and statistical consulting. Materials drawn from real-world problems. Prereq: Math 535. Coreq: Math 536. Offered in spring.

MATH 566: 3 s.h.**Complex Variables**

Complex number system, analytic functions, elementary functions, contour integration, residues and poles, conformal mapping. Prereq: MATH 506 or equivalent. Offered infrequently.

MATH 577: 3 s.h.**Problems in Applied Math**

An investigation of one or more topics of current interest in applied mathematics. Specific topics to be covered vary but are announced each time the course is offered. Offered infrequently.

MATH 592: 3 s.h.**Graph Theory**

Finite graphs, multigraphs, digraphs and networks from theoretical, practical and historical perspectives. Specific topics include isomorphisms, graph variants, planarity and nonplanarity, traversability, colorings, flows, matchings and optimization algorithms. Prereq: MATH 502 or equivalent. Offered periodically.

MATH 592H: 3 s.h.**HNRS: Graph Theory****MATH 602: 3 s.h.****Equity Issues in Math Ed**

Designed for graduate level students with an interest in equity issues in mathematics education. In this course, we examine issues of equity in mathematics education from various theoretical and practical perspectives and long lines of race, gender, culture and socioeconomic status. It is a reading-intensive course that spans such topics as the achievement gap, tracking, culturally-relevant pedagogy, multiculturalism, the nature of mathematics and mathematics for democracy and social justice. Course assignments will be differentiated to ensure they are relevant to the concerns of both practicing teachers as well as students without a teaching background that intend to pursue further graduate study.

MATH 603: 3 s.h.**History of Mathematics**

Evolution of mathematical concepts from antiquity to the present century. Emphasis on eras of great mathematical activity.

MATH 604: 3 s.h.**Ethnomathematics**

This course aims to introduce Ethnomathematics as a field by examining mathematics across and within cultures. In addition, the course is designed to strengthen and expand students' understanding of mathematical topics (e.g., number systems, geometry, combinatorics, group theory) through study of the mathematics of world cultures. Furthermore, students will discuss ways in what is done in the course may be used to refresh or augment 7-12 school mathematics courses and develop school materials in Ethnomathematics.

MATH 606: 3 s.h.**Noyce - Transitioning**

Intended to address topics and concerns relevant to recently-certified NOYCE secondary mathematics teachers as they transition to their first year of teaching in a high-needs school district. Through readings, class discussions, individual presentations, and written assignments, participants reflect on their student teaching experiences, further explore challenges of working with diverse groups of students, and develop strategies to increase their effectiveness as a teacher in the context of a high-needs district. Instructor Permission required.

MATH 607: 3 s.h.**Noyce - Moving to Tenure**

Intended as an extension to MATH 606 and meant to address topics and concerns relevant to recently-certified NOYCE secondary mathematics teachers as they complete their first year of teaching in a high-needs school district. Through readings, class discussions, individual presentations, and written assignments, participants reflect on their experiences during the first year of teaching, further explore challenges of working with diverse groups of students, and develop strategies to increase their effectiveness as a teacher in the context of a high-needs district. Instructor Permission required.

MATH 610: 3 s.h.**Problem Solving Seminar**

Develops students' problem-solving abilities in mathematics and teaching of problem solving to high school students. Includes discussion of solutions to problems and the theories of problem solving. For both teachers and nonteachers. Offered periodically.

MATH 611: 3 s.h.**Learning Mathematics**

Investigation of the learning theory of constructivism and its application to the learning of mathematics. Emphasis on higher-order concept acquisition and schema development, and their relationship to mathematical instruction and teacher decision making. Individual differences in learning styles are also discussed. Prereq: teaching experience or permission of the instructor. Offered periodically.

MATH 613: 3 s.h.**Elem/Sec Math Connections**

This course is designed for graduate level students and will be of particular interest to practicing mathematics teachers of grades 7-12. In this course, we will explore the foundational concepts of the K-6 mathematics curriculum in significant depth while reflecting on ways to build strong connections between this elementary content and the content in the 7-12 curriculum. The goal is for students to see where their own teaching fits in the broader scheme of K-12 mathematics education so that they can design instruction that builds on their own students' prior understanding and contributes to a more holistic development for mid-level, middle, and high school mathematics learners. Course assignments may involve presentations, discussions, reading, written exams, papers, problem solving, problem posing, and instructional design.

MATH 614: 3 s.h.**Current Issues in Middle Sch**

Current issues relating to middle school mathematics instruction, including issues associated with teaching strategies as well as curricular issues. Central to this discussion will be the NCTM's Principles and Standards for School Mathematics and the PA Academic Standards for Mathematics. Prereq: teaching experience or permission of the instructor. Offered periodically.

MATH 615: 3 s.h.**Current Issues in Secondary Sch**

Current issues relating to secondary school mathematics instruction, including issues associated with teaching strategies as well as curricular issues. Central to this discussion will be the NCTM's Principles and Standards for School Mathematics and the PA Academic Standards for Mathematics. Prereq: teaching experience or permission of the instructor. Offered periodically.

MATH 617: 3 s.h.**Middle/Secdry Schl Innovatns**

Current curricular issues and teaching strategies associated with educational innovations that are invariant with respect to the middle school-secondary school boundary. Central to this discussion will be the NCTM's Principles and Standards for School Mathematics and the PA Academic Standards for Mathematics. Prereq: teaching experience or permission of the instructor. Offered periodically

MATH 618: 3 s.h.**7-12 Assessment**

Course for secondary mathematics teachers who wish to explore the nature of the mathematics assessment from a variety of perspectives. The course will examine traditional and non-traditional forms to assessment as well as the purpose of formative and summative assessments - allowing for discussion of the pros and cons to each. The course will also examine the impact of assessment tools on individual classroom instruction as well as within local departments, schools, districts, states and national education issues. The course will seek to actively involve teachers in a productive dialogue about the mathematics that they teach and explore a variety of levels at which the mathematics can be assessed. In order to do this, it will be necessary at times to expand and explore K-16 mathematics assessment at some length.

MATH 619: 3 s.h.**Advanced Perspectives**

Course is for secondary mathematics teachers at the middle or high school level who wish to explore the nature of the mathematics that they teach from a different viewpoint. The course will look at typical secondary mathematics topics including the real number system, polynomials, number theory, trigonometry and Euclidean geometry while examining concept analysis, problem analysis and mathematical connections. The course will actively involve in-service and pre-service teachers in a productive dialogue about the mathematics that they teach, and potential developmental or extensions that could be put into practice at each level. The class will also explore a variety of levels at which it may be appropriate to address these issues with their own students.

MATH 622: 3 s.h.**21st Century Math**

The intent of the course, Teaching Mathematics in The 21st Century, is to examine, study, and analyze teaching techniques and alternate approaches to teaching and learning mathematics in the 21st century. Students will experiment with a variety of pedagogies that are more in-line with the way in which 21st century students live rather than how they are often taught. Comparisons of multiple pedagogies (current, past and potential future) will be frequently made and discussed.

MATH 642: 3 s.h.**Linear Algebra**

Vector spaces, linear transformations, matrices, systems of equations, determinants. Prereq: MATH 502 or equivalent. Offered infrequently.

MATH 650: 3 s.h.**Topics in Geometry**

Topics selected from the parallel postulate and models for Euclidean and non-Euclidean geometries; projective geometry; local geometry of smooth space curves; geometry of smooth surfaces in space; geometry of space-time; finite geometries; representation of a geometry as a group of transformations acting on a set. Prereq: teaching experience or permission of instructor. Offered infrequently.

MATH 670: 3 s.h.**Operations Research**

Principles of model building; examples from linear optimization, network analysis, dynamic programming, probabilistic decision theory, Markov chains, queuing theory, simulation and inventory models. Applications and theory. Prereq: MATH 642 or equivalent, and a statistics course or equivalent. Offered periodically.

MATH 672: 3 s.h.**Math Modeling in Secondary Sch**

of the process of mathematical modeling. Creative and empirical model construction, model analysis and model research. Problems taken from a variety of disciplines. Some problems suitable for algebra and geometry students; others require some knowledge of calculus and statistics. Prereq: MATH 502 or its equivalent. Offered periodically.

MATH 675: 3 s.h.**Numerical Analysis**

Numerical treatment of equations, matrices and systems of equations; interpolation and approximation by polynomials; numerical integration; method of least squares. Prereq: MATH 502 and MATH 506, or equivalent. Offered in fall.

MATH 679: 3 s.h.**Technol in Secondary Schl Math**

Introduction to technologies currently available for teaching secondary mathematics. Emphasis on the use of modern graphics calculators, although computer software is also presented. Capabilities of the technologies examined in depth, but emphasis will be on the use of this technology in the classroom. Mathematical topics selected from elementary algebra, geometry, algebra II, precalculus and calculus. Prereq: secondary teaching experience. Offered periodically.

MATH 683: 3 s.h.**General Topology**

Set theory, metric and topological spaces, cluster points, closure, interior and boundary, continuity, homeomorphisms, product and quotient spaces, separation, compactness, connectedness, completeness. Prereq: MATH 502, 504 and 506.

MATH 691: 3 s.h.**Combinatorics**

Counting techniques including the multiplication principle, the addition principle, the pigeon-hole principle, permutations, combinations, the principle of inclusion-exclusion, recurrence relations, generating functions and Polya's Theory of Enumeration. Prereq: MATH 502 or equivalent. Offered periodically.

MATH 693: 3 s.h.**Number Theory**

The classic higher arithmetic of integers: mathematical induction, divisibility, congruences, prime numbers, diophantine equations. Euler-Fermat Theorem and quadratic reciprocity. Offered periodically.

MATH 695: 3 s.h.**Topics in Mathematics**

Investigation of one or more mathematical topics of current interest not covered in regular courses. Topics and methods of instruction may vary according to the needs and interests of students and faculty involved. Offered infrequently.

MATH 696: 1-3 s.h.**Independent Study**

Selected topics. Prereq: permission of chairperson. Offered infrequently.

MATH 697: 1-3 s.h.**Topics in Math Education**

Investigation of one or more topics of current concern in mathematics education not covered in regular courses. Course content varies according to the needs and interests of students and faculty involved. Offered infrequently.

MATH 698: 1-3 s.h.**Independent Study**

Selected topics. Offered infrequently.

MATH 699: 3-6 s.h.**Thesis:**

Thesis

Middle Level Education (MDLV)

MDLV 001: 12 s.h.**Middle Level Professional Bloc****MDLV 323: 3 s.h.****Teaching Reading in the Content Areas (W)**

An elective course designed to help students develop an understanding of the reading process in the major subject areas. Specific literacy strategies, study skills and reference techniques used in various subjects are investigated. Offered in fall. Prereq: ENGL 110 and Admission to Advanced Professional Studies (APS)

MDLV 335: 3 s.h.**Literature for Children & Young Adolescents**

Prepares middle level teacher candidates to recognize high-quality literature for youth from age 10 to 14. Grounded in adolescent psychology, it guides teacher candidates in the identification of literature, across genres and content areas, that is relevant to the lives of adolescents. The course engages teacher candidates in collaborative approaches to literature study, modeling best practices for the instruction of adolescents. Response to literature receives emphasis. Offered annually. Prereq: PSYC 227.

MDLV 335H: 3 s.h.**Hnrs: Lit for Childrn and Yng****MDLV 425: 3 s.h.****Teaching of Literacy, Gr 4-8: Processes, Skills & Strategies**

Develops pedagogy in the teaching of reading and the related language arts in grades 4-8. Keeping with current theory that the communication processes—reading, writing, listening and speaking—cannot arbitrarily be divided, this course will present pedagogy in an interrelated and integrated format. Understandings, teaching strategies and techniques will be consistent with the state testing system and the state standards for literacy instruction. Throughout this course, students will be expected to exhibit professional behaviors. Offered fall, spring. Prereq: admission to Advanced Professional Studies.

MDLV 446: 3 s.h.**Teaching of Social Studies**

In this course, teacher candidates will apply the standards and thematic strands of social studies as defined by the National Council for the Social Studies for middle level learners (Grades 4-8). Emphasis is on the learner building civil competence and acquiring knowledge, skills, and attitudes in civics and government, economics, history, and geography.

MDLV 456: 3 s.h.**Teaching Middle Level Mathematics**

Pedagogy for teaching middle level mathematics is aligned with national and state standards, current research, forms of assessment and curricular frameworks. Technology and hands-on instructional strategies are utilized. Prereq: MATH 205, MATH 230 and admission to Advanced Professional Studies. Coreq: MDLV 425, 466, SPED 331.

MDLV 466: 3 s.h.**Teaching of Science: An Inquiry Approach (W)**

Focuses on the teaching of science through inquiry in the middle grades. Inquiry based strategies stress evidence based argumentation, experimentation, and the building of student understanding of the nature of science through active involvement. Prereq: ENGL 110, admission to Advanced Professional Studies. Coreq: MDLV 425, 456, SPED 331.

MDLV 486: 3 s.h.**Teaching English Language Learners in the Middle Level (P)**

Prepares teacher candidates to understand cross-cultural and linguistic foundations of acquiring a new language. Teacher candidates will apply research-based strategies for providing English language learners (ELLs) with optimal learning environments that provide meaningful access to standards-based instruction in grades 4-8. This course places a special emphasis on instructional planning that facilitates student success with academic language and academic texts in upper-elementary settings. Candidates will demonstrate the ability to use assessment data to differentiate and modify instruction. Candidates will also demonstrate an understanding of schools' legal responsibilities toward ELLs and their families. Offered in fall. Prereq: COMM 100, ENGL 110 and admission to Advanced Professional Studies.

MDLV 486H: 3 s.h.**Hon: Teaching Mid-Level Eng La (P)****MDLV 499: 1-3 s.h.****Dept Hnrs:****MDLV 540: 3 s.h.****Middle Lvl Tchng and Learning**

Military Science (MILS)

MILS 101: 1 s.h.**Intro to Military Science 1**

An introduction to the fundamental components of service as an officer in the United States Army. Initial lessons form the building blocks of progressive lessons in values, fitness, leadership and officership. By means of both written and oral presentations regarding the history of military art, battle history, technical studies and the relationship of the armed forces with society, students will be encouraged to develop a habit of critical reflection. In addition to developing a foundation of military officership and leadership, students will receive practical instruction in the application of military art and basic soldier skills. Meets one hour per week plus a weekly 90-minute leadership lab. MILS 101 in fall and MILS 102 in spring.

MILS 102: 1 s.h.**Intro to Military Science 2**

An introduction to the fundamental components of service as an officer in the United States Army. Initial lessons form the building blocks of progressive lessons in values, fitness, leadership and officership. By means of both written and oral presentations regarding the history of military art, battle history, technical studies and the relationship of the armed forces with society, students will be encouraged to develop a habit of critical reflection. In addition to developing a foundation of military officership and leadership, students will receive practical instruction in the application of military art and basic soldier skills. Meets one hour per week plus a weekly 90-minute leadership lab. MILS 101 in fall and MILS 102 in spring.

MILS 179: 3 s.h.**Experimental**

Experimental

MILS 210: 2 s.h.**Self and Team Development**

A continuation of the fundamentals introduced the previous year by focusing on leadership theory and decision making. "Life skills" lessons during this year include problem solving, critical thinking, leadership theory, followership, group interaction, goal setting and feedback mechanisms. The use of practical exercise is significantly increased over previous semesters, as cadets are increasingly required to apply communication and leadership concepts. Meets two hours per week plus a weekly 90-minute leadership lab. MILS 210 in fall and MILS 211 in spring.

MILS 211: 2 s.h.**Military Leadership**

A continuation of the fundamentals introduced the previous year by focusing on leadership theory and decision making. "Life skills" lessons during this year include problem solving, critical thinking, leadership theory, followership, group interaction, goal setting and feedback mechanisms. The use of practical exercise is significantly increased over previous semesters, as cadets are increasingly required to apply communication and leadership concepts. Meets two hours per week plus a weekly 90-minute leadership lab. MILS 210 in fall and MILS 211 in spring.

MILS 279: 3 s.h.**Experimental**

Experimental

MILS 301: 3 s.h.**Management and Leadership**

Advanced instruction in topics introduced during the basic course. Emphasis on leadership. Situations require direct interaction with other cadets and test the student's ability to achieve set goals and to get others to do the same. Students master basic tactical skills of the small unit leader. Principles and techniques of effective leadership, methods of developing and improving managerial abilities and leadership qualities, and a basic understanding of interpersonal interactions. Use is made of recent developments in the administrative and behavioral sciences to analyze the individual, group and situational aspects of leadership and the management of resources. Participation in operations and basic tactics to demonstrate leadership problem solving and to develop leadership skills. Meets two hours per week plus a weekly 90-minute leadership lab. Prereq: Open only to advanced-course cadets. MILS 301 in fall and MILS 302 in spring.

MILS 302: 3 s.h.**Military Tactics**

Advanced instruction in topics introduced during the basic course. Emphasis on leadership. Situations require direct interaction with other cadets and test the student's ability to achieve set goals and to get others to do the same. Students master basic tactical skills of the small unit leader. Principles and techniques of effective leadership, methods of developing and improving managerial abilities and leadership qualities, and a basic understanding of interpersonal interactions. Use is made of recent developments in the administrative and behavioral sciences to analyze the individual, group and situational aspects of leadership and the management of resources. Participation in operations and basic tactics to demonstrate leadership problem solving and to develop leadership skills. Meets two hours per week plus a weekly 90-minute leadership lab. Prereq: Open only to advanced-course cadets. MILS 301 in fall and MILS 302 in spring.

MILS 379: 3 s.h.**Experimental**

Experimental

MILS 401: 3 s.h.**Contemporary Military Issues 1**

Emphasis is placed on developing planning and decision-making capabilities in the areas of military operations, logistics and administration. Concepts of organization theory and the principles of management and management and leadership relationships are investigated as they apply to the general theory and practice of the management functions of planning, organizing, staffing, direction, coordination, control, innovation and representation. Meets two hours per week plus a weekly 90-minute leadership lab. Prereq: Open only to advanced course cadets. MILS 401 in fall and MILS 402 in spring.

MILS 402: 3 s.h.**Contemporary Military Issues 2**

Emphasis is placed on developing planning and decision-making capabilities in the areas of military operations, logistics and administration. Concepts of organization theory and the principles of management and management and leadership relationships are investigated as they apply to the general theory and practice of the management functions of planning, organizing, staffing, direction, coordination, control, innovation and representation. Meets two hours per week plus a weekly 90-minute leadership lab. Prereq: Open only to advanced course cadets. MILS 401 in fall and MILS 402 in spring.

MILS 479: 3 s.h.**Experimental**

Experimental

Music (MUSI)

MUSI 001: 2 s.h.**MUSI Lesson Placeholder****MUSI 100: 3 s.h.****Music and Culture (G1)**

A general study of art music, with emphasis on listening to the compositions of Western composers. The development of music, its relationship to the other arts and its cultural influences will be examined. Designed for students with a limited musical background. Offered in fall, spring.

MUSI 103: 3 s.h.**Language of Music (D, G1)**

A course designed to develop a keen sensitivity to the language of musical sounds through creating, performing, conducting music and listening with sensitive awareness. The use of a broad range of musical materials, active exploration and personal discovery will lead the student to grasp the nature of the interactions and relationships that bring meaning to music. Language of music is structured to provide the student with a means to developing greater awareness and accuracy in musical reading and hearing. Designed for students with little or no academic musical background. Offered in fall, spring.

MUSI 103H: 3 s.h.**Hnrs:Language of Music (G1)**

Hnrs:Language of Music

MUSI 104: 3 s.h.**Language of Music 2 (G1)**

Provides in-depth coverage of the fundamentals of music. Music materials include Western and non-Western music. This is a performance-based class structured to provide the student with a means to develop greater awareness and accuracy in musical reading, writing and hearing. MUSI 104 fulfills MUSI 103 requirements. Offered in fall.

MUSI 108: 0.5 s.h.**Pri Ins 1:**

(By selection of the staff.) Private lessons in piano, organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 109: 0.5 s.h.**Pri Ins 2:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 112: 3 s.h.**Kodaly Solfege, Harmony and Analysis 1**

Provides an introduction to the structures and aesthetics of common-practice harmony for music majors and minors. Review of elements of pitch and rhythm and progresses to the introduction of triadic harmony, as well as figured bass realization. This course will investigate the harmonization of melodies and harmonic progressions through a wide range of activities. Musical materials to be studied will include selected multicultural folk music and art music examples. The study of music will be done through singing, ear training, improvisation, composition, analyses and keyboard performances. Offered in spring.

MUSI 124: .5 s.h.**Commercial Music Lab Band**

The goal of the commercial music lab band is to enable students to improve their ability to rehearse, arrange, perform and record commercial popular music repertoire in a group setting. Song selection, arrangement duties, individual rehearsal schedules and recording goals will be arranged at the beginning of each semester. At least one performance will be required each semester.

MUSI 126: .5 s.h.**Marauder Men's Glee Club**

A traditional collegiate men's choral ensemble. Focuses on choral repertoire, ensemble vocal technique, performance practice, and artistry through singing in a men's chorus setting.

MUSI 128: .5 s.h.**Marching Band Camp**

The study of music literature, ensemble technique and performance practice through musical performance in marching band. Offered in fall.

MUSI 129: .5 s.h.**Marching Band**

The study of music literature, ensemble technique and performance practice through musical performance in marching band. Offered in fall.

MUSI 131: 2 s.h.**Class Piano 1**

Practical keyboard facility through technique, sight reading, improvisation, harmonization and composition. Multicultural folk music, art songs and original piano compositions are included. Solo, duet and ensemble literature are studied and performed. This course is designed to be taken concurrently with MUSI 112. Music majors and minors only. Offered in spring.

MUSI 134: 1,2 s.h.**Maj Perf 1:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 135: 1,2 s.h.**Maj Perf 2:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 140: 3 s.h.**Singing Voice in Musical Theatre (G1)**

Trains students in good vocal technique in order to handle the many vocal challenges of musical theatre. Ranging from singing in different musical styles, singing while performing demanding dance routines, dealing with amplification, the switch from spoken to sung characterization, the health care of the voice, development of stamina to perform eight shows a week for a year or more and basic theory in order to read and learn music. Offered in the summer.

MUSI 141: 1 s.h.**Vocal Techniques**

A basic study of the technique of singing to adequately train the voice for practical and aesthetic reasons. Development of range quality, projection, control and the fundamentals of correct breathing is pursued through the use of suitable solo and choral literature. 2 hrs. lab. Enrollment limited to music education majors or permission of instructor. Offered in fall.

MUSI 151: 1 s.h.**Strings Techniques**

Strings I, Violin, Viola. Open to music majors only or permission of instructor.

MUSI 152: 1 s.h.**Woodwind Techniques**

Woodwinds I. Open to music majors only or permission of instructor.

MUSI 153: 1 s.h.**Percussion Techniques**

Percussion I. Open to music majors only or permission of instructor.

MUSI 154: 1,2 s.h.**Major Performance 1:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 155: 1,2 s.h.**Major Performance 2:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 156: 1 s.h.**Brass Techniques**

Brass I. Open to music majors only or permission of instructor.

MUSI 190: 3 s.h.**Music Industry 1**

Music Industry 1 is the introductory music business course for all music industry majors. Students learn basic terminology used in the field and are introduced to fundamentals of the music industry, copyright, royalties, contracts and networking as well as guest lecturers.

MUSI 193: 3 s.h.**Computer Applications in Music Production 1**

This introductory course is designed to develop an understanding of MIDI, sequencing, and digital audio through the integration of in-class demonstrations, lectures, and hands-on projects and activities. This course covers topics such as creating, recording, and editing MIDI sequences and digital audio data. The course will also address topics such as programming, arranging, composing, and mixing in the MIDI environment.

MUSI 202: 3 s.h.**American Broadway Musicals (G1)**

Examines the history, philosophy, music-theatre, and significance of the American Broadway musical. Will give students several opportunities to observe, discuss and report on American Broadway musical productions.

MUSI 203: 3 s.h.**Understanding Language of Music (D, G1)**

The course begins with the elements of rhythm and pitch and progresses to the introduction of scales, intervals, and tonality; notation of rhythm and meter, rudiments of harmony; and the concept of musical structure and form. Sight singing and ear training are pursued concurrently with keyboard and written theory. (This is a more in-depth course than Music 103 and the focus will include more complex repertoire and harmonic understanding). Musical materials will include selected multicultural folk music and art music examples. The use of a broad range of individualized musical materials, active exploration, and personal discovery will lead the student to grasp the nature of the interactions and relationships that bring meaning to music. Students will memorize and perform and body of folk songs representing the Anglo-American, African-American, Israeli, Hungarian, Romanian, French, Czech, Scottish, Hispanic, African, and Russian cultures or traditions. Linguistically, these songs characterize and embody the basic rhythmic structure, syntax, and melodic features of the culture, country, and/or tradition from which they emulate. Another significant outcome is to develop a community of learners with a deeper understanding of and sensitivity to cultural diversity demonstrated through research, readings (Smithsonian Folkways Collection) class discussions and written presentations. Students gain knowledge of the fundamentals of music through the performance of the songs deriving rhythmic and melodic features associated with each country's culture and/or tradition. Classes are structured to integrate academic study, written work, performance, and songs to develop a deeper and richer understanding of our shared history and cultural diversity. In this class, performance is a necessary condition for understanding; collaborative learning is fostered through group singing and performance. The philosophic approach that I use emphasizes the importance of the voice as the primary instrument. The value of singing for all ages and the use of traditional songs serves to broaden the cultural-studies approach to music. Three features are critical to this approach: 1) Students develop music skills by immersion, imitation, and sequential music reading; 2) they weave historical, cultural, and performance constructs together into a whole in written assignments; and 3) the course will facilitate opportunities for creative expression, analysis, and reflection.

MUSI 207: 3 s.h.**Love Songs Through the Ages (D, G1)**

Exploration of sex positive themes in vocal music. This course addresses diversity through a discussion of sex positivity and how this idea relates to feminism and topics within the Lesbian, Gay, Bisexual, Transgender, and Questioning (LGBTQ) community; and with other related topics such as marriage, monogamy, courtship rituals, and the like. While this is a music course and thus provides specific information about how music achieves its expressive ends, it also provides a broad perspective on relevant human issues and how music not only reflects but also helps to transmit and to shape human values. The course will examine the historical and environmental factors that underlie differences in sexual mores; examine the potential global, regional, and/or local factors that underlie these differences; engage students in articulating their personal worldview through oral and written communication; foster information literacy as it relates to diversity; and provide an academic structure for students to engage with peoples of diverse sexual practices and beliefs. The culture of embracing (or at least accepting) alternative sexual mores is a worldview that reflects beliefs, customs, values, politics, and experiences as shaped by age, economics, education, gender, geography, language, nationality, occupation, physical ability, race and ethnicity, religious affiliation, and/or sexual orientation among other factors.

MUSI 208: 0.5 s.h.**Pri Ins 3:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 209: 0.5 s.h.**Pri Ins 4:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 212: 3 s.h.**Kodaly Solfege, Harmony and Analysis 2**

Provides an in-depth coverage of the structures and aesthetics of medieval and renaissance music. Reviews basic triadic progressions in keyboard style, introduces principles of voice leading, nonchord tones, using diatonic common chords. Investigates the harmonization of melodies and harmonic progressions through a wide range of activities. Musical materials will include selected multicultural folk music and art music examples. The study of medieval and renaissance music will be done through singing, ear training, improvisation, composition, analysis and keyboard. Offered in fall. Prereq: C or higher in MUSI 112.

MUSI 220: .5 s.h.**Concert Band**

Music literature, ensemble technique and performance practice through musical performance in concert band. Offered in fall, spring.

MUSI 224: .5 s.h.**Jazz Lab Band**

Music literature, ensemble technique and performance practice through musical performance in jazz lab band. Offered in fall, spring.

MUSI 226: .5 s.h.**University Choir**

Music literature, ensemble technique and performance practice through musical performance in choir. Offered in fall, spring.

MUSI 227: .5 s.h.**Women's Choir**

Music literature, ensemble technique and performance practice through musical performance in women's choir. Offered in fall, spring.

MUSI 231: 2 s.h.**Class Piano 2**

Intermediate course in practical keyboard facility accomplished through technique, sight reading, improvisation, harmonization, composition and analysis. Primary and secondary harmonies are explored in selected multicultural folk songs, art songs and original piano compositions. MUSI 231 is designed to be taken concurrently with MUSI 212. Offered in fall. Prereq: C or higher in MUSI 131. Note: Music students majoring in piano take MUSI 377 instead of this course.

MUSI 234: 1,2 s.h.**Maj Perf 3:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 235: 1,2 s.h.**Maj Perf 4:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 254: 1,2 s.h.**Major Performance 3:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 255: 1,2 s.h.**Major Performance 4:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 263: 3 s.h.**Popular Music (D, G1)**

Musical derivatives and development of pop, jazz and rock styles. Lecture, live and recorded musical demonstration, discussion and analysis. Offered in fall, spring.

MUSI 265: 3 s.h.**Symphonic Music (G1)**

Development of symphonic music from the mid-18th century through the present. Relationships between the symphony and other musical genres. Emphasis on listening and analytical observation. Offered in fall, spring. Prereq: MUSI 100 or 162.

MUSI 267: 3 s.h.**Survey American Music (G1)**

American music from the colonization period to the present. Composers, their works, musical organizations and folk music in relation to historical developments which have shaped America's cultural heritage. Analysis of recorded musical examples is an integral part of this course. Offered in fall, spring. Prereq: MUSI 100 or permission of instructor.

MUSI 280: 3 s.h.**Technology in the Music Classroom**

Students explore the uses of technology and its application as instructional resources and content delivery devices in the modern K-12 music classroom. Topics include applications software, cloud-based software, music hardware and software evaluation, music notation software, sequencing software, MIDI interface devices and technology, recording techniques, and multimedia presentation systems. Students are provided hands-on experiences with hardware and software to develop the skills and competencies required of the professional music educator.

MUSI 290: 3 s.h.**Music Industry 2**

Music Industry 2 provides a comprehensive overview of the mainstream music industry and the for-profit world in of the music business. Students learn advanced copyright issues, the economics of the music industry, digital distribution, music publishing, entrepreneurship, and current business trends in the music industry. Offered every spring. Prereq: MUSI 190.

MUSI 293: 3 s.h.**Computer Applications in Music Production 2**

This course covers recording, editing, mixing and producing music using professional digital audio software and hardware such as ProTools. Students will be utilizing tracks from real recording sessions to gain skills in those areas focusing on vocal, bass, guitar and drum edits and mixing parameters. Students will be required to complete numerous technical and creative projects, applying their skills learned in the digital audio environment.

MUSI 294: 3 s.h.**Live Audio 1**

This course will explore the technology and techniques necessary to produce concerts in a variety of venues including those on and off campus. Students will take part in all facets of concert production as it relates to music including equipment options, signal flow, signal processing, mixing live shows, and live recording techniques.

MUSI 294H: 3 s.h.**Hon: Live Audio Production****MUSI 295: 3 s.h.****Studio Recording I**

This is an intermediate level course in modern studio recording techniques. Subjects addressed include signal routing, microphone selection & placement, signal processing, session setup, mixing consoles, and live recording issues. Students will learn how to record and mix electric and acoustic guitars, bass, amps and vocals. Students will be required to complete numerous technical and creative projects, applying their skills learned in the modern recording studio.

MUSI 300: 1-15 s.h.**Co-Op Ed Experience in Music**

Co-Op Ed Experience in Music

MUSI 300H: 3-12 s.h.**Hon: Co-Op Ed Exp in Music****MUSI 301: 3 s.h.****Music in Early Childhood (D, G1, W)**

Music in Early Childhood (Pre Kindergarten and Kindergarten) examines music through the lens of the culture(s) of young children, which (though they intersect with adult cultures) are unique, different from adult experiences, and particular to them. The course highlights the musical content of children's songs as well as the music they hear, and the kinds of musical engagements that are particular to young children. The uses, functions, and meanings of music for young children are emphasized. Musical materials to be studied will include selected multicultural folk music, as well as art and commercial music examples. The culture of childhood and the music in the culture of young children is one of the primary focuses of this course.

MUSI 301H: 3 s.h.**Hon: Music in Early Childhood (D, G1, W)****MUSI 304: 3 s.h.****Artist Management**

Artist Management is a focused examination, observation and participation class drawing on all of the facets of creating and operating an artist business model. The class will analyze the many facets of the modern music business and how it can be incorporated into practice. Students will be witness to the day to day operations of artists who record, tour, negotiate, survive and thrive. Students will participate in the discussions and decisions of the day to day operations of artists who are making recordings, marketing them either independently or in conjunction with a record label, touring, licensing music to film/TV, and all the functions of a recording and performance artist's career. Music Industry is a pre-req for this course as students need to have a basic understanding of the business to get the most of this advanced course.

MUSI 308: 0.5 s.h.**Pri Ins 5:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 309: 0.5 s.h.**Pri Ins 6:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 312: 3 s.h.**Kodaly Solfege, Harmony and Analysis 3**

This course provides in-depth coverage of the structures of seventh chords, secondary dominants and modulations and aesthetics of common practice harmony, with particular emphasis on the Classical and Baroque periods. Reviews diatonic progressions. This course investigates the harmonization of melodies and selected harmonic progressions through a wide range of activities. Musical materials will include selected multicultural folk music and art music examples. The study of Baroque and Classical examples of music will be done through ear training, improvisation, composition, analysis and keyboard performance. Offered in spring. Prereq: C or higher in MUSI 212.

MUSI 313: 3 s.h.**Sem in Jazz Thry & Improv**

Basic to intermediate/advanced level jazz theory concepts and improvisation with practical application. Information provided in this course is supplementary for students who wish to teach instrumental music and those pursuing graduate studies or professional careers in instrumental music.

MUSI 315: 1 s.h.**Music Composition**

The art of music composition through examination of the creative process, rhythmic manipulation, melodic development, counterpoint and harmonic motivation. Creative composition is an integral part of the course. May be repeated for credit. Offered periodically. Prereq: MUSI 212 or permission of instructor.

MUSI 317: 3 s.h.**The Art of Teaching Elementary Music Kodaly**

This course is designed to prepare students for teaching general music through the integration of multicultural content and practices related to the learner in an elementary school environment. Emphasis is on leading the young learner to understand musical concepts through a variety of behaviors (singing, playing instruments, moving, reading and writing, creating and listening). Also included are issues related to musical literacy development for young students. The course includes a field experience component (observation and teaching) that is intended to allow participants to apply theoretical principles in a practical setting. Offered in spring. Prereq: MUSI 212, C or higher in MUSI 171 or permission of instructor.

MUSI 323: .5 s.h.**Chamber Orchestra**

Music literature, ensemble technique and performance practice through musical performance in chamber ensemble. Offered in fall, spring.

MUSI 324: .5 s.h.**Commercial Music Ensemble**

The goal of the commercial music ensemble is to enable students to improve their ability to rehearse, arrange, perform and record commercial popular music repertoire. Song selection, arrangement duties, individual rehearsal schedules and recording goals will be arranged at the beginning of each semester. At least one performance will be required each semester. The Commercial Music Ensemble class roster will be determined by individual audition.

MUSI 330: 3 s.h.**Live Audio 2**

Live Audio 2 will explore advanced concepts in the technology utilized for live sound production. Topics will include electronics, block diagrams, spec sheets, loud speaker design, mixer technologies, amplifiers, situational acoustical design, and more. Students will also take part in all facets of concert production as it relates to live audio.

MUSI 331: 2 s.h.**Class Piano 3**

This course provides in-depth experience in sight-reading technique, keyboard analysis, harmonization, improvisation, transposition, composition and score reading. 1 hr. lec., 2 hrs. lab. MUSI 331 is designed to be taken concurrently with MUSI 312. Offered in spring. Prereq: C or higher in MUSI 231.

MUSI 334: 1,2 s.h.**Maj Perf 5:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 335: 1,2 s.h.**Maj Perf 6:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 336: 1,2 s.h.**Maj Perf 5:**

Includes private study and participation in ensembles. Music majors only. Offered in fall, spring.

MUSI 337: 1,2 s.h.**Maj Perf 6:**

Includes private study and participation in ensembles. Music majors only. Offered in fall, spring.

MUSI 347: 3 s.h.**The Art of Teaching Choral Techniques**

This course provides study and application of materials and techniques for teaching vocal/choral music on the elementary, middle and high school levels. Through the discussion and practical application of strategies and techniques pertaining to vocal instruction, ensemble leadership, and the nature of working with singers of varying ages, genders and abilities, students taking this course will be able to successfully instruct and manage any kind of school choral program.

MUSI 347H: 3 s.h.**Hon: Art of Choral Techniques****MUSI 350: 3 s.h.****The Art of Teaching Modern Band**

Students explore in-depth applications of Modern Band pedagogy and curriculum in the music classroom. Key topics include Modern band instrument practical education, teaching application, composition, improvisation, approximation, scaffolding, and safe space. This series of experiences will be demonstrated through interactive lecture, performance, and group interaction on guitar, bass, drums, keyboards, technology, and vocals. Materials from this course will cover the Little Kids Rock teacher manual and songbooks. In addition, the class will cover basics of different rock instruments, with guitars, keyboards, a bass, and a drum set being provided for class study.

MUSI 354: 1,2 s.h.**Major Performance 5:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 355: 1,2 s.h.**Major Performance 6:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 362: 3 s.h.**Music History and Literature 1 (W)**

Study of Western music in its cultural, historical and philosophical contexts from 500 B.C. to 1750 A.D., including its relationship to other art forms. Introduction to research in music history. Writing projects about music. Offered in fall. Prereq: ENGL 110, MUSI 100 or 162 and 312.

MUSI 362H: 3 s.h.**H:Music History/Literature 1 (W)**

H:Music History/Literature 1

MUSI 363: 3 s.h.**Music History/Literature 2 (P)**

The history, literature and aesthetics of Western art music from 1750 through the present. Knowledge of stylistic trends and representative literature will be emphasized. A research project is associated with the course. Offered in spring. Prereq: COMM 100, ENGL 110 and junior status. Music majors should consult with the department for course requirements.

MUSI 363H: 3 s.h.**H:Music History/Literature 2 (P)**

H:Music History/Literature 2

MUSI 368: 3 s.h.**International Music and Arts (D, G1, W)**

Introduction to terminology and cultural areas of the world. General introduction to the study of world music, the ethnomusicological approach and classification and symbolism of musical instruments. The process of musical innovation and acculturation in the world, and the impact of technology and the communications media on contemporary musical styles of non-European cultures. Topics include the music of South and West Africa, Ethiopia and folk music of the Arabic. Near East, the classical music of Iran and Asia, and the musical cultures of North and South India. Offered in spring. Prereq: COMM 100, ENGL 110 and junior status. Offered periodically.

MUSI 369: 3 s.h.**Intro to West African Music and Dance (D, P)**

Survey course designed to provide an in-depth analysis of West African culture and history focusing on the musical traditions found in this region of the world. General introduction to the study of West African music and dance, the ethnomusicological approach and classification and symbolism of musical instruments will be presented. Moreover, the process of musical innovation and acculturation in West Africa and the impact of technology and the communications media on traditional and contemporary musical styles will be examined. Offered fall, spring. Prereq: COMM 110, ENGL 110 and junior status.

MUSI 371: 3 s.h.**Foreign Language Diction****MUSI 371H: 3 s.h.****Hnrs: Foreign Lang Diction****MUSI 372: 3 s.h.****The Art of Teaching Secondary Methods**

Study of the organization, pedagogy and practice of the middle and secondary school general classroom, including focus on multicultural and popular music, folk song study and analysis. 2 hrs. lec., 2 hrs. lab. Prereq: admission to Advanced Professional Studies; C or higher in MUSI 271 or permission of instructor. This course is taught concurrently while teacher candidates are co-teaching in the field on a weekly basis as a requirement of the Professional Bloc courses in the College of Education

MUSI 373: 3 s.h.**The Art of Teaching Instrumental Music Techniques**

Provides the prospective instrumental music instructor with the information, materials and techniques for effective teaching and efficient administration of a successful instrumental music program via seminar and field experiences. 2 hrs. lec., 2 hrs. lab. Offered in spring. Prereq: admission to Advanced Professional Studies; MUSI 152, 153, 156, 171, 381 or permission of instructor.

MUSI 380: 3 s.h.**History of the Recording Industry (P)**

History of the Recording Industry analyzes the process from which the invention and implementation of various recording devices and formats have impacted the artists and its audience, the development of various styles of music, culture and the companies who built the foundation of the music industry.

MUSI 380H: 3 s.h.**Hon:History of the Rec Ind (P)****MUSI 381: 2 s.h.****Conducting 1**

Includes fundamentals of conducting, with emphasis on gesture and developing score study technique. Choral music is used throughout this course. 1 hr. lec., 2 hrs. lab. Offered in spring. Prereq: MUSI 212 or permission of instructor.

MUSI 388: 3 s.h.**Guided Study Abroad in Music (D, G1)**

Provides students the opportunity to learn about and study international culture and music through immersion in various countries. In addition, students will learn about the historical context to all music that is studied and relevancy to the culture. Although geared toward music majors and education majors, anyone who has an interest in learning about music and culture of foreign lands can participate. This special topics course will be offered periodically and will focus on music of certain cultures and populations depending on the countries visited during this course offering.

MUSI 390: 3 s.h.**Marketing and Promotion in the Music Industry**

Designed to give students a comprehensive understanding of marketing & promotion in the music industry. It will give insight into the marketing tactics employed by labels, concert promoters, distributors, independent agents and artists in the marketplace. This course will provide the basis for developing an integrated marketing campaign that can be implemented and adapted into the current music marketplace. Prereq: MUSI 190 and MUSI 290 (or MUSI 391)

MUSI 390H: 3 s.h.**Hon: Mktg & Promo in Music In****MUSI 391H: 3 s.h.****H:Music Industry****MUSI 395: 3 s.h.****Studio Recording II**

This is an advanced course in modern studio recording techniques. Students will learn how to record and mix synthesizers, piano, drum set, percussion, and other acoustic instruments. Students will be required to complete numerous technical and creative projects, including recording Millersville University music ensembles and taking part in every facet of the recording process from booking the studio through mastering the final product.

MUSI 396: 3 s.h.**Synthesis and Sampling**

This is an advanced course focusing on the theory and operation of hardware & virtual synthesizers and digital audio samplers. Students learn how to identify and manipulate the various parameters of synthesis and sampling devices for compositions and live performances. In addition, advanced topics in sequencing and digital editing will be addressed.

MUSI 397: 3 s.h.**International Music Business**

Will delve into the cultural, technological and financial components of the international music industry. We will explore and analyze global trends, revenue streams, ethics and legal policy, marketing strategies, music consumption and distribution patterns, analytics/metrics, popular musical genres and the future of the music business in the United States, Canada, Europe, United Kingdom, Asia, Australia and Latin America.

MUSI 397H: 3 s.h.**Hon: Intl Music Business****MUSI 398: 3 s.h.****Songwriting**

This course will explore the techniques necessary to write and produce commercial pop songs and scores for radio, film, commercials, and video games. Topics include melodic and harmonic development, song forms, lyric structures, orchestration, instrumentation, arranging, and demo production. Prereq: MUSI 295 and MUSI 212

MUSI 400: 1-15 s.h.**Co-Op Ed Experience in Music**

Co-Op Ed Experience in Music

MUSI 400H: 3-12 s.h.**Hon: Internship/Coop MUSI****MUSI 408: 0.5 s.h.****Pri Ins 7:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 409: 0.5 s.h.**Pri Ins 8:**

(By selection of the staff). Private lessons in piano organ, voice, instrument or composition through the advanced level. Offered in fall, spring.

MUSI 411: 2 s.h.**Orchestration**

Instruments of the orchestra and band, with particular emphasis upon their ranges, timbre, balance of tone and mixed tone color. Scoring of instruments in small and large ensembles. Offered in spring. Prereq: MUSI 212 or permission of instructor.

MUSI 412: 3 s.h.**Kodaly Solfege, Harmony and Analysis 4**

This course provides coverage of the structures and aesthetics of the Romantic Period and an introduction to 20th-century practices. Reviews chromatic harmony, introduces mode mixture, enharmonic spellings and modulations found in the late 19th century. Includes an introduction to melodic and metric reduction and modulus-twelve analysis. The study of Romantic and selected 20th-century examples of music will be done through singing, ear training, improvisation, composition, analysis and keyboard performance. Offered in fall. Prereq: C or higher in MUSI 312.

MUSI 412H: 3 s.h.**H: Kodaly, Solf, Hrmny, Anly 4**

MUSI 420: .5 s.h.**Wind Ensemble**

Music literature, ensemble technique and performance practice through musical performance in wind ensemble. Offered in fall, spring.

MUSI 423: .5 s.h.**Orchestra**

Music literature, ensemble technique and performance practice through musical performance in orchestra. Offered in fall, spring.

MUSI 424: .5 s.h.**Jazz Ensemble**

Music literature, ensemble technique and performance practice through musical performance in jazz ensemble. Offered in fall, spring.

MUSI 427: .5 s.h.**Chorale**

Music literature, ensemble technique and performance practice through musical performance in chorale. Offered in fall, spring.

MUSI 434: 1,2 s.h.**Maj Perf 7:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 435: 1,2 s.h.**Maj Perf 8:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 436: 1,2 s.h.**Maj Perf 7:**

Includes private study and participation in ensembles. Music majors only. Offered in fall, spring.

MUSI 437: 1,2 s.h.**Maj Perf 8:**

Includes private study and participation in ensembles. Music majors only. Offered in fall, spring.

MUSI 454: 1,2 s.h.**Major Performance 7:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 454H: 1,2 s.h.**H: MUED/BA-Maj Perf 7:****MUSI 455: 1,2 s.h.****Major Performance 8:**

Includes private study and participation in master classes. Music majors and minors only. Offered in fall, spring.

MUSI 481: 2 s.h.**Conducting 2**

An advanced course with emphasis on gesture and score study and analysis. Instrumental music is used throughout the class. 1 hr. lec., two 75-min. workshop/labs per week. Offered in fall. Prereq: C or higher in MUSI 381 or permission of instructor.

MUSI 489: 1-4 s.h.**Honors Course**

Honors Course

MUSI 490: 3 s.h.**Music Management**

The capstone course spans the course of two-terms and is designed to apply core concepts in the music industry through an entrepreneurial approach by developing a business plan and launching a project into the real-world. The initial term begins with the study of the processes and procedures involved in launching entrepreneurial enterprises that monetize music industry-related intellectual property, products and services. The development of opportunity recognition, commercialization of intellectual property, use of distribution models and other resources to pursue entrepreneurial opportunities will be explored during this course. Also, capitalization structures for new ventures within the music industry will be pursued through the development of a business plan. During the second term, students will select a project to launch into the real world. Students will work in teams and collaborate to execute the successful launch of a project and analyze the successes and failures experienced during the term.

MUSI 495: 3 s.h.**Audio & Music for Video**

This course addresses the world of audio and music for video, including film, television and gaming. The course will cover topics such as the science and psychology of sound, editing sound, creating sound effects, recording voice-overs, and synchronizing music to picture.

MUSI 497: 3 s.h.**Live Audio 3**

The objective of this course is for the students to be able to configure, assemble and optimize medium and large concert audio systems and peripheral equipment. This will include knowledge of signal flow, stage patching, protocols and cabling used for the interconnection of equipment and trouble shooting. They will apply basic principles of audio wave propagation for the purpose of optimization of a sound system. They will have basic knowledge to configure a digital mixing console for FOH and monitors as well as operating knowledge of each. They will understand the terms and definitions used in the live audio industry.

MUSI 498: 1-3 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section of the University Catalog. Offered fall, spring.

MUSI 499: 1-4 s.h.**Departmental Honors (AW)**

Departmental Honors

MUSI 500: 3-12 s.h.**Co-Op Ed Experience in Music**

Co-Op Ed Experience in Music

MUSI 512: 3 s.h.**Solfège, Harmony and Analysis III According to the Kodaly Concept**

Provides an in-depth coverage of the structures and aesthetics of common-practice harmony with particular emphasis on the Baroque and Classical period. This course also provides students with the skills to organize workshops and presentations as well as the development of a music theory curriculum focusing on Year 1 and Year 2 of teaching music theory incorporating some of the concepts and skills acquired in this course. Throughout the course, graduate students will meet with the professor to discuss how to create a portfolio that will include how to observe music lessons, how to create a music theory curriculum as well as how to organize a music theory workshop.

MUSI 513: 3 s.h.**Solfège, Harmony and Analysis IV According to the Kodaly Concept**

Provides coverage of the structures, and aesthetics of the Romantic period and an introduction to Twentieth-Century compositional practices. This course also provides students with the skills to organize workshops and presentations as well as the development of a music theory curriculum focusing on Year 3 and Year 4 of teaching music theory incorporating some of the concepts and skills acquired in this course.

MUSI 517: 3 s.h.**The Art of Teaching Elementary Music According to the Kodaly Concept**

Designed as the study of music and the learning process at the elementary level, this course helps prepare students for a career in music education with a focus on the young learner. The class has both a practical and philosophical basis. We will continue to examine the major paradigms and processes of music education and learn different methods and approaches to teaching music literacy as well as suitable music materials for the young learner. We will discuss current methodologies associated with teaching and the psychology of music; we will practice teaching techniques associated with Kodaly and Orff. Students will learn how to play and teach the soprano recorder and will complete an entrepreneurship plan to advance music education. Our focus will be on educating for the multiple dimensions of musicianship: Students as Performers, Students as Stewards of their Cultural Heritage, Students as Critical Thinkers, Students as Creative Human Beings and Students as Active Listeners. The course requires field observation and some teaching experiences in elementary schools.

MUSI 550: 3 s.h.**AoT Modern Band**

Students explore in-depth applications of Modern Band pedagogy and curriculum in the music classroom. Key topics include Modern band instrument practical education, teaching application, composition, improvisation, approximation, scaffolding, and safe space. This series of experiences will be demonstrated through interactive lecture, performance, and group interaction on guitar, bass, drums, keyboards, technology, and vocals. Materials from this course will cover the Little Kids Rock teacher manual and songbooks. In addition, the class will cover basics of different rock instruments, with guitars, keyboards, a bass, and a drum set being provided for class study.

MUSI 554: 3 s.h.**Major Performance Piano Instruction with Emphasis in Curriculum Supervision, Assessment, & Design 1**

As a performance study designed for the Post Baccalaureate or M.Ed. Music Leadership major to support piano, voice, and instrumental majors, this course covers a broader spectrum of performance including advanced knowledge of the Baroque performance practices, composers, techniques, and styles. Students also learn approaches for developing a vision for creating a school community that supports music performance and programming as a necessary condition of a learning community be it local, regional, national, or international. Students gain skills in designing curriculum for musical study at the beginning, intermediate, and advanced level. "Leadership" is the major component of this degree. Beyond teaching piano, graduate piano majors must develop proper curriculum, establish programs, engage in fund raising activities and become entrepreneurial in their thinking and actions. Along with the pedagogical elements included in this course, weekly assignments also include technical studies (scales, arpeggios, etc.) and the development of repertoire, as well as functional playing, which includes sightreading, improvisation, accompanying, and ensemble playing. Students are REQUIRED to attend and perform in master classes, student recitals, and juries. Some lessons, master classes and practice sessions will be recorded. Students are expected to review the recordings and evaluate their performances regarding specific criteria. This piano performance course is designed for the Post Baccalaureate or M.Ed. Music Leadership major to enhance the skills of high level performing, teaching, conducting research, writing critical papers, and giving oral presentations. Topics will vary each semester.

MUSI 555: 3 s.h.**Major Performance Piano Instruction with Emphasis in Curriculum Supervision, Assessment, & Design 2**

As a performance study designed for the Post Baccalaureate or M.Ed. Music Leadership major to support piano, voice, and instrumental majors, this course covers a broader spectrum of performance including advanced knowledge of the Classic style performance practices, composers, techniques, and styles. Students also learn approaches for developing a vision for creating a school community that supports music performance and programming as a necessary condition of a learning community be it local, regional, national, or international. Students gain skills in designing curriculum for musical study at the beginning, intermediate, and advanced level. "Leadership" is the major component of this degree. Beyond teaching piano, graduate piano majors must develop proper curriculum, establish programs, engage in fund raising activities and become entrepreneurial in their thinking and actions. Along with the pedagogical elements included in this course, weekly assignments also include technical studies (scales, arpeggios, etc.) and the development of repertoire, as well as functional playing, which includes sightreading, improvisation, accompanying, and ensemble playing. Students are REQUIRED to attend and perform in master classes, student recitals, and juries. Some lessons, master classes and practice sessions will be recorded. Students are expected to review the recordings and evaluate their performances regarding specific criteria. This piano performance course is designed for the Post Baccalaureate or M.Ed. Music Leadership major to enhance the skills of high level performing, teaching, conducting research, writing critical papers, and giving oral presentations. Topics will vary each semester.

MUSI 572: 3 s.h.**The Art of Teaching Middle Level According to the Kodaly Concept**

Designed as the study of music and the learning process at the middle level (Grades 4-8), this graduate course helps prepare students for a career in music education with a focus on middle level learners. Emphasis will be placed on basic teaching and performing skills related to classroom teaching using the Kodály Methodology, related instrumental techniques, designing professional development, observing teaching in a supervisory role, and designing curriculum which integrates the choral and instrumental classroom. The class has both a practical and philosophical basis. We will examine the major paradigms and processes of music education and learn the Kodály approach to teaching music literacy as well as discover suitable music materials for middle level learners. We will discuss current methodologies associated with teaching and the psychology of music; we will practice teaching techniques associated with Kodály for the middle level classroom and choir. Students will be enhancing their skills on guitar and in addition to identifying websites or apps which can enhance instruction at the middle school level. Our focus will be on educating for the multiple dimensions of musicianship: Students as Performers, Students as Stewards of their Cultural Heritage, Students as Critical Thinkers, Students as Creative Human Beings and Students as Active Listeners. The course requires field observation and teaching experiences in upper elementary and middle school.

MUSI 579: 3 s.h.**Experimental**

Experimental

MUSI 587: 3,6 s.h.**Topics in Music**

This course is designed to prepare students for teaching preK-kindergarten children. Emphasis is on leading the young learner to understand music concepts through a variety of behaviors, such as singing, moving, creating and listening. Offered periodically in summer.

MUSI 654: 3 s.h.**Major Performance Piano Instruction with Emphasis in Curriculum Supervision, Assessment, & Design 3**

As a performance study designed for the Post Baccalaureate or M.Ed. Music Leadership major to support piano, voice, and instrumental majors, these courses cover a broader spectrum of performance including advanced knowledge of the Romantic period performance practices, composers, techniques, and styles. Students also learn approaches for developing a vision for creating a school community that supports music performance and programming as a necessary condition of a learning community be it local, regional, national, or international. Students gain skills in designing curriculum for musical study at the beginning, intermediate, and advanced level. "Leadership" is the major component of this degree. Beyond teaching piano, graduate piano majors must develop proper curriculum, establish programs, engage in fund raising activities and become entrepreneurial in their thinking and actions. Along with the pedagogical elements included in this course, weekly assignments also include technical studies (scales, arpeggios, etc.) and the development of repertoire, as well as functional playing, which includes sightreading, improvisation, accompanying, and ensemble playing. Students are REQUIRED to attend and perform in master classes, student recitals, and juries. Some lessons, master classes and practice sessions will be recorded. Students are expected to review the recordings and evaluate their performances regarding specific criteria. This piano performance course is designed for the Post Baccalaureate or M.Ed. Music Leadership major to enhance the skills of high level performing, teaching, conducting research, writing critical papers, and giving oral presentations. Topics will vary each semester.

MUSI 655: 3 s.h.**Major Performance Piano Instruction with Emphasis in Curriculum Supervision, Assessment, & Design 4**

As a performance study designed for the Post Baccalaureate or M.Ed. Music Leadership major to support piano, voice, and instrumental majors, this course covers a broader spectrum of performance including advanced knowledge of the Contemporary performance practices, composers, techniques, and styles. Students also learn approaches for developing a vision for creating a school community that supports music performance and programming as a necessary condition of a learning community be it local, regional, national, or international. Students gain skills in designing curriculum for musical study at the beginning, intermediate, and advanced level. "Leadership" is the major component of this degree. Beyond teaching piano, graduate piano majors must develop proper curriculum, establish programs, engage in fund raising activities and become entrepreneurial in their thinking and actions. Along with the pedagogical elements included in this course, weekly assignments also include technical studies (scales, arpeggios, etc.) and the development of repertoire, as well as functional playing, which includes sightreading, improvisation, accompanying, and ensemble playing. Students are REQUIRED to attend and perform in master classes, student recitals, and juries. Some lessons, master classes and practice sessions will be recorded. Students are expected to review the recordings and evaluate their performances regarding specific criteria. This piano performance course is designed for the Post Baccalaureate or M.Ed. Music Leadership major to enhance the skills of high level performing, teaching, conducting research, writing critical papers, and giving oral presentations. Topics will vary each semester.

Nanofabricatn Manuf Technology (NFMT)

NFMT 311: 3 s.h.

Materials, Safety & Equipment Overview for Nanotechnology

Focuses on issues encountered in the practice of "top down" and "bottom up" nanofabrication and the safe operation and maintenance of nanofabrication processing equipment and materials-handling procedures. Includes clean-room protocol, safety and environmental and health issues in the nanofabrication facility at Penn State University. 2 hrs. lec., 2 hrs. lab. Coreq: NFMT 312. Completed at Penn State University in State College during "Capstone Semester."

NFMT 312: 3 s.h.

Basic Nanotechnology Processes

Hands-on introduction to the processing sequences involved in "top down," "bottom up" and hybrid nanofabrication. Details a step-by-step description of processes to fabricate devices and structures. Stresses the importance of environmental control (gas, liquid, vacuum) in processing. 2 hrs. lec., 2 hrs. lab. Prereq: Admission to the NFMT "Capstone Semester." Coreq: NFMT 311. Completed at Penn State University in State College during "Capstone Semester."

NFMT 313: 3 s.h.

Thin Film Utilization

In-depth, hands-on exposure to depositing and etching a wide variety of materials, including dielectrics, semiconductors organics, polymers, metallic materials and molecular films. Students work in small teams and develop oral and written reports. 2 hrs. lec., 2 hrs. lab. Prereq: NFMT 311 and 312. Completed at Penn State University in State College during "Capstone Semester."

NFMT 314: 3 s.h.

Lithography

Hands-on treatment of all aspects of advanced pattern transfer and pattern-transfer equipment. Includes pattern-generation processes, photolithography, particle beam lithographic techniques, probe pattern generation and three types of lithography (embossing, stamp, self-assembled). 2 hrs. lec., 2 hrs. lab. Prereq: NFMT 311. Completed at Penn State University in State College during "Capstone Semester."

NFMT 315: 3 s.h.

Materials Modification in Nanotechnology

Detailed coverage of material-processing steps for molecular functionalization, cross-linking, metal silicidation, material oxidation, materials nitradion, barrier materials, alloying, annealing and doping. Includes avoiding unintentional materials modification via the use of diffusion barriers, encapsulation, electromigration, corrosion, stress effects and adhesion. 2 hrs. lec., 2 hrs. lab. Prereq: NFMT 311. Completed at Penn State University in State College during "Capstone Semester."

NFMT 316: 3 s.h.

Characterization, Testing Nanotech Structures & Materials

Examines a variety of techniques and measurements essential for testing and for controlling final device performance and final packaging. Problems and solutions concerning the interfacing of the macro-world with micro- and nano-scale devices will be analyzed and examined. 2 hrs. lec., 2 hrs. lab. Prereq: NFMT 311. Completed at Penn State University in State College during "Capstone Semester."

Nursing (NURS)

NURS 179: 3 s.h.

Experimental

Experimental

NURS 279: 3 s.h.

Experimental

Experimental

NURS 300: 3-12 s.h.

Co-Op Ed Experience in Nursing

Co-op Experience in Nursing

NURS 310: 3 s.h.

Health Issues from a Population Health Perspective

The essentials of population health practices will be discussed along with how they are used by different groups to assess health outcomes and make recommendations to improve access to care and quality of care while reducing the cost of care.

NURS 312: 3 s.h.

Value-Based Care

The healthcare industry is shifting to value-based and risk-based reimbursement and it is a monumental change that is impacting every component of healthcare. Healthcare is focused on high-value, cost-effective, and evidence-based measures that incorporate innovation, resource stewardship, and systems thinking. Under new payment models, reimbursement is tied directly to clinical, organizational, and consumer outcomes. It is, therefore, critical that all involved in healthcare are aware and can apply the principles associated with value-based care to their respective roles.

NURS 315: 3 s.h.

Scientific Advances in Healthcare (P)

Major contemporary health trends and issues will be presented. Discussion will identify the integration of certain biological, psychosocial, educational and healthcare components as they impact on the individual/family unit. Open to all majors. Prereq: ENGL 110, COMM 100 and junior status. Does not satisfy nursing electives for B.S.N. majors.

NURS 315H: 3 s.h.

Hon: Scientific Adv Health Car (P)

NURS 316: 3 s.h.

Women, Health, and Health Care (P)

Examines the physical, psychosocial, economic, cultural, ethnic, racial and political factors that impact women's health. Case studies of current health dilemmas that affect women in today's society will be analyzed. Prereq: ENGL 110, COMM 100 and junior status. Does not satisfy nursing electives for B.S.N. majors.

NURS 316H: 3 s.h.

H: Women, Health, and Health C (P)

NURS 320: 3 s.h.

Basis of Professional Practice

Historical and theoretical aspects of nursing are discussed in addition to concepts and issues related to professional nursing practice. Emphasis on communication, standards, collaboration, and advocacy. 3 hrs. lec. Nursing majors only. Offered annually.

NURS 322: 4 s.h.**Health Assessment of Adult**

The holistic assessment process of the adult client utilizing physical assessment skills such as the techniques of inspection, palpation, percussion and auscultation are presented and practiced. Each system includes the normal finding and the pathophysiological mechanisms that alter hemodynamics. 3 hrs. lec., 2 hrs. lab. Nursing majors only.

NURS 330: 3 s.h.**Ethics and Person-Centered Care (D)**

Focuses on the interplay of ethical practice and diverse populations in healthcare. Emphasis on the use of ethical theories, principles, and frameworks to strengthen moral reasoning and improve the provision of socially responsible, person-centered healthcare to diverse populations. Models of ethical decision-making are explored and applied. Role of the ANA Code of Ethics within the profession is examined. Encourages a greater awareness of cultural differences and health disparities and the importance of social justice and mutual respect in care delivery.

NURS 340: 3 s.h.**Environmental Factors Affecting Health**

Discussion of environmental health and factors that influence the holistic person's health. Emphasis on the importance of environmental health assessment and the health effects of air, water and soil pollution; environmental safety hazards and nursing responsibilities for intervention in a personal, community and political realm. Effects of pollution and safety hazards discussed from a nursing perspective.

NURS 360: 4 s.h.**Assessment and Diversity in Nursing Practice (D)**

Integration of physical assessment has a positive effect on patient care delivery. An important component of health assessment of the diverse client is a contextual (cultural) review. Cultural assessment is crucial to providing cultural care, which enables providers to deliver services that are respectful of and responsive to the health beliefs, practices and cultural and linguistic needs of diverse patients. Cultural competency is critical to reducing health disparities and is responsive to the needs of diverse patients resulting in improved patient outcomes.

NURS 370: 3 s.h.**Telehealth Foundations**

An introduction to telehealth theory, clinical usage, historical perspectives, and future strategies that provide clinicians, healthcare team members, administrators, and community members a broad-based overview of the use of technology in healthcare.

NURS 379: 3 s.h.**Experimental**

Experimental

NURS 421: 5 s.h.**Population-based Nursing (W)**

The nurse's role in promotion of health of aggregates in the community is explored, with an emphasis on vulnerable populations. Public health concepts, using a population-based focus are directed toward health promotion and levels of prevention with evidence-based care to create healthier communities and populations.

NURS 428: 3 s.h.**Nursing Research & Evidence-Based Practice (W)**

Explores the research process used to generate evidence and the process of evidenced-based practice (EBP), which incorporates the available evidence to implement strategies that improve nursing practice. Students will follow the steps of the EBP process to synthesize the best available evidence related to a nursing problem within an area of professional practice. Prerequisite: MATH 130 or MATH 234, ENGL 110, and Senior Level.

NURS 435: 1-3 s.h.**Topics in Nursing**

In-depth investigation of topics of current interest in the nursing field. Topics to be announced when course is offered. Offered periodically.

NURS 438: 3 s.h.**Health Policy and Nursing Issues**

Discussion of the political, economic, legal, ethical and related societal issues which influence nursing practice and education. Professional nursing roles and responsibilities are emphasized. 3 hrs. lec. Nursing majors only.

NURS 460: 3 s.h.**Telehealth Policy, Advocacy, and Clinical Application**

This course will review the roles of policy, advocacy, and clinical application of telehealth. Using spirit of inquiry principles, the impact of virtual care, artificial intelligence, and remote patient monitoring on patient care, quality and safety and process improvement will be investigated. Prereq: NURS 370

NURS 461: 4 s.h.**Advanced Telehealth**

This advanced telehealth course will develop telehealth project management skills and clinical presence using technology as a methodology of providing healthcare in a variety of settings across the continuum. Prereq: NURS 370 and 460.

NURS 478: 4 s.h.**Transforming Health Care (W)**

This senior-level capstone course builds and expands upon work completed to date in the B.S.N. program and is designed to prepare students for leadership roles. Concepts of leadership and management will be described and ultimately applied to seminar topics and clinical experiences. Emphasis is also placed on the interdependence between the nursing profession and various levels of issues as they pertain to real-life world events. Seminar topics include fiscal management, case management and public-policy issues, among others. Clinical experiences will allow the student to practice with a nurse leader in the community. Prereq: ENGL 110, NURS 320, 428. 28 clinical hours total.

NURS 479: 3 s.h.**Experimental**

Experimental

NURS 489: 1-4 s.h.**Honors Course**

Honors Course

NURS 498: 1-3 s.h.**Independent Study**

An individualized experience based on the student's particular interests. Provides an opportunity to demonstrate creativity and initiative to further investigate an area of interest in practice, research or education in nursing. Offered periodically. Prereq: NURS 428.

NURS 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

NURS 501: 3 s.h.**Role Development and Theoretical Foundations of Advanced Practice**

Serves as the introductory course for the Master's of Science in Nursing degree. It is designed to provide a foundation to advance practice nursing. In this course, students will explore nursing concepts and theory. Emphasis is placed on bridging the theory-practice gap. Students will apply this theoretical basis in exploring advanced practice role development. Advanced practice core competencies will be introduced and analyzed.

NURS 502: 3 s.h.**Research and Evidence-Based Practice Methodology**

Advanced research in nursing builds on previous knowledge of research and statistics to develop an evidenced-based approach to practice. The learner will analyze methods and techniques of research and interpret their usefulness for application in practice. Theory and practice will be used in defining nursing problems and in development of a literature review. 3 hrs. theory. Prereq/Coreq: NURS 501

NURS 503: 3 s.h.**Issues and Roles in Advanced Nursing Practice**

In-depth study of the issues of advanced nursing practice, focusing on the historical, social and political forces which impact advanced nursing practice. Advanced practice roles in nursing are explored and analyzed. 3 hrs. theory. Offered in fall.

NURS 504: 3 s.h.**Technology, Informatics & Professional Nursing Practice**

Discussion of the ways in which information and technology influence practice and decision making in various aspects of nursing practice, such as clinical, education, leadership and research, is the major focus of the course. Advances in technology that support and enhance the delivery of care and interdisciplinary communication are addressed. The legal, ethical, cultural, economic and social factors affecting healthcare information technology are also explored.

NURS 506: 3 s.h.**Sustainable Health**

Discussion of advanced concepts regarding environmental health and evidence-based nursing in the context of sustainable development and global well-being. Using the 17 UN Sustainable Development Goals as a comprehensive framework for understanding health, the environment, and human interaction, as well as how to promote public, international, and planetary health including multinational, interdisciplinary systems supporting all of humanity. Explores and underscores the important role nurses fulfill in promoting local and global health within the framework of sustainability.

NURS 508: 4 s.h.**Advanced Clinical Knowledge**

Builds upon previous knowledge in physical assessment, pathophysiology, and pharmacology. Using a systems approach, examines principles of select well and disease states. Provides the opportunity to assess, analyze, and explore the findings, treatment, and evaluation of common health issues. Analyzes the relationships between assessment findings, physiologic changes, and pharmaceutical treatments.

NURS 511: 3 s.h.**Pathophysiology for Advanced Practice**

Advanced physiology and pathophysiology at the cellular, organic and systemic level. Interdependence of organ systems in health and disease is emphasized as a basis for clinical assessment and management. 3 hrs. theory. Offered in spring.

NURS 512: 3 s.h.**Health Assessment and Diagnostics Evaluation for Advanced Practice**

Clinical course. Provides framework for diagnosis and clinical decision making for the advanced practice nurse. Assessment skills and procedures for individuals across the life cycle will be developed. Information gathered in the assessment process will provide a basis for the evaluation of the health status of individuals. An analysis of an individual's response to wellness and illness will include examination of concepts of cultural influences, health-seeking behaviors, and stress and adaptation. 2 hrs. theory, 3 hrs. lab. Prereq: NURS 501, 502, 503 and 511. Offered in fall.

NURS 513: 3 s.h.**Pharmacology & Alternative Therapeutics in Nursing Practice**

Principles of pharmacology applied to the therapeutic management of the individual and the family across the life cycle. Emphasis on prescribing and monitoring pharmacology and alternative therapeutic regimens. Adverse drug reactions and multiple drug interactions are included. 3 hrs. theory. Prereq: NURS 501, 502, 503 and 511. Offered in fall.

NURS 515: 3 s.h.**Advanced Nursing Practice Clinical Practicum**

This course provides an opportunity to integrate theory and practice through an intensive practicum experience. The practicum provides the opportunity for the non-clinical track MSN student to develop advanced clinical experience within a selected population and/or setting. Prereq NURS 508

NURS 521: 7 s.h.**Clinical Management of the Young Family**

This course provides the family nurse practitioner student with the necessary knowledge and clinical experience to assist young families with health promotion and chronic and acute health problems. The biophysical, cognitive and psychosocial development of members of the young family is explored. A focus on women's health issues is incorporated in the course content. The role of the family nurse practitioner in caring for the young family is identified. 3 hrs. theory, plus clinical component. Prereq: NURS 501, 503, 511, 512, 513.

NURS 522: 7 s.h.**Clinical Management of the Mature Aging Family**

This course provides the family nurse practitioner with the necessary knowledge and clinical experience to assist mature and aging families with health promotion and chronic and acute health problems. The biophysical, cognitive and psychosocial development of members of mature and aging families is explored. A focus on women's health issues is incorporated in the course content. The role of the family nurse practitioner in caring for mature and aging families is identified. 3 hrs. theory, plus clinical component. Prereq: NURS 521.

NURS 523: 5 s.h.**Family Nurse Practitioner Internship**

This course provides an opportunity to integrate theory and practice through an intensive internship experience. Focus is on the domains and competencies of the nurse practitioner as direct provider of primary healthcare. Biweekly seminars will be conducted to discuss current topics. The student will be guided in the practicum by nurse practitioner and physician preceptors in a variety of settings. 1 hr. theory, plus clinical component. Prereq: NURS 521 and 522.

NURS 550: 3 s.h.**School Nursing and Diverse Learners**

Focus on the specialty practice area of school nursing, examining the role of the school nurse with emphasis on the special health needs of children in the school setting. Management and evaluation of the special health care needs of diverse learners are discussed with an understanding of the need for outcome criteria. Emphasis is placed on identifying accommodations and adaptations for diverse learners. An overview of common physiological and psychological diagnoses of the school age population are discussed as well as the legal responsibilities of the school nurse when caring for this diverse population.

NURS 560: 5 s.h.**School Nursing Clinical Practicum**

Focus on the specialty practice area of school nursing. Laws pertaining to school nursing practice and legal considerations for school nurses are explored. Individualized health plans that address the special health needs of children in the school setting are developed. Management and evaluation of the comprehensive school health program are discussed with an understanding for the need of outcome criteria. Clinical experiences provide the student an opportunity to apply concepts learned in the various school nursing program courses in school health settings at both elementary and secondary levels. Prereq: Undergraduate; faculty permission; Graduate: Baccalaureate degree

NURS 579: 1-4 s.h.**Experimental Course**

Experimental Course Number for Nursing

NURS 586: 1-3 s.h.**Topics in Nursing**

In-depth investigation and development of one or more topics of current interest in nursing that are not normally covered in regular courses. Topics/methods will vary according to the needs of students and faculty.

NURS 587: 1-3 s.h.**Topics in Nursing**

In-depth investigation and development of one or more topics of current interest in nursing that are not normally covered in regular courses. Topics/methods will vary according to the needs of students and faculty.

NURS 588: 1-3 s.h.**Topics in Nursing**

In-depth investigation and development of one or more topics of current interest in nursing that are not normally covered in regular courses. Topics/methods will vary according to the needs of students and faculty.

NURS 610: 3 s.h.**School Nursing: Grades PK-4 Practicum**

In this course, the focus is on the role of the school nurse in caring for students in grades PK-4. There is an emphasis on the nursing process as it is applied to the school age population while considering acute, chronic, and episodic illness and the overall healthcare needs of the PK-4 grade school population including those with special health needs, disabilities, diverse cultures, and English Language Learners. The physical, emotional, psychosocial, and developmental needs of the PK-4 grade population are explored. Interprofessional collaboration within the school nurse role in the elementary school setting is examined. This course provides 50 of the required 100 hours of practicum experience focusing on the PK-4 grade population under the guidance of a certified school nurse. Prereq: Current unencumbered RN License

NURS 611: 3 s.h.**School Nursing: Grades 5-12 Practicum**

In this course, the focus is on the role of the school nurse in caring for students in grades 5-12. There is an emphasis on the nursing process as it is applied to the school age population while considering acute, chronic, and episodic illness and the overall healthcare needs of the 5-12 grade school population including those with special health needs, disabilities, diverse cultures, and English Language Learners. The physical, emotional, psychosocial, and developmental needs of the 5-12 grade age population are explored. Interprofessional collaboration within the school nurse role in the middle and high school setting is examined. This course provides 50 of the required 100 hours of practicum experience focusing on the 5-12 grade population under the guidance of a certified school nurse. Prereq: Current unencumbered RN License

NURS 612: 3 s.h.**School Nursing: Health Promotion and Disease Prevention**

This course focuses on the school nurse's role in promotion of health in individuals and the school community with an emphasis on vulnerable populations. The integration of evidence-based practice and epidemiological approaches to promote consistent and equitable care for individuals and diverse populations in school communities is explored.

NURS 613: 3 s.h.**School Nursing: Considerations for the Needs of Diverse Learners and English Language Learners**

This course focuses on the legal mandates of school nursing and how these laws affect the certified school nurse. There is an emphasis on the special health needs of children in the school setting and the nurse's role in identifying health and health education related accommodations and adaptations for diverse learners in order to support student health and promote optimal learning.

NURS 630: 3 s.h.**Effective Teaching: Theories and Methods in Nurse Ed**

Educational theories and methods are explored in this course. The advantages and challenges of technology-based teaching and learning are presented. Past and future trends in education are discussed. Theory and research findings about the learning process, the nature of the learner and the goals of instruction are discussed.

NURS 631: 3 s.h.**Measurement and Evaluation in Nurse Education**

This course introduces the student to the concepts of measurement and evaluation. Techniques in designing instructional objectives and test items are developed. Grading methods and test analysis are explored. The purpose of program evaluation is emphasized.

NURS 632: 3 s.h.**Nursing Curriculum and Program Design**

This course focuses on curriculum foundations, principles and issues. Through investigation and discussion, students learn about curriculum threads and designing effective programs. The importance of organizational mission and priority in relation to program development is emphasized.

NURS 633: 3 s.h.**Nursing Education Practicum I**

This course provides an opportunity to integrate theory and practice through a practicum experience in nursing academic education. Focus is on the role of the nurse educator and the learning environment. Seminars will be conducted to discuss current topics related to nursing academic education. The students will be guided in the practicum by preceptors who are nurse educators in academia. (Prereq: N630; N631, N632)

NURS 634: 3 s.h.**Nursing Education Practicum II**

This course provides an opportunity to integrate theory and practice through a practicum experience in nursing professional development. Focus is on the role of the nurse educator and the learning environment. Seminars will be conducted to discuss current topics related to nursing professional development. The students will be guided in the practicum by preceptors who are nurse educators in a professional development role. (Prereq: N630; N631, N632)

NURS 641: 3 s.h.**Advanced Nursing Informatics**

Advanced discussion the role and impact of the nursing informatics specialist. Analysis of the impact on health and safety (QSEN) outcomes, as well as the impact of the human-technology interaction is included. Additional focus on the impact of technological and societal trends on patients and patient outcomes, as well as compliance and regulatory mandates.

NURS 642: 3 s.h.**Healthcare Informatics Systems Analysis and Design**

Focused on the impacts of knowledge discovery and meta-analysis of data trends to impact healthcare outcomes. Understanding workflow processes, informatics solutions and their interplay are core concepts address. Methods to synthesize knowledge, use decision support and outcomes management to support reimbursement and advanced nursing science are addressed.

NURS 643: 3 s.h.**Healthcare Project Management**

Examination of the role of design thinking and project management on operational architecture and information management. Consideration of the system life cycle to manage information exchange and accomplish key clinical operations.

NURS 644: 3 s.h.**Healthcare Data Science and Data Analytics**

Introduction the principles of data science and data analytics in context of healthcare. Focus on use of data, data visualization, and data analysis to impact and improve patient care outcomes and healthcare workflow processes. Examination spans generation of quality data using common languages through analysis, application, and evaluation.

NURS 645: 3 s.h.**Practicum in Nursing Informatics**

This course provides an opportunity to integrate theory and practice through an intensive practicum experience. The practicum provides the opportunity for the nursing informatics student to develop advanced clinical experience within a selected population and/or setting (112 hours of practicum required).

NURS 650: 3 s.h.**Nursing Leadership and Administration**

Focused on the integration of the conceptual and theoretical frameworks of leadership into the role of the nurse leader. The role of the nurse leader to support the full spectrum of healthcare is addressed and analyzed. Additional focus on the role of change theory, organizational development, and complex healthcare systems.

NURS 651: 3 s.h.**Leading Quality and Safety**

Focused on the role of the nurse leader in advancing the quality of patient care within complex healthcare systems. Investigates the impact of performance and quality improvement on patient safety. Using the guidelines developed by the Quality and Safety Education for Nurses (QSEN), methods to positively impact patient safety and care quality are discussed.

NURS 652: 3 s.h.**Healthcare Financing and Value-Based Care**

Focus on the healthcare industry's shift to value-based and risk-based reimbursement. Analysis of the impact of the change on every component of healthcare. Focused on high-value, cost-effective, and evidence-based measures that incorporate innovation, resource stewardship, and systems thinking. Examines new payment models, where reimbursement is tied directly to clinical, organizational, and consumer outcomes.

NURS 653: 3 s.h.**Leading Others & Organizations**

Focus on the essential competencies of the nurse leader in relation to communication, conflict management, employee development, and building relationships. Developing a business acumen through use of change management, decision-making strategies, and systems thinking. Additional emphasis on strategic planning, project management, and policy development.

NURS 654: 3 s.h.**Nursing Leadership Practicum**

Provides an opportunity to integrate theory and practice through an intensive practicum experience. The practicum provides the opportunity for the nursing leadership students to engage in an advanced leadership experience within a selected setting (112 practicum hours required)

NURS 686: 1-3 s.h.**Topics in Nursing**

In-depth investigation and development of one or more topics of current interest in nursing that are not normally covered in regular courses. Topics/methods will vary according to the needs of students and faculty.

NURS 687: 1-3 s.h.**Topics in Nursing**

In-depth investigation and development of one or more topics of current interest in nursing that are not normally covered in regular courses. Topics/methods will vary according to the needs of students and faculty.

NURS 688: 1-3 s.h.**Topics in Nursing**

In-depth investigation and development of one or more topics of current interest in nursing that are not normally covered in regular courses. Topics/methods will vary according to the needs of students and faculty.

NURS 691: 1-3 s.h.**Ind Stdy Adv Nursing Practice**

In-depth approach to an individually structured problem. Focus will vary according to the needs of students and faculty involved.

NURS 698: 3 s.h.**Capstone Project**

Capstone project is intended to be innovative, scholarly, and relevant to advanced nursing practice. It is completed under the supervision of an individual faculty member. Taken during last year of MSN curriculum courses.

NURS 700: 3 s.h.**Transformational Leadership**

Synthesize political action related to the structure of healthcare delivery. Analyzes factors that influence the production, financing, and distribution of healthcare services in the United States and globally. Utilize the social justice model as framework for in-depth analysis and critique of the social, political and economic factors affecting advanced/doctoral nursing practice. Topics include basic economic theory, market drivers, healthcare financing and reimbursement, cost/benefit analysis and healthcare entrepreneurship.

NURS 701: 3 s.h.**Hlth Policy & Healthcare Econ**

Emphasizes the roles of the advanced practice nurse as a clinical scholar, clinical expert and as a leader in evidence-based practice and transformation of health care. Evolution and need for doctoral education in nursing is considered. Theories of leadership change and transformation, and innovation diffusion are introduced. Systems theory, organizational and other mid-level theories are addressed. The interface between ethical and regulatory/legal obligations will be examined.

NURS 702: 3 s.h.**Applied Research**

The relationships among basic and applied research, translational science, and evidence-based practice in healthcare settings are examined through this course. Research elements and methods are analyzed with an emphasis on research ethics and reading, interpreting, and evaluating quantitative and qualitative research studies that can be used to inform nursing practice.

NURS 703: 3 s.h.**Epidemiology & Health Promo**

Focus on the integration of evidence-based practice and epidemiological approaches to promote consistent and equitable care for diverse populations. Data will be critically analyzed to identify barriers to equitable quality healthcare. Analyze epidemiological, biostatistical, occupational, and environmental data in the development, implementation, and evaluation of clinical prevention and population health. Consideration of ethically sound solutions to complex issues related to individuals, communities and populations.

NURS 704: 3 s.h.**Complex Health Care Systems**

Focus on the major theories and approaches to sustainable healthcare business practices. Key areas of interest include application of organizational theory, consideration of organizational culture and ethical decision-making. Focus on quality improvement and ensuring patient safety, with an emphasis on outcome indicators and the relationship among processes, outcomes and costs.

NURS 705: 3 s.h.**Evidence-Based Practice Process**

Focuses on developing the necessary skills needed for applying ESP processes within the context of a practice setting, health care organization, or community. Provides the foundation for the DNP Capstone experience. Emphasis on the scholarly, systematic evidenced-based practice approach to problemsolving. The relationship between nursing interventions and patient outcomes is examined and opportunities for improvement are sought.

NURS 706: 3 s.h.**Statistical Methods**

Exploration of statistical methods commonly used by advanced practice nurses to understand human health patterns. Descriptive and inferential statistics are applied through the use of statistical software packages and manipulation of datasets. Appraisal of appropriateness of research methods and techniques is included.

NURS 707: 3 s.h.**Scholarly Project Design Sem**

Focus is on the design and defense of the student's proposed capstone project. Integration of foundational courses to develop, design and successfully defend the proposed capstone project. Seminar style allows for increased interaction with faculty advisors and course peers. 3 cr; 1 cr lecture 2 cr (110 hours) clinical.

NURS 708: 3 s.h.**Informatics & Data Management**

Design, select, and use information systems/technology to evaluate programs of care, outcomes of care, and care systems. Examine how information systems/technology provide a mechanism to apply budget and productivity tools, practice information systems and decision supports, and web-based learning or intervention tools to support and improve patient care.

NURS 709: 3 s.h.**Implementation Seminar**

Focus is on the implementation of the student's capstone project, as well as collection of specified outcome data. Students will engage in their selected area of practice to enact the previously approved capstone project. Seminar style allows for increased interaction with faculty advisors and course peers. 3 cr, 1 cr lecture, 2 cr (110 hours) clinical.

NURS 710: 3 s.h.**Transforming Healthcare**

This culminating course reflects the student's ability to assume a leadership role, employ effective communication and collaboration skills, evaluate practice, and successfully negotiate transformational change in the healthcare setting. Special attention is paid to the theoretical underpinnings and the broader implications of the capstone projects.

NURS 711: 3 s.h.**Evaluation Seminar**

This seminar course focuses on the evaluation of the previously implemented EBP project. Students will engage in project evaluation/ data analysis, as well as discussion with their class and committee. The seminar will culminate in the final defense of the capstone project. The defense will include an explanation of the project implementation and analysis. Successful defense will result in completion of the course of study. 3 cr, 1 cr. lecture and 2 cr. (110 hours) clinical.

NURS 786: 1-6 s.h.**Topics: Clin Adv Doct Nsg Prac**

In-depth clinical practice in the current interest or need in advanced nursing which are not normally covered in regular courses. This clinical topics course will vary according to the needs of students and faculty involved.

NURS 787: 1-6 s.h.**Topic Adv Doct Nsg Prac**

In depth investigation and development of one or more topics of current interest in advanced nursing which are not normally covered in current courses. Special topics to be covered and methods used will vary according to the needs of students and faculty involved.

NURS 791: 1-3 s.h.**Ind Stdy: Doct Nurs Practice**

In-depth approach to an individually structured problem. Focus will vary according to the needs of students and faculty involved.

NURS 799: 3,6 s.h.**Appl Supervsn:Schl Hlth Srvcs**

Provides field experiences in a school setting, with emphasis on the comprehensive role of school health services supervision, methods for personnel evaluation, observing and supervising school health personnel budget, staff in-service development, health curriculum evaluation, and school health program assessment/revision and community relations. Prereq: EDSU 700, 701 and 703.

Occupational Safety & Env Hlth (OSEH)

OSEH 120: 3 s.h.**Fundamentals of Safety, Health, Environmental Issues (G3)**

Introduction to safety, health and environmental issues that impact people and workplaces. Includes the historical development of safety, the impact of accidents on society, a legislative overview and basic principles of personal risk assessment and management.

OSEH 179: 3 s.h.**Experimental**

Experimental

OSEH 220: 3 s.h.**Legal Aspects Environmental Safety**

Legal issues relative to occupational safety and environmental health. Includes federal and state legislation, resolution of legal and ethical challenges, product safety and professional liability.

OSEH 221: 3 s.h.**Industrial Fire Prevention, Protection and Control**

Basic principles, chemistry of fire, fire hazards determination, workforce notification, alarm and sprinkler systems, protective equipment, evacuation procedures and fire fighting methods.

OSEH 221H: 3 s.h.**Hon: Fire Prevention****OSEH 222: 3 s.h.****Construction Safety**

Methodology for the anticipation, recognition, evaluation and control of safety and health hazards associated with construction industries. Topics include engineering principles and risks associated with multiple types of facilities and infrastructures. Prereq: OSEH 120

OSEH 279: 3 s.h.**Experimental**

Experimental

OSEH 300: 3-12 s.h.**Co-Op Ed Experience in OSEH**

Co-Op Ed Experience in OSEH

OSEH 320: 3 s.h.**Safety Engineering Principles**

Methods for the identification and analysis of industrial hazards. Emphasis on application of basic safety engineering principles for the control of losses in an industrial environment. Prereq: OSEH 120.

OSEH 321: 4 s.h.**Environmental & Industrial Hygiene I - Chemical and Biological Hazards**

Course covers the anticipation, recognition, evaluation, and control of chemical and biological hazards in the workplace. Topics include: toxicology, gases, vapors, solvents, particulate matters, respiratory protection, fit testing, air sampling protocols and strategies, microbial and biological hazards, and government regulations. The challenging concerns of health hazards related to nano size particles in the workplace is addressed. Prereq: OSEH 120, CHEM 104, MATH 101 or Math 151 or Math 160 or Math 161, or permission of instructor.

OSEH 323: 3 s.h.**Human Factors in OSEH**

Ergonomic study of interaction between people and their work. Emphasis on the application of biological sciences to engineering principles in an effort to optimize efficiency, productivity and safety. Topics include anthropometrics, biomechanics, design principles, physiological and cognitive capabilities and task-evaluation techniques. Prereq: OSEH 120 or permission of instructor.

OSEH 333: 3 s.h.**Introduction to System Safety**

Qualitative and quantitative system safety methods used to analyze and control risk. Includes a variety of analytical engineering techniques that are applied to practical system-analysis problems. Prereq: OSEH 320 and MATH 130.

OSEH 379: 3 s.h.**Experimental**

Experimental

OSEH 400: 3-12 s.h.**Co-Op Ed Experience in OSEH**

Co-Op Ed Experience in OSEH

OSEH 410: 3 s.h.**Safety and Hygiene Management**

Principles and practices of occupational safety and environmental health management. Includes the development of safety objectives and policy, evaluation and management of risk, and program implementation and evaluation. Offered annually. Prereq: OSEH 220 and 320 or permission of instructor.

OSEH 422: 4 s.h.**Environmental & Industrial Health II - Physical Hazards**

Fundamental theory and methods used in the anticipation, recognition, evaluation and control of the physical hazards of noise, ionizing/nonionizing radiation, illumination, thermal stress, local exhaust ventilation, and dilution ventilation. Covers regulatory standards and control methods. Prereq: OSEH 120, MATH 101 or 151 or 160 or 161 and PHYS 103 or 104 or 131, or permission of instructor.

OSEH 430: 1 s.h.**Topics in Occupational Safety & Environmental Health**

A review of industry specific hazards and operations related to Occupational Safety and Environmental Health. Topics vary according to the needs and interest of students involved. The course is intended to build on basic safety management concepts and an understanding of how these concepts are applied in specific sectors. Challenges and specific regulatory requirements, which may be unique to the business sectors covered, will be included. Emphasis is placed on leadership and mentorship of OSEH students. Reserved for Senior OSEH majors or by instructor permission.

OSEH 435: 3 s.h.**Environmental Health**

Environmental health review of scientific and technical foundations, with an examination of problems, regulations and control strategies. Covers identification of pollution sources, evaluation strategies, engineering controls, federal and state regulatory and permitting processes. Emphasis is on practical information needed by environmental health professionals to resolve issues affecting industry. Prereq: OSEH 321 or ENVI 330 or permission of instructor.

OSEH 440: 6,12 s.h.**Internship**

Students work full-time for nine weeks or more under the direct supervision of an OSEH professional in industry, insurance, government agencies or other approved location. University supervision, seminars and evaluation are provided. Students experience problems, practices and principles in the management of occupational safety and/or industrial hygiene programs. To be taken twice, concurrently or consecutively, with increased work and research responsibilities. Prereq: senior OSEH majors and permission of OSEH coordinator.

OSEH 479: 1-6 s.h.**Experimental**

Experimental

OSEH 489: 1-4 s.h.**Honors Course**

Preparation of honors thesis proposal. For the definition of honors course and student eligibility, refer to the departmental honors section of this catalog. EDTE, AETM and OSEH majors may enroll in the Department of Applied Engineering, Safety & Technology honors program. Contact the department office for guidelines and an application.

OSEH 499: 1-3 s.h.**Departmental Honors**

Philosophy (PHIL)

PHIL 100: 3 s.h.**Introduction to Philosophy (G1)**

A beginning study of some of the major philosophical issues and thinkers.

PHIL 120: 3 s.h.**Introduction to Ethics (G1)**

Examines major philosophical approaches to ethical thinking and moral judgment, offering tools for a clearer understanding of ethical decision-making in our daily lives. Consideration of a range of perennial and contemporary ethical and social problems.

PHIL 179: 3 s.h.**Experimental**

Experimental

PHIL 201: 3 s.h.**Philosophical Psychology (G1)**

Intensive study of selected problems, figures or movements in psychology with emphasis on the philosophical foundations or implications. Offered annually.

PHIL 202: 3 s.h.**Love and Sexuality (G1)**

Various viewpoints regarding both the nature of love and of human sexuality. Offered annually.

PHIL 202H: 3 s.h.**Hon: Love & Sexuality (G1)****PHIL 211: 3 s.h.****Introduction to Logic (G1)**

Principles of correct thinking; deductive inference; inductive inference; use and misuse of language in reasoning.

PHIL 220: 3 s.h.**Existentialism (G1)**

Study of the works of important existentialist thinkers including Kierkegaard, Dostoyevsky, Nietzsche, Sartre, Camus, Beauvoir and others. Issues addressed include human freedom, the problem of life's meaning, the relation between the individual and society, the grounds of human relations, Existentialism and the problem of race, Existentialism and Feminist thought, and others. Discussion of existentialist themes in literary, cinematic and other artistic endeavors.

PHIL 260: 3 s.h.**Food, Ethics & Society (G1)**

Examines the ethical problems society faces in regards to food production and consumption practices, offering tools for balancing the nutritional, public health, and normative needs of communities and individuals.

PHIL 279: 3 s.h.**Experimental**

Experimental

PHIL 280: 3 s.h.**Thanatopsis: Viewing Death (G1)**

Various ways people have confronted death and have sought to understand it. Offered periodically.

PHIL 281: 3 s.h.**Bus. & Prof. Ethics (G1)**

Examines basic ethical concepts, principles and theories, as well as applications of them to a range of issues in business and professional contexts. Students will explore case studies in a range of organizational and social settings; standards of professional ethics in various disciplines; and best practices relating to ethical conduct in various contexts. Prerequisite: ENG 110.

PHIL 285: 3 s.h.**Biomedical Ethics (G1)**

A study of biomedical moral and ethical problems. Offered annually.

PHIL 291: 3 s.h.

Black, Latin & Native Am Phil. (D)
Examines patterns of moral origins.

PHIL 300: 3-12 s.h.

Co-Op Ed Experience in Phil
Co-Op Ed Experience in Phil

PHIL 312: 3 s.h.

Mathematical Logic (G1)
First-order predicate calculus with identity and functional symbols. Offered annually. Prereq: PHIL 211 or some background in mathematics.

PHIL 313: 3 s.h.

World Religions (G1)
A study of the contents of certain living world religions. Offered periodically.

PHIL 313H: 3 s.h.

HNRS:World Religions (G1)

PHIL 314: 3 s.h.

Philosophy of Science (G1, W)
The structure of scientific explanation; the logic character of scientific laws and theories; convention and description in science; probability and induction; the scientific method in the behavioral sciences. Offered periodically. Prereq: ENGL 110.

PHIL 321: 3 s.h.

Ancient Philosophy (G1, W)
The pre-Socratics, Socrates, Plato and Aristotle. Offered in fall. Prereq: ENGL 110.

PHIL 321H: 3 s.h.

Hnrs:Ancient Philosophy (G1, W)
Hnrs:Ancient Philosophy

PHIL 322: 3 s.h.

Modern Philosophy (G1, W)
Descartes, Leibniz, Spinoza, Locke, Berkeley, Hume and Kant. Offered in spring. Prereq: ENGL 110.

PHIL 322H: 3 s.h.

Hnrs:Modern Philosophy (G1, W)
Hnrs:Modern Philosophy

PHIL 327: 3 s.h.

Philosophy in Film (G1)
Investigation of philosophical themes, problems and questions raised in film. The medium of film provides a rich and lively context to explore traditional and current issues pertinent to the discipline of philosophy. Offered annually.

PHIL 327H: 3 s.h.

HNRS:Philosophy in Film (G1)

PHIL 328: 3 s.h.

Philosophy Classics (G1, W)
One or more major works or of a major philosopher or philosophers. May be taken any number of times for credit. Offered annually. Prereq: ENGL 110.

PHIL 328H: 3 s.h.

Hnrs:Philosophical Classics (G1, W)
Hnrs:Philosophical Classics

PHIL 331: 3 s.h.

American Philosophy (G1)
A study of philosophy in America. Offered periodically.

PHIL 341: 3 s.h.

Philosophy of Language (G1, W)
Philosophical analyses of language and meaning across multiple philosophical traditions (e.g. Analytic Philosophy; Continental Philosophy; American Pragmatism; Feminism). Prereq: ENGL 110

PHIL 345: 3 s.h.

Humanity and Environment (P)
Critical examination of the ways in which our understanding of the natural world affects our relationship with it as well as our concepts of human nature and society. Emphasis will be on how knowledge gained through the biological sciences (historically and presently) changes the way we think about ourselves and our place in the natural world. Specific topics include the social impact of evolutionary theory, sociobiology and evolutionary psychology, genetic engineering and aspects of environmental philosophy. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

PHIL 347: 3 s.h.

Phil of City, Tech & Publ Hlth (G1)
Examines major philosophical approaches, debates, and intersections between philosophy of the city, philosophy of technology, and public health. Offers tools for a clearer understanding of the competing tensions of city life, technological advancement, and problems of public health that affect the quality of our daily lives. Consideration of a range of perennial and contemporary social, technological, and public health problems.

PHIL 351: 3 s.h.

Contemporary European Philsphy (G1)
A study of the European philosophical traditions of hermeneutics, phenomenology, existentialism and structuralism in their historical context, their relations to contemporary culture, particularly to psychology, literature, theology and political action. Offered periodically.

PHIL 361: 3 s.h.

Asian Philosophy (G1)
A study of significant ideas in the philosophical thought of Asia. Offered periodically.

PHIL 373: 3 s.h.

Knowledge, Reality & Sci Fict (G1)
Examines philosophical theories of reality (metaphysics) and knowledge (epistemology). Uses science fiction as a vehicle for exploring these ideas. Offered periodically.

PHIL 379: 3 s.h.

Experimental
Experimental

PHIL 381: 3 s.h.

Global Ethics & Social Justice (G1, W)
A philosophical examination of ethical issues emergent through globalization. Topics addressed may include wealth and resource distribution in a global economy; environmental crises, disaster, and government responses to them; social justice and social protest movements; philosophies of non-violence; peace studies and global conflict resolution.

PHIL 382: 3 s.h.

Philosophy of Religion (G1)
An examination of the justifiability of religion and of the nature of the religious experience, especially religious language. Offered infrequently.

PHIL 383: 3 s.h.**Philosophy of Art (G1, W)**

The history of the philosophy of art; an analysis of the aesthetic experience, the aesthetic object and the creative act. Emphasis will be placed on an analysis of the concepts employed in the criticism of literature, painting and music. Offered periodically. Prereq: ENGL 110.

PHIL 391: 3 s.h.**Gender, Utopia, Human Nature (P)**

Utopian thought, from classical philosophy to contemporary science fiction. Shows how different cultures have portrayed gender and gender roles as fixed by human nature or as manifestations of alterable social institutions. Prereq: COMM 100, ENGL 110, junior status and two courses in one area of the social sciences or two courses in philosophy. Offered periodically.

PHIL 400: 3-12 s.h.**Co-Op Ed Experience in Phil**

Co-Op Ed Experience in Phil

PHIL 401: 3 s.h.**Philosophy and Neuroscience (G1)**

An examination of the inter-relation of philosophy and neuroscience. Our growing knowledge of the brain and nervous system has profound implications for a range of traditional philosophical issues including the nature of consciousness, personal identity, free will, action-theory and ethics/decision-making. Reciprocally, philosophy provides critical and interpretive tools for better understanding the methods and significance of findings in neuroscience. Topics covered in this course include: perception, the self and self-awareness, neuroscience of free will, neuroethics, and the cognitive neuroscience of language.

PHIL 407: 3 s.h.**Political and Social Philosophy (G1)**

An examination of political and social philosophies with a view to discovering their relation to present political and social realities. Offered periodically.

PHIL 460: 3 s.h.**Philosophy of Law & Human Right (G1)**

Examines theories and practices related to philosophy of law, including topics in legal studies/legal theory, legal reasoning and deliberation, jurisprudence, and human rights.

PHIL 471: 3 s.h.**Advanced Seminar in Philosophy (G1, W)**

Explores the core philosophical issues concerning theories of truth, knowledge and objective values. Emphasizes the development of the skills of critical reading and writing as well as performing philosophical research. May be taken any number of times for credit. Offered annually. Prereq: ENGL 110 and 3 credits in PHIL at the 200 level or higher or permission of instructor.

PHIL 479: 3 s.h.**Experimental**

Experimental

PHIL 498: 1-6 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

PHIL 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

PHIL 500: 3-12 s.h.**Co-Op Ed Exp In Phil**

Co-Op Ed Exp In Phil

Physics (PHYS)

PHYS 101: 3 s.h.**Survey of Physics (G2)**

An elementary treatment of fundamental concepts of classical and modern physics. Selected examples from classical mechanics, electromagnetism, thermodynamics, relativity and quantum mechanics. The solving of numerical problems is de-emphasized. 3 hr. lec. and discussion. No credit in block G2 for majors in the School of Science and Mathematics. Credit will be granted for only one of the courses: PHYS 101, 103 or 104. Offered in spring. Prereq: MATH placement at the 100 level or above.

PHYS 103: 4 s.h.**Elements of Physics (G2)**

An elementary treatment of fundamental concepts of classical and modern physics. Selected examples from classical mechanics, electromagnetism, thermodynamics, relativity and quantum mechanics. The solving of numerical problems is de-emphasized. 3 hrs. lec., 2 hrs. lab. No credit in block G2 for majors in the following departments: Biology, Chemistry, Computer Science, Earth Science, Math or Physics. Credit will be granted for only one of the courses: PHYS 101, 103 or 104. Offered in fall, periodically in spring.

PHYS 103H: 4 s.h.**Hrs:Introduction to Physics (G2)****PHYS 104: 4 s.h.****Applied Physics (G2)**

A study of the application of mathematics to practical problems in physics, using Newtonian ideas, and emphasizing applications to devices such as machines and engines, and systems such as electrical circuits. 3 hrs. lec., 2 hrs. lab. No credit in block G2 for majors in the School of Science and Mathematics. Credit will be granted for only one of the courses: PHYS 101, 103 or 104. Offered in spring. Prereq: math placement at the 100 level or above.

PHYS 117: 3 s.h.**General Astronomy (G2)**

Astronomy for a general audience; emphasis on the physical nature of the universe. Terrestrial astronomy, light, telescopes, spectra, stars, stellar evolution, galaxies, cosmology, the solar system. 3 hrs. lec. and discussion. No credit in block G2 for majors in the School of Science and Mathematics. Offered in fall, spring.

PHYS 131: 4 s.h.**Physics 1 with Algebra (G2)**

An introductory algebra-based course. Fundamental laws and properties of matter, mechanics and heat. Problems dealing with these laws. 3 hrs. lec., 1 hr. recitation and 2 hrs. lab. Prereq: MATH 101 or MPT score sufficient for the student to enroll in MATH courses above MATH 110. Offered fall, summer.

PHYS 132: 4 s.h.**Physics 2 with Algebra (G2)**

Continuation of Physics 131. Fundamental laws and properties of electricity, magnetism, waves, sound, light and radiation. 3 hrs. lec., 1 hr. recitation and 2 hrs. lab. Offered spring, summer. Prereq: PHYS 131 or 231.

PHYS 179: 3,4 s.h.**Experimental**

Experimental

PHYS 198: 1 s.h.**Seminar In Physics**

An overview of the history, practice, philosophy and unity of physics and its application to other disciplines, orienting beginning physics majors to the study of physics. Mandatory for, and only open to, physics majors in their freshman year. 1 hr. discussion. Offered in fall.

PHYS 205: 3 s.h.**Musical Acoustics (G2)**

Intended for musicians dealing with the physical nature of sound and sound sources, and the relation of these to music and musical instruments. The use of mathematics is kept to a minimum. 2 hrs. lec., recitation, 2 hrs. lab. Offered in spring. Prereq: MUSI 112.

PHYS 230H: 1 s.h.**Hnrs:General Physics Seminar (G2)**

The ideas of introductory physics in extended depth, in the language of calculus, using problems, laboratory exercises, readings and discussion. Grades of B- or higher in both PHYS 231 and PHYS 230H will result in honors designation for the pair. The pair of courses counts as one entry in the science component of the curriculum record form and results in six hours of general education credit. Coreq: Concurrent registration in PHYS 231 required and either good standing in the Honors College or a 3.35 GPA or permission of instructor.

PHYS 231: 5 s.h.**Physics 1 with Calculus (G2)**

An introductory course in classical physics dealing with mechanics, fluids, waves and thermodynamics. 3 hrs. lec., 1 hr. recitation, one 3-hr. lab. Offered in fall, spring, summer. Prereq: C- or higher in MATH 161.

PHYS 232: 5 s.h.**Physics 2 with Calculus (G2)**

Continuation of PHYS 231. An introductory course in classical physics dealing with electricity, magnetism and optics. 3 hrs. lec., 1 hr. recitation, one 3-hr. lab. Offered in fall, spring, summer. Prereq: C- or higher in PHYS 231. Coreq: MATH 211.

PHYS 233: 3 s.h.**Wave-Particle Theory**

Selected topics from the areas of waves and optics, special relativity, an introduction to the concepts and development of modern physics and single-particle quantum mechanics. 3 hrs. lec. Offered in spring. Prereq: C- or higher in PHYS 232. Coreq: MATH 311.

PHYS 266: 3 s.h.**Electronics**

The fundamentals of analog devices and their application to electronic circuits. Operational amplifiers, power supplies, semi-conductor devices, oscillators, and an introduction to integrated circuits. One 4-hour Lecture and Lab per week. Prereq: PHYS 132 or 232. Coreq: MATH 161. Offered in spring.

PHYS 279: 1-3 s.h.**Experimental**

Experimental

PHYS 279H: 1-3 s.h.**Experimental Honors**

Experimental Course for Honors Credit

PHYS 300: 3-12 s.h.**Co-Op Ed Experience in Physics**

Co-Op Ed Experience in Physics

PHYS 302: 3 s.h.**Physics and Evolution of Western Civilization (P)**

The history of the mechanization of the world picture. A study of physics in the evolution of Western civilization and thought relating the impact of the Newtonian revolution on technology, society and thought. 3 hrs. lec. and discussion. Offered periodically. Prereq: a physical science course, COMM 100, ENGL 110 and junior status.

PHYS 302H: 3 s.h.**H:Phys and Evol of West Civ (P)**

H:Phys and Evol of West Civ

PHYS 311: 3 s.h.**Mechanics 1**

Lectures, problems and demonstrations developing the fundamental principles and concepts of classical mechanics, including Newton's laws of motion in three dimensions, conservation laws, linear and nonlinear oscillating systems, gravitation and central force problems. 3 hrs. lec. Offered in fall. Prereq: C- or higher in PHYS 232. Coreq: MATH 365.

PHYS 312: 3 s.h.**Mechanics 2**

A continuation of PHYS 311. Includes classical analysis of rigid body motion, noninertial frames of reference, Lagrangian and Hamiltonian dynamics, systems of coupled oscillators, plus special topics. 3 hrs. lec. Offered in spring. Prereq: PHYS 311.

PHYS 317: 3 s.h.**Introduction to Astronomy**

An overview of astronomy and astrophysics for students majoring in the sciences or mathematics, emphasizing selected areas such as terrestrial astronomy, celestial mechanics, stellar evolution, cosmology and the solar system. 3 hrs. lec. Offered in fall of odd years. Prereq: a year of collegelevel physics and calculus.

PHYS 321: 3 s.h.**Electromagnetic Fields 1**

Electrostatic and magnetic fields in vacuum and in dielectric and magnetic materials. Maxwell's equations are developed. 3 hrs. lec. Prereq: PHYS 232. Coreq: MATH 365.

PHYS 322: 3 s.h.**Electromagnetic Fields 2**

Consequences of Maxwell's equations. Solutions to Laplace's equation, electromagnetic radiation and relativistic electrodynamics are discussed. 3 hrs. lec. Offered in fall. Prereq: PHYS 321. Coreq: PHYS 335.

PHYS 331: 2 s.h.**Fundamentals of Optics**

Lab-based course in physical optics, including applications of geometrical optics such as image formation by mirrors and lenses, microscopy, reflection, refraction, and basic phenomena in wave and quantum optics such as interference, diffraction, color mixing and filtration, polarization, birefringence, absorption, dispersion, scattering, laser properties and laser application. 1 hr. lec., 3 hrs. lab. Offered in fall. Prereq: PHYS 232 or PHYS 132 and MATH 211.

PHYS 334: 3 s.h.**Macroscopic Physics**

Lectures, problems and demonstrations which develop the basic ideas of classical continuum physics and the macroscopic behavior of solids, liquids and gases, including an introduction to fluid dynamics, stress-strain relationships in solids, electric and magnetic properties of materials, phase transitions, superconductivity and the classical laws of thermodynamics. 3 hrs. lec. and discussion. Offered in spring. Prereq: C- or higher in PHYS 232. Coreq: MATH 311.

PHYS 335: 3 s.h.**Quantum Systems**

Multi-electron atoms, statistical mechanics of classical and quantum systems and introduction to nuclear physics. Principles are applied to selected examples. 3 hrs. lec. Offered in fall. Prereq: PHYS 233, 334.

PHYS 345: 3 s.h.**Symbolic Computational Methods**

Symbolic computational methods involving procedural, functional, rule-based programming and pattern matching using the graphical and numerical capabilities of Mathematica or other integrated mathematical software systems, with applications to a broad range of computationally challenging problems in physics. Offered in fall of odd years. Prereq: PHYS 233. Coreq: PHYS 311 and MATH 365.

PHYS 351: 1 s.h.**Intermediate Physics Lab 1**

Selected Experiments in classical and modern physics introducing a variety of experimental techniques. 3 hours lab. Prereq: PHYS 232 and either PHYS 266 or CSCI 370. Offered in fall.

PHYS 351H: 1 s.h.**H:Intermediate Physics Lab 1****PHYS 352: 1 s.h.****Intermediate Physics Lab 2**

Continuation of PHYS 351. 3 hrs. lab. Offered in spring. Prereq: PHYS 351.

PHYS 360: 4 s.h.**Circuit Analysis**

Mathematical analysis of linear circuits in the complex domain. Differential equations, operators, transfer functions, Laplace transforms and computer simulation with SPICE. 4 hrs. lec. Offered infrequently. Prereq: PHYS 266 and MATH 365.

PHYS 365: 3 s.h.**Digital Electronics**

Introduction to digital electronics and microprocessors. Design and analysis of combinatorial and sequential digital circuits, microcomputer interfacing and assembly programming. Two 3-hr. labs. Offered infrequently. Prereq: CSCI 140 or permission of instructor.

PHYS 366: 3 s.h.**Analog Electronic Circuits**

Continuation of PHYS 266. Analysis and design of microelectronic circuits. Analytical treatment of discrete and integrated analog and digital circuits. 3 hrs. lec. Offered infrequently. Prereq: PHYS 266, 360 or permission of instructor.

PHYS 379: 3 s.h.**Experimental**

Experimental

PHYS 395: 3 s.h.**Techniques of Mathematical Physics**

Treatment of advanced mathematical techniques such as complex analysis, matrices, Fourier series, calculus of variations, special functions and integral transforms applied to selected areas of physics. Offered in spring. Prereq: PHYS 233, MATH 365.

PHYS 395H: 3 s.h.**Hon: Techniques/Mathmt Physics****PHYS 400: 3-12 s.h.****Co-Op Ed Experience in Physics**

Co-Op Ed Experience in Physics

PHYS 431: 3 s.h.**Solid State Physics**

Classical and quantum analyses of solid matter. Topics include crystal structure, the reciprocal lattice and X-ray diffraction; mechanical properties phonons; semiclassical analysis of electrical and magnetic properties of insulators and metals; electron band theory of metals, insulators and semiconductors. 3 hrs. lec. Offered in spring of odd years. Prereq: PHYS 335.

PHYS 435: 3 s.h.**Statistical Mechanics**

Lectures, problems, and computer simulations developing the fundamental principles of classical and quantum statistical mechanics. Subjects include probability theory, the foundations of ensemble development, and their application to classical, Fermi, and Bose systems. Of special interest is the phenomenology of phase transitions and the modern development of the renormalization group. Prereq: PHYS 334.

PHYS 451: 1 s.h.**Advanced Physics Lab 1**

Selected experiments in classical and modern physics, with opportunities to apply sophisticated techniques to extended experimental problems. Prereq: PHYS 352.

PHYS 452: 1 s.h.**Advanced Physics Lab 2**

Continuation of PHYS 451. 3 hrs. lab. Offered in spring. Prereq: PHYS 451.

PHYS 462: 3 s.h.**Advanced Electronics**

Microprocessor applications and interfacing, real-time programming. Topics are selected from computer design, control loops, phase-locked loops and communications. Two 3-hr. labs. Offered infrequently. Prereq: PHYS 266, 365 or permission of instructor.

PHYS 471: 3 s.h.**Quantum Mechanics**

An introduction to formal quantum theory in terms of operators in Hilbert space and Dirac notations which will be used in finding the solutions of eigenvalue problems of several potentials, addition of angular momenta, dynamics of spin 1/2 particle, and introduction to perturbation theory. Prereq: PHYS 233, MATH 322, and MATH 365 or permission of instructor. Offered fall of even year.

PHYS 479: 3 s.h.**Experimental**

Experimental

PHYS 489: 1-4 s.h.**Honors Course**

Honors Course

PHYS 492: 1,2 s.h.**Physics Research and Seminar**

The first semester of an independent research experience supervised by a faculty mentor. Attendance at weekly seminars is also required. Offered in fall. Prereq: PHYS 335 and 351.

PHYS 495: 1-3 s.h.**Topics in PHYS**

Selected topics chosen from the areas across physics including astronomy and astrophysics, classical physics, theoretical physics, applied physics, and modern physics. Permission of instructor. Offered infrequently.

PHYS 495H: 1-3 s.h.**H: Quantum Mechanics 2**

PHYS 498: 1-4 s.h.

Independent Study/Research

An independent research experience supervised by a faculty mentor. Attendance at the weekly seminars associated with PHYS 492 is also required. Prereq: PHYS 492 or permission of instructor. Offered in fall, spring.

PHYS 499: 1-4 s.h.

Departmental Honors

Departmental Honors

PHYS 500: 3-12 s.h.

Co-Op Ed Experience in Physics

Co-Op Ed Experience in Physics

Psychology (PSYC)

PSYC 100: 3 s.h.

General Psychology (G3)

An introduction to the study of behavior and mental activity, including such aspects as motivation, emotions, sensation and perception, individual differences, the nervous system, learning and personality with a view of understanding behavior.

PSYC 100H: 3 s.h.

Hnrs:General Psychology (G3)

Hnrs:General Psychology

PSYC 179: 3 s.h.

Experimental

Experimental

PSYC 205: 3 s.h.

Psychology Misconceptions (G3, W)

This course will provide an introduction to some of the most popular and persistent misconceptions in Psychology. These misconceptions will cut across sub-disciplines within Psychology, to include clinical, cognitive, and social psychology, as a few examples. The origin as of these myths will be explored, as well as how they are seen today in the popular media, in practice, in education, and in research domains. The implications of the myths will also be considered. The course will also address how to effectively combat these myths. Prerequisites: PSYC 100 and ENGL 110

PSYC 211: 4 s.h.

Principles of Statistics and Experimental Design 1 (W)

An introduction to research methods and design and to statistical analysis of psychological data. 3 hrs. lec., 2 hrs. lab. Prereq: ENGL 110, PSYC 100 and MATH 101, 105, 204 or 130 with a minimum grade of C- or math placement into MATH 130 or above.

PSYC 212: 4 s.h.

Principles of Statistics and Experimental Design 2

A study of standard experimental designs and statistical procedures widely used in psychological research. 3 hrs. lec., 2 hrs. lab. Prereq: PSYC 211 with a grade of C- or higher and MATH 130 with a grade of C- or higher.

PSYC 215: 3 s.h.

Intro to Physiological Psychology

Serves as an introduction to the nervous system in relation to cognition and behavior. It will begin at the cellular level, building up to the systems level. Offered fall, spring. Prereq: BPE 100 or BIO 100 or 101 and PSYC 100.

PSYC 216: 3 s.h.

Intro Learn Beh Analysis

This course provides an introduction to the field of Behavior Analysis, and covers the basic principles of conditioning, learning, and behavior change derived from the experimental literature. Topics include an introduction to the philosophy of Radical Behaviorism, historical development of the field, single-subject experimental design and data analysis, and principles of respondent and operant conditioning. Prereq: PSYC 100

PSYC 227: 3 s.h.

Development of the Child and Adolescent (G3)

A study of the theory and research pertaining to the growth, development and behavior of children through adolescence. Prereq: PSYC 100. No course credit given if credit earned for separate course in child psychology or adolescent psychology. No credit given if credit earned for PSYC 228. PSYC Majors may only count one of PSYC 227, 228 or 229 as a core elective.

PSYC 227H: 3 s.h.

Hnrs:Devel Child and Adolescent (G3, W)

Hnrs:Devel Child and Adolescent

PSYC 228: 3 s.h.

Life Span Human Development (G3)

A focus upon the major stages of human development, beginning with infancy and continuing through the developmental changes of childhood, adolescence and adulthood through to old age and death. Cognitive and psychosocial aspects of human development are emphasized. Offered Periodically. Prereq: ENGL 110 and PSYC 100. No credit given if credit earned for PSYC 227 or 229. PSYC Majors may only count one of PSYC 227, 228 or 229 as a core elective.

PSYC 229: 3 s.h.

The Adult Years (G3)

An examination of the years from young adulthood to retirement. Focuses on intimate relationships, family, parenting and other enduring commitments. Offered in spring. Prereq: PSYC 100. No credit given if credit earned for PSYC 228. PSYC Majors may only count one of PSYC 227, 228 or 229 as a core elective.

PSYC 234: 3 s.h.

Human Relations (G3)

An examination of human interactions, both historically and currently, in diverse structures (e.g., family, social, educational, political, economic, etc.). Course content targets increased awareness and understanding of values, traditions and rites of dominant and minority groups and their effect upon interpersonal and intergroup relations. Offered periodically.

PSYC 246: 3 s.h.

Evolutionary Psychology

Reviews evolutionary theory, surveys research and, most importantly, explains how evolutionary psychology can be applied to disciplines within and beyond the field of psychology. Offered periodically. Prereq: BPE 100 or BIOL 100 or 101 and PSYC 211.

PSYC 256: 3 s.h.

Psychology Human Adjustment (G3)

An examination of factors that shape personal and social behavior, with a focus on basic issues, problems and therapies as they relate to personal adjustment. Offered in fall, spring. Prereq: ENGL 110 and PSYC 100.

PSYC 256H: 3 s.h.

Hon: Psych Human Adjustment (G3)

PSYC 279: 3 s.h.

Experimental

Experimental

PSYC 300: 3-12 s.h.

Co-Op Ed Experience in Psyc
Cooperative Education in Psychology

PSYC 311: 3 s.h.**Psychology of Drug Addiction (G3, W)**

An investigation of the problems associated with drug addiction. Evaluations of opiates, stimulants, barbiturates, depressants, hallucinogens, marijuana and alcohol, with consideration of the effects of these drugs on the individual. Offered in fall, spring. Prereq: ENGL 110 and PSYC 227 or 228 or 229 or 234.

PSYC 311H: 3 s.h.**H:Psychology of Drug Addiction (G3, W)****PSYC 314: 4 s.h.****Adv. Lab Cognitive Psychology**

A laboratory course designed to examine the nature of human memory, perception and thought, and to provide an introduction to the techniques used to study these phenomena. 3 hrs. lec., 2 hrs. lab. Offered annually. Prereq: C- or higher in PSYC 211, 212 and 215.

PSYC 315: 4 s.h.**Adv Lab Sensation & Perception**

A laboratory course designed to develop an understanding of the models and theories of the sensory and perceptual systems. 3 hrs. lec., 2 hrs. lab. Offered in fall, spring. Prereq: C- or higher in PSYC 211, 212 and 215.

PSYC 316: 4 s.h.**Adv Lab Learn Beh Analysis**

A theoretical laboratory course designed to investigate and apply the concepts of learning and motivation to both human and animal behavior. 3 hrs. lec., 2 hrs. lab. Offered annually. Prereq: C- or higher in PSYC 211, 212 and 216.

PSYC 317: 3 s.h.**Social Psychology**

A review of the principles of social psychology derived from experimental study. Offered in spring. Offered in spring. Prereq: PSYC 100. PSYC 211 recommended.

PSYC 317H: 3 s.h.**HNRS: Social Psychology****PSYC 318: 3 s.h.****Psychology of Racism (D, P)**

Examination of individual and institutional racism in all its aspects, with an emphasis on the various psychological explanatory theories and supporting research as well as the various techniques for alleviating this problem. Additional overview of resultant effects on the victims. Prereq: COMM 100, ENGL 110, PSYC 100 and junior status.

PSYC 318H: 3 s.h.**H:Psychology of Racism (D, P)**

Honors Psychology of Racism

PSYC 325: 3 s.h.**Happiness and Well-Being (D, P)**

This course will examine the constructs of happiness and well-being across multiple variables such as culture, environment, spirituality, and personal factors. Common myths and misconceptions will also be evaluated. Students will leave the course with a greater understanding of the science behind the constructs of happiness and well-being as well as strategies to apply in their own pursuit of living a fulfilling life. Junior status.

PSYC 325H: 3 s.h.**Happiness and Well-Being (D, P)**

Honors Happiness and Well-Being

PSYC 326: 3 s.h.**Human-Animal Bond**

The course will introduce students to the interaction between human and animals with emphasis on the bond between people and their pets. The course will provide an overview of the social, emotional, and psychological implications of pet ownership including attachment and pet loss. The use of companion animals in education, healthcare and clinical settings will be covered as well as the connection between animal maltreatment and interpersonal violence. A service learning project involving contact with companion animals is required. Prereq: PSYC 100 and PSYC 211

PSYC 327: 4 s.h.**Adv Lab in Developmental Science**

Examines advanced topics in child and adolescent development in depth through the application of experimental and nonexperimental research approaches and through critical reading of the research literature. 3 hrs. lec., 2 hrs. lab. Offered annually. Prereq: C- or higher in PSYC 211, 212 and 227 or 228. Submission of satisfactory FBI, Act 34/151 clearances required prior to the start of the course, but not for registration.

PSYC 328: 3 s.h.**Psychology and Religion (P)**

An exploration of psychological and religious questions, issues and processes in the search to give meaning to one's personal and shared journey. Prereq: COMM 100, ENGL 110, PSYC 100 and junior status.

PSYC 329: 3 s.h.**Industrial Psychology (G3, W)**

A study of research and applications of psychology to the work setting. Knowledge of the psychological processes of learning, motivation, perception and assessment is used to analyze selection, training, work design and performance. Offered annually. Prereq: ENGL 110 and PSYC 100 and MATH 130, 235 or PSYC 211.

PSYC 329H: 3 s.h.**Hon: Industrial Psychology (G3, W)****PSYC 335: 3 s.h.****Personality Theory (G3)**

An introduction to historic and contemporary theories of the human personality. Offered in fall, spring. Prereq: PSYC 100.

PSYC 335H: 3 s.h.**H:Personality Theory (G3)****PSYC 337: 3 s.h.****Abnormal Psychology (G3, W)**

A comprehensive study of the etiology, characteristics and treatment in the categories of abnormal behavioral manifestation. Offered in fall, spring. Prereq: ENGL 110 and PSYC 100.

PSYC 337H: 3 s.h.**H:Abnormal Psychology (G3, W)****PSYC 346: 3 s.h.****Applied Behavior Analysis**

An examination of theory, research and techniques related to the applied behavior analysis, with special emphasis placed on the application in a variety of settings (e.g., family, school and industry). Prereq: PSYC 100.

PSYC 346H: 3 s.h.**H: Applied Behavior Analysis**

Honors Applied Behavioral Analysis.

PSYC 350: 3 s.h.**Cognitive Science (P)**

Basic introduction to cognitive science. Reviews attempts to understand cognition using insights from psychology, artificial intelligence, philosophy, linguistics and the neurosciences. Examines the synthesis of those attempts in the emergent field of cognitive science. Offered periodically. Prereq: COMM 100, ENGL 110 and junior status.

PSYC 350H: 3 s.h.**H: Cognitive Science (P)****PSYC 356: 3 s.h.****Health Psychology**

A review of research and theory linking psychological factors to health. Discussion of psychosocial aspects of health behavior, pain, stress and the impact on biological systems. Evaluation of psychological and behavior interventions for health behavior change and chronic illness. Offered in fall. Prereq: PSYC 100 and PSYC 227 or 228 or 229 or 234 or 256.

PSYC 357: 3 s.h.**Neuropsychology**

This survey course will provide a thoughtful and comprehensive introduction to the field of human neuropsychology, including the history, methods, and logic of neuropsychological investigations. Prereq: BIOL 100 or BIOL 101 and PSYC 211.

PSYC 357H: 3 s.h.**Hon: Neuropsychology****PSYC 365: 3 s.h.****Human Memory**

This survey course will provide a scientific introduction to human memory. The structure and processes of human memory will be covered. There will be consideration of the current and past research, as well as models on memory. Prereq: BIOL 100 or 101 and PSYC 211.

PSYC 379: 1-4 s.h.**Experimental**

Experimental

PSYC 400: 3-12 s.h.**Co-Op Ed Experience in Psyc**

Cooperative Education in Psychology

PSYC 403: 3 s.h.**Family Systems**

An investigation of the impact of the multigenerational family system on the individual. Assessment of functional and dysfunctional family systems. Emphasis upon theorists and their orientations and intervention strategies. Offered periodically. Prereq: PSYC 100 and junior or senior standing.

PSYC 415: 3 s.h.**Advanced Physiological Psych**

A systematic examination of the nervous and sensory systems and their regulation of human behavior. May not be used in place of PSYC 314, 315 or 316 to fulfill the advanced laboratory requirement. Offered Periodically. Prereq: PSYC 100 and one course in biology. Chemistry helpful. Junior or senior standing.

PSYC 417: 3 s.h.**Tests and Measurements**

An introduction to the basic principles of psychological testing and measurement. Focus is upon issues in test construction and design, evaluations of psychometric properties and applications of tests in various fields of psychology. Offered in fall or spring. Prereq: PSYC 211 or permission of instructor.

PSYC 427: 3 s.h.**Childhood Disorders**

An in-depth look at major childhood psychological disorders. Diagnostic criteria, etiology and developmental progression presented. Introduction to diagnostic assessment techniques and commonly used interventions. Offered annually. Prereq: PSYC 100 and PSYC 227 or 228, junior/senior status.

PSYC 427H: 3 s.h.**Hon: Childhood Disorders****PSYC 447: 3 s.h.****Counseling Strategies**

An introduction to the process and practice of counseling. Emphasis is placed on learning counseling theories and on counseling skills. Offered in fall, spring. Prereq: PSYC 100. Junior or Senior status.

PSYC 447H: 3 s.h.**Hon: Counseling Strategies****PSYC 454: 3 s.h.****History and Systems of Psych**

Study of the development of psychology from a branch of philosophy to a modern science. Offered periodically. Prereq: PSYC 100 and junior or senior standing. Must have earned 75 credits and be enrolled/have taken the advanced lab to count for capstone requirement.

PSYC 455: 1-3 s.h.**Seminar in Psychology**

An advanced course devoted to critical analysis of student and professional research using staff consultant leadership. Offered periodically. Prereq: junior/senior psychology majors only and permission of instructor.

PSYC 462: 3 s.h.**Art, Music and Written Word (P)**

Study of psychological processes involved in the production and experience of music, art and literature coupled with a review of psychological theories of human creativity. Key principles within the domain of psychology will be illustrated and explored through the study of the works of artists, musicians and writers. Offered annually. Prereq: PSYC 100, COMM 100, ENGL 110 and junior status. PSYC 335 recommended.

PSYC 462H: 3 s.h.**Hon: Art, Music, Written Wrđ (P)****PSYC 479: 1-4 s.h.****Experimental**

Experimental

PSYC 483: 3 s.h.**Applied Ethology**

An introduction to applied animal behavior, including (1) the behavior of companion animals, animals in zoos & aquaria, animals in labs, and animals in agriculture/aquaculture; (2) animal welfare, (3) ethical issues in animal use, (4) methods of training captive animals, and (5) career options and certifications in animal behavior. 3 hrs lecture. Offered periodically. Prereq: PSYC 316 or BIOL 385; PSYC 300 or BIOL 300 or PSYC 495; Senior standing or permission of instructor. Students cannot also earn credit in BIOL 483.

PSYC 489: 1-4 s.h.**Honors Course**

For the definition of departmental honors and eligibility, refer to the Academic Policies section of this catalog.

PSYC 490: 1 s.h.**Honors Seminar**

Examination and discussion of current research issues in psychology. May be taken a maximum of three times. Enrollment limited to students with at least 45 s.h. who are applying to the psychology department honors program and to those already admitted to that program. Offered in fall, spring. Prereq: permission of instructor.

PSYC 495: 1-6 s.h.**Directed Projects in Psych**

Supervised field experience involving the application of psychological principles. Junior or senior standing. Offered in fall, spring. Prereq: permission of instructor. Insurance and recent clearances (Act 34/ Act 151/FBI clearances and TB test results) may be required depending on the setting.

PSYC 496: 1-4 s.h.**Topics In Psychology**

Detailed investigation of a topic of current research interest. Topic to be announced each time course is offered. Credit and meeting hours variable, depending on topic offered. May be taken more than once for credit as topic varies. Offered periodically. Prereq: junior or senior standing and permission of instructor.

PSYC 498: 1-4 s.h.**Independent Study in Psych**

For further information on independent study, see the Special Academic Opportunities section of this catalog.

PSYC 499: 1-4 s.h.**Departmental Honors**

For the definition of departmental honors and eligibility, refer to the Academic Policies section of this catalog.

PSYC 505: 3 s.h.**Recent Developments in Psych**

Contemporary issues in psychology examined through a critical review of current research, theory and practice. Designed to provide students with opportunities for independent study in areas where basic competencies are weak, or in areas of special interest. Offered periodically.

PSYC 511: 3 s.h.**Substance-Related Disorders**

Focus on current treatment approaches to substance-related disorders. Following a review of specific psychoactive drugs and their impact on physical and psychological function, theoretical orientations and their application to clinical scenarios will be discussed. Diagnostic issues, assessment techniques and currently accepted intervention techniques will be covered. Special populations involving gender, ethnicity, sexual orientation and comorbidity will be highlighted. Offered periodically.

PSYC 515: 3 s.h.**Physiological Psychology**

A systematic examination of the nervous and sensory systems and their regulation of human behavior. Basic knowledge of biology and chemistry is essential. Offered annually.

PSYC 517: 3 s.h.**Tests and Measurements**

Introduction to basic principles of psychological testing and measurements. Issues in test construction and design, evaluation of psychometric properties, and applications of tests in various fields of psychology. Offered annually.

PSYC 525: 3 s.h.**Advanced Child Psychology**

In-depth examination of human development, with emphasis on birth through adolescence. Presentation of current accounts characterizing development in various domains (physical, cognitive, social, moral, psychosexual) and critical reviews of theoretical attempts to explain the process of development. Offered annually.

PSYC 526: 3 s.h.**Advanced Adolescent Psychology**

Personal and environmental forces that are dynamic in the behavior of adolescents. Emphasis is given to the family, school and community aspects of adolescent behavior. Recent developments in adolescent psychology and adolescent development are emphasized. Offered annually.

PSYC 527: 3 s.h.**Childhood Disorders**

Childhood Disorders provides an in-depth look at psychological disorders that occur in childhood. Students will learn the diagnostic criteria, etiology and developmental progression of childhood disorders. Students will also be exposed to assessment techniques that can be used to diagnose the disorders such as observation and data collection systems. An overview of interventions used in childhood will also be presented and students will learn how to identify empirically based interventions.

PSYC 530: 3 s.h.**Child Development within the Family System**

Theory and research on the development of cognitive, emotional, linguistic, psychosexual and moral systems in the child. Emphasis on the impact of family structure and dynamics on the developing child.

PSYC 536: 3 s.h.**Applications of Biopsychology**

Survey of current topics. Includes psychotropic drugs, neuropsychological assessment and treatment. Emphasis on clinical applications and knowledge base to enable referrals/coordination with related psychiatry/neurology professionals.. Offered annually.

PSYC 537: 3 s.h.**Ethics and Professional Practice**

This course combines ethics education with an introduction to clinical psychology and counseling. Ethical standards of psychologists and counselors and an ethical decision-making model will be applied to moral ethical and legal dilemmas in clinical practice. The historical development of clinical psychology, its major theoretical perspectives and empirically supported treatments will be reviewed. Offered annually.

PSYC 540: 3 s.h.**Applied Behavior Analysis in a MTSS**

Student behavior, both behavioral and academic, is a function of school, classroom, and individual factors. This course will focus on the impact of behavioral interventions delivered using multi-tiered system of supports (MTSS) and positive behavioral interventions and supports (PBIS) frameworks. Applied behavioral analysis will be thoroughly covered. Students will conduct single subject design research to determine the effectiveness of empirically based interventions on a child's behavior. School-wide behavior supports, as well as classroom management strategies, which impact on student discipline, will also be reviewed. Classroom behaviors will be examined within the context of the culture of the school and the community in which the school resides. This course is geared towards educators who consult with school personnel to solve educational problems, e.g., school psychologists and school counselors. The content will be useful, however, for professionals who work to increase functional behaviors in their clients. Offered in fall.

PSYC 546: 3 s.h.**Learning Theory**

Review of behavioral approaches to learning such as operant and classical conditioning, and observational learning. Cognitive and ethological challenges to behavioral theories will be considered. Includes information-processing models of learning.

PSYC 547: 3 s.h.**Applied Social Psychology**

Examines the effects of social psychological factors on various clinical issues, including racial-ethnic and cultural issues, the development and maintenance of maladaptive behaviors, clinical judgment, relationship between clinician/school psychologist and client, and the outcome of intervention. Offered in fall.

PSYC 586: 1-4 s.h.**Topics in Psychology**

Investigate and develop one or more topics of current interest not normally covered in regular psychology courses. Special topics and methods used to investigate the topics will vary according to the needs of psychology students and faculty. Offered periodically.

PSYC 587: 1-4 s.h.**Topics in Psychology**

Investigate and develop one or more topics of current interest not normally covered in regular psychology courses. Special topics and methods used to investigate the topics will vary according to the needs of psychology students and faculty. Offered periodically.

PSYC 588: 1-4 s.h.**Topics in Psychology**

Investigate and develop one or more topics of current interest not normally covered in regular psychology courses. Special topics and methods used to investigate the topics will vary according to the needs of psychology students and faculty. Offered periodically.

PSYC 589: 1-4 s.h.**Topics in Psychology**

Investigate and develop one or more topics of current interest not normally covered in regular psychology courses. Special topics and methods used to investigate the topics will vary according to the needs of psychology students and faculty. Offered periodically.

PSYC 600: 3 s.h.**Professional Seminar**

The philosophy, administrative arrangements, responsibilities and general functions of a school psychologist. Emphasis on research information relating to skills and techniques used by psychologists in the prevention and remediation process as they apply to schoolchildren. Firsthand experience in the functions of a school psychologist through field visitations and planned seminars. Schedule near the beginning of the program. Offered annually.

PSYC 612: 3 s.h.**Research Design & Statistical Analysis**

This course is designed to develop and extend skills in the interpretation of psychological research. Understanding the relationships between research methods, statistical procedures and interpretation is emphasized. Offered in fall and spring.

PSYC 625: 3 s.h.**Human Growth and Development**

A comprehensive study of growth and development with a life-span perspective. Physical growth and maturation, social development, emotional and personal development, and cognitive development. Special projects in the field of student's interest. Offered annually.

PSYC 626: 3 s.h.**Trauma Treatment**

Provides an overview of the conceptual and empirical foundations of post-traumatic stress disorder (PTSD), the neurobiology of stress and an overview evidence-based trauma treatments. Protocols for trauma assessment, cognitive-behavioral and contextual case formulation and treatment methods will be reviewed. Strategies for psychoeducation, treatment engagement, emotional regulation, exposure and relapse prevention will be emphasized.

PSYC 630: 3 s.h.**Group Work: Theory & Intervention**

Reviews major theories of group therapy and concepts related to group formation and dynamics. Develops skills through role playing interventions from diverse schools of group therapy. Reviews current research on the effectiveness of support, counseling and therapy group treatment for various mental health and/or substance use disorders. (Offered fall and spring)

PSYC 631: 3 s.h.**Psychotherapy and Intervention Skills**

Intensive supervised training in effective helping skills, including listening and responding skills, relationship enhancement, interview skills and active interventions. Students receive supervision of videotaped counseling with clients.

PSYC 632: 3 s.h.**Group Cnslng and Psychotherapy**

Development of skills and awareness necessary for successful functioning as a facilitator of groups or as a group leader. Methods include participation in an encounter group, role playing, analyses of nonverbal communication, and reflective listening. Offered annually.

PSYC 633: 3 s.h.**Systems of Psychotherapy**

Reviews the major paradigms in psychotherapy using a trans-theoretical model. Major paradigms include: psychoanalytic/psychodynamic; person-centered/existential; behavioral; cognitive; cognitive-behavioral; systems; gender sensitive, multicultural and third wave therapies. Application of theories through self-analysis and case studies will be emphasized along with the stages of change model and current research on the efficacy of these therapies.

PSYC 634: 4 s.h.**Child Psychopathology and Intervention**

Introduces students to child and adolescent psychopathology and therapeutic interventions used with children and adolescents. Play therapy techniques with clinical child populations, process groups with adolescents and preadolescents, behavioral group therapy, adjunct parent counseling and cognitive-behavioral procedures are emphasized. Offered in summer.

PSYC 635: 3 s.h.**Psychopathology**

Develops the ability to diagnose in traditional nosological fashion and to be able to discriminate from one another the various mental disorders contained in the DSM-IV. In addition to requiring the ability to diagnose the mental disorders, students will also be required to write diagnostic reports using DSM-IV multiaxial system. Offered annually.

PSYC 636: 3 s.h.**Cognitive Therapy**

Basic principles and clinical applications of cognitive therapy. Use of role play, audiotapes and videotapes to help others identify and restructure thinking patterns and beliefs that contribute to personal and interpersonal conflicts and psychological disturbances. Offered annually.

PSYC 637: 3 s.h.**Theories of Family Dynamics**

Reviews major systems of family therapy including structural, strategic, systems-based and other approaches and their application to a range of clinical and family development issues. Normal and dysfunctional family development, structure, roles, boundaries and functioning will also be reviewed. Prereq: Graduate program admission. Offered in summer.

PSYC 638: 3 s.h.**Cognitive Behavioral Therapies**

Review models of common clinical problems and specific cognitive, behavioral and integrative techniques. Role play, videotape, in-class demonstrations and case materials will be used to provide hands-on experience. Students will incorporate cognitive-behavioral perspectives and interventions with clients. Offered annually.

PSYC 639: 3 s.h.**Selected Therapies: Existential and Humanistic Therapies**

Surveys conceptual foundations and methods of classic and contemporary humanistic and existential psychotherapies and their practical application and implementation with a variety of clinical populations and presenting issues/needs. Students will employ this knowledge/perspective in case conceptualization and treatment planning, engage in case discussions and skills practice, explore supporting research and practical considerations, and critically examine implications for effective, sustainable, and contextually- and culturally-sensitive therapeutic practice. Prereq: Passed CCEs, PSYC 631 (for Clinical Psychology students) or instructor permission (for Social Work graduate students).

PSYC 646: 3 s.h.**Consultation**

Explores the theoretically and practically applied aspects of consultation. School, instructional, behavioral, conjoint-behavioral, mental-health/consultee-centered, multicultural, and organizational models of consultation and coaching, as well as teleconsultation strategies, will be covered. Students will develop and implement individual consultation projects. Offered in fall.

PSYC 670: 4 s.h.**Clinical Interviewing and Appraisal Skills**

Development of competencies in evidence-based interviewing and observation skills and in administration, scoring, interpretation, and application of diagnostic measures, mental status exams, and risk assessments. Students also are introduced to selected cognitive, personality, and behavioral assessment instruments. Students receive supervision of recorded sessions with clients and report writing. Insurance required and must pass CCE to enroll.

PSYC 671: 3 s.h.**Cognitive Achve & Adapt Assess**

Introductory course in individual psychological evaluation, stressing practical experience in administering and interpreting individual psychological test batteries. Standardized intelligence tests are emphasized. Introduces special-purpose tests such as adaptive behavior assessment and brief achievement tests. Students administer tests and write reports under supervision. Prereq: Pass Core Competency Exams (CCE) and Insurance required. Offered in fall and spring.

PSYC 672: 3 s.h.**Academic Assess & Intervention in MTSS**

Prepare students to assist schools in the provision of appropriate academic programming for children within the context of current federal and state regulations. A multi-tiered system of academic service delivery will be used as a framework for developing appropriate assessments. Students will learn to conduct assessments that answer academic referral questions, inform intervention design, and measure intervention integrity and effectiveness. Ecological and direct assessments will be discussed in depth. Solution-focused report writing skills utilizing an RTI/MTSS approach will be introduced and developed. Offered annually.

PSYC 673: 3 s.h.**Personality Assessment**

An introduction to the administration, scoring, interpretation and application of personality-assessment instruments. Introduces objective tests, projective tests and behavioral assessment.

PSYC 674: 3 s.h.**Assessment of English Language Learners**

A multicultural-issues class with focus on assessment and classification of culturally and linguistically diverse children. Prepares school psychologists and practitioners in the mental-health field to work with English language learners, make educational recommendations and help determine the extent to which child learning difficulties are related to limited English proficiency, cultural/ecological factors or learning disabilities. Learn assessment techniques, skills and strategies to be used with English language learners.

PSYC 675: 3 s.h.**Behavioral Assessment Child/Adolescent**

This course is designed to develop skills in conducting assessments and developing treatment recommendations for students referred for behavioral/emotional difficulties. The purpose of this course is to provide training in the techniques of behavioral assessment including direct observation, interviews, checklists, rating scales, self-monitoring and other methods of assessment. A tiered model of service delivery will be used as a larger context for discussing assessment methods that may be used for universal screening and more individualized assessments.

PSYC 679: 1-4 s.h.**Experimental**

Experimental

PSYC 682: 1-6 s.h.**Internship In Psych**

Supervised internship in a field agency, hospital or clinic. Designed to develop the student to a point of entry-level skills in the areas of assessment, counseling and staff participation. Students meet regularly with departmental supervisor. Schedule near end of program. The course must include 600 hours of supervised clinical experience. Experience must meet following guidelines: 30-40 hours per week across a three month period OR 15-30 hours per week across a six month period.

PSYC 685: 3 s.h.**Practicum and Seminar in School Psychology**

Sequential, supervised experiences in field settings working with children of preschool and school age. Students complete a comprehensive case study. Students meet regularly with University supervisor both individually and in seminars. Offered annually.

PSYC 686: 3-9 s.h.**Internship and Seminar in School Psychology**

Yearlong, extensive supervised clinical and field experiences in all domains of school psychology. Students meet regularly with University supervisor both individually and in seminars. Schedule in last year of program. Offered annually. Pre-requisites: All other M.S., Psychology, School coursework and Ed.S. coursework must be completed before internship. Professional liability insurance required. Updated clearances (ACT 34/ACT114/ACT151 and TB test results), which must be valid for the entire semester, must be on record with Field Services by the deadline. Follow the submission procedure and deadlines outlined by Field Services or you will be dropped from the class.

PSYC 691: 1-3 s.h.**Ind Stdy:****PSYC 696: 3 s.h.****Research Methods in Psychology**

Introduction to, and application of, advanced methods of psychological research. Emphasis placed upon the development and practice of research skills as preparation for conducting original research for a thesis.

PSYC 699: 3,6 s.h.**Thesis:**

Student designs and conducts research in an appropriate area in psychology. The results and interpretation are presented in a written thesis. The entire process is guided by the research adviser.

PSYC 799: 3,6 s.h.**Pract Supervision**

Field experience in the various activities performed by supervisors of psychological services. The student plans a relevant program of practical experiences, based on the comprehensive role of the supervisor of psychological services, in conjunction with the University supervisor.

Reading (RDED)

RDED 620: 3 s.h.**Current Practices in Literacy Education**

Current trends and appropriate pedagogy in the teaching of literacy processes, including reading, writing and speaking in the Pre-K through Grade 8 classroom. Content consistent with the Pennsylvania Standards for Reading, Writing, Speaking and Listening and the Common Core State Standards. Offered annually.

RDED 621: 3 s.h.**Foundations of Reading and Writing**

Emergent literacy, vocabulary development, comprehension instruction, assessment techniques and the reading/writing needs of both the exceptional and the culturally diverse learner. Offered annually.

RDED 622: 3 s.h.**Reading and Writing in the Content Areas**

Discussion of strategies and techniques for enhancing comprehension, concept and vocabulary development, and study skills in the content areas. Offered annually.

RDED 623: 3 s.h.**Diag. of Reading & Writing Disabilities: Practicum**

Laboratory course interpreting psychological, sociological and educational factors affecting the reading process. A case study will be developed for identifying and analyzing reading disabilities. Prereq: RDED 621 and 622. Offered annually.

RDED 624: 6 s.h.**Diag and Correction of Reading and Writing Diff**

Course focuses on procedures and materials for prevention and correction of reading difficulties, evaluation of pupil progress and differentiation of instructional techniques. Prereq:RDED 623. Offered in summer.

RDED 625: 3 s.h.**Psych & Social Factors in Reading & Writing Ability**

Discussion of psychological, social and health factors that influence reading and writing ability; theories and practices of teaching reading to culturally diverse individuals; and the role of the reading specialist in the planning and implementation of a schoolwide reading program. Prereq: RDED 623. Offered in fall and summer.

RDED 626: 3 s.h.**Literacy Leadership**

Course focuses on the role of the reading specialist as a literacy leader. Topics will include theoretical orientations, the observation and supervision of reading, principles of staff development, principles of coaching and leadership practices. Prereq:RDED 621 and 622. Offered in spring.

RDED 627: 3 s.h.**Sp Top:**

In-depth investigation and development of an area of current reading interest not normally covered in regular courses. Topics covered and methods used will vary according to needs of students and faculty involved. Course instructors include staff, national reading authorities and area reading personnel. Offered periodically.

RDED 628: 3 s.h.**Sp Topics:**

In-depth investigation and development of an area of current reading interest not normally covered in regular courses. Topics covered and methods used will vary according to needs of students and faculty involved. Course instructors include staff, national reading authorities and area reading personnel. Offered periodically.

RDED 629: 3 s.h.**Special Topics in Reading**

In-depth investigation and development of an area of current reading interest not normally covered in regular courses. Topics covered and methods used will vary according to needs of students and faculty involved. Course instructors include staff, national reading authorities and area reading personnel. Offered periodically.

RDED 630: 3 s.h.**Sp Top:**

In-depth investigation and development of an area of current reading interest not normally covered in regular courses. Topics covered and methods used will vary according to needs of students and faculty involved. Course instructors include staff, national reading authorities and area reading personnel. Offered periodically.

RDED 699: 3,6 s.h.**Thesis**

Each student writes and orally defends an individual thesis of some significance in the field of reading education. Prereq:24 graduate s.h. Offered periodically.

RDED 798: 3 s.h.**Advanced Theories Pedagogy of Reading**

Advanced theoretical pedagogy of reading and the supervision of literacy instruction. Principles of supervision and progressive discipline; principles of staff development and evaluation of staff development; curriculum auditing practices. Site-based supervision of staff development and coaching. Prereq: EDSU 700, 701 and 703. Offered periodically.

RDED 799: 3,6 s.h.**Applied Supervision: Clinical Practicum**

Supervision of teachers working in a classroom and in a reading clinic, complete with observations and follow-up conferences. Written case reports on teachers supervised will be required. Prereq: EDSU 700, 701 and 703. Offered periodically

Respiratory Therapy (RESP)

RESP 410: 2 s.h.**Acute Cardiopulmonary Care**

This course is designed to give the student a complete understanding of artificial airways, manual artificial ventilation methods, and cardiopulmonary resuscitation. A basic study of cardiac physiology and electrocardiograph interpretation will be discussed. Integrated lecture/lab. Prereq: BIOL 356, for the B.S. in biology; BIOL 254 and BIOL 255 for the B.S. in allied health technology. Basic Life Support for Healthcare Providers, for both programs.

RESP 411: 2 s.h.**Respiratory Care Techniques 1**

A study of the basic techniques of respiratory care, including professional organizations, ethics, legal aspects, aerosol pharmacology, lung hyperinflation therapy and basic diagnostic appliances. Integrated lecture/lab. Prereq: BIOL 356 for the B.S. in biology; BIOL 254 and BIOL 255 for the B.S. in allied health technology.

RESP 412: 3 s.h.**Principles of Aerosol & Gas Therapy**

A study of medical gas therapy, bland and pharmacologic aerosol administration, and related theory guides the learner in making sound judgments in their application. Particular attention is given to the operating principles of the devices used in this therapy and their use and maintenance. Integrated lecture/lab. Prereq: BIOL 356, CHEM 112, and PHYS 131 for the B.S. in biology; BIOL 254 and BIOL 255, CHEM 103 and CHEM 104, and PHYS 131 for the B.S. in allied health technology.

RESP 413: 4 s.h.**Respiratory Assessment & Therapeutics**

The lungs and chest wall are studied to gain an understanding of breathing mechanics in health and disease. Therapeutic measures are considered as to their value in reducing the work of breathing imposed by disease. Each student learns to examine the pulmonary patient and to integrate and evaluate the findings. Bronchopulmonary hygiene, chest physical therapy techniques and an overview of pulmonary rehabilitation are introduced and discussed. Prereq: RESP 411, RESP 412.

RESP 414: 3 s.h.**Respiratory Care Techniques 2**

The chest-imaging component prepares the student to evaluate chest X-ray films and to recognize and track the progression/resolution of abnormalities. CT scanning and MRI are given emphasis proportional to their utilization in chest medicine. Measurement and calculation of volume, flow rate, and ratios, and their physiologic significance, and testing procedures for performing various pulmonary function studies are included. Prereq: RESP 411.

RESP 415: 3 s.h.**Technical Aspects of Mechanical Ventilation**

The mechanics of basic models: Discussion includes the mechanics of ventilator models classification, the control interrelation, the electro-pneumatic/ microprocessor systems and the audiovisual alarm systems; a selection of current ventilator models are presented using workshops to provide hands-on experience in troubleshooting, setup, control function, alarm setting and mode change. Prereq: RESP 421.

RESP 417: 3 s.h.**Respiratory Care Techniques 3 (W)**

The course provides an overview of cardiovascular physiology, management of invasive monitoring catheters, calculation of all commonly used mechanics, and interpretation of data in pathologic states. Also, each student researches, prepares a journal-quality paper and presents a 40-50- minute verbal presentation on a selected pulmonary disease condition. Prereq: ENGL 110, RESP 414.

RESP 419: 2 s.h.**Respiratory Care in Alternate Sites**

Alternate sites for respiratory care are studied to give the students a better understanding of the career opportunities within their reach. The students will understand their role as respiratory therapists in the home care, subacute care and pulmonary rehabilitation settings. Lecture, guest speakers, a camp experience, a one-day site visit and in-class presentations are included. Prereq: RESP 413.

RESP 420: 3 s.h.**Arterial Blood Gas Analysis**

The physiologic role of various gas pressures (alveolar gas pressures, blood gas pressures, inspired gas pressures, tissue gas pressures, etc.) and pulmonary abnormalities causing hypoxemia are discussed. Control of ventilation, oxygen transport (including oxygen content and oxygen dissociation curve) and carbon dioxide transport are presented. The student will interpret acid-base imbalances and blood gas abnormalities. Prereq: CHEM 112 and PHYS 131 for the B.S. in biology; CHEM 103 and CHEM 104 and PHYSICS 131 for the B.S. in allied health technology.

RESP 421: 2 s.h.**Physiology of Mechanical Ventilation**

Aspects of continuous positive and negative pressure breathing are discussed. Special emphasis is placed on the complications of mechanical ventilation and analysis of various waveform patterns produced by different ventilator modes. Theory and measurement of airway resistance and lung thorax compliance are presented. The student learns guidelines and calculations for correct ventilator setup. Prereq: RESP 411 and RESP 420.

RESP 422: 2 s.h.**Pharmacology**

A concise core of pharmacologic knowledge that will be used by the respiratory therapist to understand how chemical agents affect disease processes. Emphasis is placed on the chemical and molecular structures, toxic aspects, actions and hazards of drugs. Prereq: CHEM 112 for the B.S. in biology; CHEM 104 for the B.S. in allied health technology.

RESP 423: 2 s.h.**Infectious Diseases**

Infectious diseases resulting in respiratory infections, host defense mechanisms, the immunology of the respiratory system and temporary or permanent failure of many protective mechanisms of the body to ward off infectious agents. Fluid and electrolyte management is stressed. Prereq: BIOL 461.

RESP 424: 2 s.h.**Non-Infectious Diseases**

Diseases of the airway, parenchyma and pleura are covered in an assessment-based format to understand the etiology, diagnosis, treatment and management of patients with noninfectious pulmonary diseases. Prereq: RESP 413.

RESP 425: 2 s.h.**Neonatology for the Respiratory Therapist**

Uterine development of the embryo is discussed with emphasis on the fetal pulmonary system. The respiratory and circulatory changeover of the neonate at birth is studied. Temperature regulation, signs of respiratory distress, oxygen administration, arterial blood analysis, congenital abnormalities and disease states are studied with respect to the newborn. Prereq: BIOL 356 or BIOL 254/255.

RESP 460: 1 s.h.**Clinical Practice 1**

The student will complete three diagnostic lab units and three clinical skills lab units in general care therapeutics and general care patient management. Upon successful completion of each of the skills labs, the student will be scheduled for a clinical practice rotation in patient care. The students are assigned to a clinical preceptor to observe/practice/develop competency in their newly acquired clinical skills. Prereq: admission to the Program in Respiratory Therapy.

RESP 461: 2 s.h.**Clinical Practicum 1**

This course provides a 60-hour supervised clinical experience for each student enrolled. It immediately follows the completion of RESP 460, in which all of the general patient-care skills were presented, practiced in simulation, observed in patient care and practiced on patients. The expectation is that each student will progress to mastery in the assigned general patient-care clinical skills. The former 40 hours will be devoted to supervised practice, and the latter 20 hours will consist of further practice, with a focus on skill assessment through direct observation by a regular faculty member. Prereq: RESP 460.

RESP 462: 1 s.h.**Clinical Practice 2**

The student will complete three clinical skills lab units in critical care therapeutics and critical care patient management, and three diagnostic lab units. The format for each of these labs is similar to that of RESP 460. Upon successful completion of each of these labs, the student will be scheduled for a clinical practice rotation in patient care. The students are assigned to a faculty member to observe/practice/achieve competency in their newly acquired clinical skills. Prereq: RESP 461.

RESP 463: 3 s.h.**Clinical Practicum 2**

This course provides a 120-hour supervised clinical experience for each student enrolled. It immediately follows the completion of RESP 462, in which all of the critical-care patient-care skills were presented, practiced in simulation, observed in patient care and practiced on patients. The expectation is that each student will progress to mastery in the assigned critical-care patient-care clinical skills. The former 100 hours will be devoted to supervised practice, and the latter 20 hours will consist of further practice, with a focus on skill assessment through direct observation by a faculty member. Prereq: RESP 462.

RESP 464: 10 s.h.**Clinical Practicum 3**

This course provides a 600-hour supervised clinical experience for each student enrolled. The final semester of the program is devoted to refinement of all skills through practicing a great variety of equipment and procedures. Advanced techniques and procedures are stressed. A total of 16 structured weeks of clinical experiences is offered at contracted affiliated regional hospitals and medical centers. Students will accomplish learning objectives while assigned to various content experts and specialists. The focus is on pulmonary rehabilitation, home care, sleep medicine, pulmonary diagnostics, neonatal/pediatric critical care, advanced airway care, pulmonary medicine and adult critical care patient management. Each rotation area is complete with schedules, content outlines, specific learning objectives and assignments to be completed by the student. Prereq: RESP 463.

RESP 495: 2 s.h.**Respiratory Care Research**

Each student selects, designs and conducts a research project, individually or with a research partner. The project culminates in a verbal presentation of the research and a manuscript from each student suitable for publication. Each project is assigned a faculty adviser to oversee and guide the research. Prereq: permission of program director.

School Counseling (SCCN)

SCCN 525: 3 s.h.**Intro to Professional School Counseling**

This course provides a broad introduction to the field of professional school counseling, covering such topics as the roles, responsibilities, functions and practices of a professional school counselor particularly in connection to the development, implementation and evaluation of a comprehensive school counseling program.

SCCN 586: 3 s.h.**Topics In Counselor Education**

Offered infrequently.

SCCN 587: 3 s.h.**Topics In Counselor Education**

Offered infrequently

SCCN 612: 3 s.h.**Study Of the Individual**

A case study with self as subject provides the opportunity for students to increase their understanding of complex human behavior. Through synthesis and organization of a great deal of information about self comes the basis for study and understanding of others. Prereq: degree program admission. Offered in spring.

SCCN 621: 3 s.h.**Counseling Theory and Practice I**

Presentation of basic counseling principles and theories. Through the use of role play, audiotapes and videotapes, students will develop skills basic to the helping process. Prereq: degree program admission. Offered in fall.

SCCN 622: 3 s.h.**Group Procedures in Counseling**

Principles and methods of group theory, process and leadership skills for planning and facilitating small counseling groups in schools. Participation in a psychoeducational group is required. Prereq: SCCN 621. Offered in spring.

SCCN 625: 3 s.h.**Ethics School Counseling**

This course engages students with important Ethical Codes of the profession of School Counseling including the American Counseling Association (ACA) and the American School Counselor Association (ASCA), while orienting students to broad concepts of professionalism, bounds of practice, and ethical-decision making models. Students will explore Federal and State case law, ethical dilemmas, and case studies which help undergird the consideration and development of standards of best practice within the school counseling profession. Historical perspectives on legal and ethical practices in the field will be offered, and the development of standard of best practice and functioning will be initiated.

SCCN 630: 3 s.h.**Multicultural Counseling**

The problem of counseling for a culturally diverse population is examined within a broad conceptual framework of issues and concepts. Methods and implications for counseling clients of various global backgrounds are studied. Prereq: SCCN 621. Offered in fall and summer.

SCCN 631: 3 s.h.**Appraisal Techniques for Guidance Purposes**

Development of competency in the effective administration, interpretation and communication of test results. Focus is on the theoretical, technical and practical aspects of individual and group tests, screening devices, interviews and observations. Emphasis is on the counselor as a consumer within the school guidance program. Prereq: SCCN 621. Offered in spring.

SCCN 641: 3,6 s.h.**Internship: Higher Ed & Comm**

Field experiences for students interested in higher education and community agencies (300 hours) and/or for students who are considering pursuing licensure as a Licensed Professional Counselor (LPC): individual supervision and seminar sessions. This course does not serve as a substitute for SCCN 675. Prereq: SCCN 674 and permission. Offered in spring.

SCCN 645: 3 s.h.**Career Development**

Historical and theoretical foundations of the evolution of vocational guidance into career guidance and counseling are studied. Models, materials and strategies basic to career guidance and counseling programs are emphasized. Offered in fall and summer.

SCCN 651: 3 s.h.**Theory and Practice 2**

This second-level skills course provides supervision of videotaped sessions with a child client. Prereq: SCCN 621. Offered in spring.

SCCN 657: 3 s.h.**Brief Counseling**

This is a third-level skills course which includes brief solution-focused theory applied to ongoing counseling work with a child client and supervised using videotaped sessions. Strategy selection and implementation are emphasized. Conceptualization, general principles and applications in crisis counseling are included. Prereq: SCCN 651 and passing CCE. Offered in fall.

SCCN 665: 3 s.h.**School Counseling Practicum**

Supervised field experience which familiarizes students with the practice of professional school counseling. Students will gain exposure to children at a variety of developmental levels, and will be required to log a minimum of 100 hours of direct experiences in a school counseling setting. Offered in fall or spring.

SCCN 671: 3 s.h.**Guidance Program Development**

Guidance programs based on a developmental, comprehensive and team approach. Primary prevention is the focus of the model used to facilitate program implementation in the elementary and secondary schools. Offered in fall.

SCCN 675: 3,6 s.h.**Internship 1: School Counseling**

Guidance and counseling experiences in the school setting (420 hours): individual supervision and seminar sessions. Prereq: SCCN 674 and permission. Offered in spring.

SCCN 676: 3,6 s.h.**Internship 2: School Counseling**

Counseling experiences in school and/or a community agency (300 hours) for students who are considering pursuing licensure as a Licensed Professional Counselor (LPC): individual supervision and seminar sessions. Prereq: SCCN 674 and permission. Offered in spring.

SCCN 691: 1-3 s.h.**Independent Study**

An in-depth approach to an individually structured problem. By permission.

SCCN 699: 3 s.h.**Thesis**

Each student writes and orally defends an individual thesis of some significance in the field of counselor education.

SCCN 799: 3,6 s.h.**App Supv: Sccn**

Provides prospective supervisors with actual field experience in auditing current comprehensive developmental guidance programs and initiating action plans for subsequent program improvement, including performance-based assessment of school counselors. The American School Counselor Association National Model provides guidelines for the supervision. (See Supervisory Certification Program section.)

Secondary Ed Courses (EDSE)

EDSE 179: 3 s.h.**Experimental**

Experimental

EDSE 279: 3 s.h.**Experimental**

Experimental

EDSE 300: 3-12 s.h.**Co-Op Ed Experience in EDFN**

Co-Op Ed Experience in EDFN

EDSE 321: 3 s.h.**Issues in Secondary Education**

Examines the role of the secondary teacher, issues encountered in the classroom and classroom interactions. Includes field experiences. Offered in fall, spring. Prereq: EDFN 211, 241. Admission to advanced professional studies. Must be taken simultaneously with professional bloc. Professional bloc field experience includes approximately 150 hours in schools.

EDSE 321H: 3 s.h.**H: Issues in Second Education****EDSE 340: 3 s.h.****Content Area Literacy for Diverse Classrooms**

Students are offered opportunities to explore research-based strategies for effectively teaching in inclusive multilingual settings. Instructional best practices will be presented as they relate to differentiating instruction for the plethora of diverse needs in modern-day classrooms. There will be a strong focus on exploring and reflecting on methods that are aimed at helping students gain proficiency in reading and writing as a means of accessing and interacting with the curriculum. Assessment will be explored, as it offers critical insights for informed and targeted decision-making. Admission to advanced professional studies. Taken with professional bloc. Professional bloc field experience includes approximately 150 hours in schools.

EDSE 379: 3 s.h.**Experimental**

Experimental

EDSE 400: 3-12 s.h.**Co-Op Ed Experience in EDFN**

Co-Op Ed Experience in EDFN

EDSE 433: 3 s.h.**Teaching of Secondary Social Studies**

Consideration of the goals of social studies in secondary schools; materials, instructional methods and strategies; recent developments; and field experiences. Offered in fall, spring. Prereq: EDFN 211, 241. Admission to Advanced Professional Studies. Taken with professional bloc. Professional bloc field experience includes approximately 150 hours in schools.

EDSE 435: 3 s.h.**Teaching of Science in Secondary Schools**

Current initiatives in science education; state standards in science/technology and environment/ecology, creativity, effective demonstrations, lab work and short/long-range planning. Opportunities for realistic teaching and field experiences. Offered only in fall. Prereq: EDFN 211, 241. Admission to Advanced Professional Studies. Taken with professional bloc. Professional bloc field experience includes approximately 150 hours in schools.

EDSE 471: 3 s.h.**Student Teaching Seminar**

This course, taken in conjunction with Student Teaching, is for all secondary content and preK-12 BSE and PK-12 Special Education programs. This course will provide teacher candidates with the ability to develop and apply their knowledge, skills, and dispositions in accommodating instruction for English Language Learners and students with disabilities. Candidates will design, implement, and assess intervention plans and differentiated instruction techniques according to established federal mandates and state standards. Candidates will demonstrate sensitivity and competence in adapting lesson plans, addressing literacy in content area courses, modifying assessments, helping students acquire academic language, contribute to multidisciplinary teams and co-teach.

EDSE 479: 3 s.h.**Experimental**

Experimental

EDSE 521: 3 s.h.**Issues in Second Education**

Examines the role of the secondary teacher, issues encountered in the classroom and classroom interactions. Open only to post-baccalaureate students who are employed as full-time teachers but have not completed certification. Offered in summer. Prereq: EDFN 211 or EDFN 590, and EDFN 241 or EDFN 545. Admission to advanced professional studies.

EDSE 540: 3 s.h.**Content Area Literacy Diverse Class**

This course offers participants opportunities to explore research-based strategies for effectively teaching in inclusive multilingual settings. Instructional best practices will be presented as they relate to differentiating instruction for the plethora of diverse needs in modern day classrooms. There will be a strong focus on exploring and reflecting on methods that are aimed at helping students gain proficiency in reading and writing as a means of accessing and interacting with the curriculum. Assessment will be explored as it offers critical insights for informed and targeted decision-making.

EDSE 572: 2 s.h.**Inquiry Inclusive Classroom Instr**

This capstone course will provide candidates the opportunity to conduct practitioner research in order to more deeply understand the relationship between inclusive practices and student engagement and achievement. Candidates will create a research study on inclusive educational practice in their own classroom including a review of literature and the collection and analysis of classroom data. Candidates will demonstrate an awareness of the systems of power that lead to discrimination such as ableism within education. Candidates will demonstrate how the outcomes of practitioner inquiry have influenced their classroom practices.

Social Sciences (SSCI)

SSCI 203H: 3 s.h.**H: Explorations in History of Ideas (G3, W)**

Topics in intellectual history, with an emphasis on the development of the "West" and its interactions with other civilizations and cultures. Required of freshman Honors students. Prereq or coreq: member of University Honors College and ENGL110H.

SSCI 212: 3 s.h.**The Black Woman (G3)**

A multidisciplinary course examining the history, sociology, anthropology and psychology of the black woman from antiquity to the present. The course will focus on the black woman in non-Islamic Africa and the United States. Offered in spring.

SSCI 212H: 3 s.h.**Hon: The Black Woman (G3)****SSCI 279: 3 s.h.****Experimental**

Experimental

Social Work (SOWK)

SOWK 102: 3 s.h.**Modern Social Welfare Dilemmas (G3)**

Introduction to social work's approach to social problems, including how public-policy decisions affect individuals and families; overview of competing public-policy agendas in social welfare and alternative strategies for problem resolution, societal values and trends affecting service delivery; understanding social work in action; examining core concepts, values and ethics.

SOWK 179: 3 s.h.**Experimental**

Experimental

SOWK 201: 3 s.h.**Social Welfare Policy and Economics**

This course offers a general understanding of economic theory as it applies to both microeconomic and macroeconomic decision making. The course comprises two major foci: 1) practical applications of decision-making paradigms for practice with individuals and families in the social work context; and 2) understanding the effects of economic conditions on social welfare policy, those who make policy and those who advocate for changes in the policy arena. Prereq: SOWK 102. SOWK majors and Social Justice minors only. Sophomore status required.

SOWK 203: 3 s.h.**Human Behavior and the Social Environment 1**

Examines the life span approach to human development, with focus on interaction between the individual's biopsychosocial functioning and the social environment. Analyzes the impact of human diversity on behavior in social situations, with particular emphasis on populations at risk. Studies how factors of human diversity affect social policy. Volunteer work required. Prereq: SOWK C or higher in 102 and sophomore status or permission of instructor. Prereq or coreq: BIOL 204, PSYC 100, SOCY 210.

SOWK 279: 3 s.h.**Experimental**

Experimental

SOWK 300: 3-12 s.h.**Co-Op Ed Experience in Sowk**

Co-Op Ed Experience in Sowk

SOWK 301: 3 s.h.**Social Work Practice 1**

Study of the wide range of activities that constitute the generalist social work approach. Designed to assist students to develop basic entry-level professional social work competencies within a systems framework. Prereq: ENGL 110. Prereq or coreq: SOWK 203, junior standing. Corequisite: SOWK 322. SOWK majors only.

SOWK 302: 3 s.h.**Social Work Practice 2**

: In-depth examination of the knowledge, values and skills that form the base of social work practice; method selection and skill development in social work intervention; practice with social work communication skills. Emphasis on practice with groups and vulnerable populations. Prereq: C or higher in SOWK 301. Corequisite: SOWK 430. SOWK majors only.

SOWK 302H: 3 s.h.**H:Social Work Practice 2****SOWK 303: 3 s.h.****Social Welfare and the Law**

Significant legislation, court decisions and regulatory language shape public social policy and affect the legal base for social work practice. Among substantive areas discussed are: family law and policy, mental health and substance abuse law and policy, constitutional and civil rights, poverty law and policy, social welfare law and policy, and professional licensing. Prereq: C or better in SOWK 102 or permission of instructor; GOVT 111 or 112; Social Work Majors or Social Justice Minors Only.

SOWK 303H: 3 s.h.**Hon: Social Welfare & the Law****SOWK 304: 3 s.h.****Sowk, Corrections & Alt Trmnt (G3)**

A general introduction to the study of the juvenile correctional system in the United States and assessment and treatment of youth who may be at risk for interacting with the system. A historical perspective of juvenile, as well as adult, corrections will be offered, along with discussions and examinations of the etiology and extent of juvenile crime as well as antecedents of violence, environmental and ecological factors for the causes of criminality, along with assessment of at risk youth and their families. A historical perspective, rehabilitation approaches, de-institutionalization, community based programs and alternatives to incarceration will be reviewed.

SOWK 305: 3 s.h.**Social Work and Child Welfare (G3)**

Concepts, policies and practices in child welfare services as a response to the needs of children and their families; focus on services designed to support, supplement or substitute for the care usually given by biological parents; social work practices and public-policy issues in foster care, adoption, day care, institutional care, protective services, teenage pregnancy and juvenile delinquency. \

SOWK 306: 3 s.h.**Social Work and Aging (G3)**

A developmental approach to the aging process as one phase of the life cycle; biological, psychological, social and economic needs of the elderly; analysis of societal provision for these needs; public-policy issues and pertinent social legislation; community-based programs of social and health services; techniques of generic social work with older persons; advocacy and policy planning for the aging. Lectures and discussion supplemented with audiovisual material, speakers and field visits as available. Volunteer experience with an older person or persons required.

SOWK 307: 3 s.h.**Social Work and Health Care (G3)**

Scope and contribution of professional social work in comprehensive healthcare settings focusing on individual and community health needs, social and behavioral aspects of illness, essential practice components and skills required of social workers, healthcare policy, issues and trends, alternative healthcare programs and research needs.

SOWK 308: 3 s.h.**Social Work & Substance Use (G3)**

Concepts, policies, issues, trends, theories and social work practice skills in settings affected by substance use. Focuses on interaction of affected individuals with others in family, social, economic, educational, legal and political systems. Examines the role of the social worker in identification, intervention and use of network of community resources.

SOWK 309: 3 s.h.**SOWK Behavior & Emotion Health**

Concepts, policies, issues, trends, and theory associated with social work, behavioral and emotional health. Focuses on interaction of affected individuals with others in family, social, economic, educational, legal and political systems. Examines the role of the social worker in identification, intervention and use of network of community resources and various practice modalities, including direct intervention as well as social policy analysis, research and prevention.

SOWK 312: 3 s.h.**SOWK & Wmn: Strgth, Need & Opp (G3, W)**

Scope and contribution of professional social work in regard to women's issues and concerns in contemporary society. Emphasis on the analysis of individual and community women's needs, the social and behavioral aspects of women's concerns, the essential practice components and skills required of social workers, social welfare policy and women, issues and trends, alternative women's programs and research needs. Prereq: ENGL 110

SOWK 313: 3 s.h.**Family Violence (P)**

Professionals and society at large have recognized violence in the family against children, spouses and the elderly as a social problem. Other emerging related issues include cross-cultural violence, partner violence in gay/lesbian relationships, courtship violence and date rape. Focus will also include theories of abuse with various populations as well as treatment approaches to the various forms of family violence. Prereq: COMM 100, ENGL 110 and junior status.

SOWK 313H: 3 s.h.**H: Family Violence (P)****SOWK 314: 3 s.h.****Global Well Being (D, P)**

This course is interdisciplinary and intercultural in nature. It is designed to prepare all students whose anticipated careers are primarily oriented to direct work with the global community, both domestically and internationally. There will be an emphasis on developing interpersonal communication skills for interacting with people whose way of life differs from one's own; developing insights into the multi-faceted issues impacting our world; and understanding global interconnection with oppression to foster social justice. The cornerstone of this course is service-learning opportunities on a local and global level.

SOWK 314H: 3 s.h.**HON:Global Well Being (D, P)****SOWK 315: 3 s.h.****Grief and Bereavement (D)**

Provide a framework for critical analysis of the dynamics of grief and bereavement. Combining a general social systems perspective, an ecological perspective, and the problem-solving approach, this course will assist students to integrate knowledge about grief and bereavement into their knowledge of practice theory and human behavior at the micro, mezzo, and macro levels. Students will appreciate the diversity of grieving practices and rituals among cultural, religious, and ethnic groups. Bereavement dynamics across the life span are addressed. The impact of death and disaster at the community level will be understood, including assessment tools and intervention strategies.

SOWK 316: 3 s.h.**Mediation (G3)**

Mediation as an alternate form of dispute resolution is continuing to rise and is being used in corporate, labor, consumer, and family issues widely across the United States. Students in the Mediation class will focus on practical and theoretical aspects of mediation and its place in the larger framework of alternate dispute resolution. Skills in helping parties find common ground, creating a climate for reaching agreement, aspects of confidentiality, and both directive and non-directive mediation techniques will be explored. Each student will have the opportunity to role play at least one brief session in the role of mediator.

SOWK 317: 3 s.h.**Perspectives on Poverty in the United States (D, P)**

Perspectives on Poverty in the United States will provide students with an opportunity to explore the dynamics of and cultural attitudes surrounding poverty in the United States. This course will provide an atmosphere conducive to critical thinking, personal reflection, and social action. The essential inquiry of the course is to task students with critical interrogation of the question "what is poverty all about?" using multiple perspectives and diverse frameworks. To do this, students will explore diverse disciplinary viewpoints, including those of sociology, social work, economics, history, and media. This course will use an historical lens to investigate cultural constructions of the problem of poverty from colonial times to present. Modern conceptualizations of poverty from the perspective of popular culture and our own families and experiences will likewise be interrogated. The primary lens of the course will be the use of personal narratives that people in poverty have written about their own experience to help students develop social empathy. Additionally, the course will task students to also explore both cultural and personal assumptions associated with poverty, a pedagogical strategy that will help poise them to begin a journey as community leaders in advancing social justice. Throughout this critical inquiry, students from all disciplines will explore the complexities of poverty and economic vulnerability, developing empathy, knowledge, and skills that will help them to become thoughtful and productive citizens in any field.

SOWK 322: 3 s.h.**Evidence-Informed Lit SOWK (W)**

Aiming to strengthen students' foundational and professional writing skills in preparation for professional social work practice, a combination of peer review processes and iterative instructor feedback is utilized to support students as they produce the course's primary product—a comprehensive literature review. Students receive instruction related to foundational writing skills and complete assignments related to writing forms required of social work professionals to increase their writing competency.

SOWK 323: 3 s.h.**Human Behavior and the Social Environment 2**

The second of two courses in human behavior and the social environment, emphasizing 1) the interaction of social and economic forces with individuals and social systems; 2) traditional and alternative theories about systems as they interact with people, promoting and impeding health, welfare and well-being, in the context of human culture and diversity; and 3) knowledge about opportunity structures and how they promote and deter human development and meeting needs. Prereq: C or higher in SOWK 203. SOWK majors or Social Justice minors only.

SOWK 330: 3 s.h.**Social Work Research (W)**

Emphasis on the scientific method in development of beginning evaluative skills that contribute to practice competence. Knowledge to evaluate critically the research findings of others; use of research methods to improve practice. Students are required to participate in a research study. Prereq: ENGL 110, SOWK 102. SOWK majors only.

SOWK 350: 3 s.h.**Encounters in Human Diversity (D, P)**

An upper-level, multicultural, interdisciplinary, interactive course designed to enhance students' knowledge, skills and values relative to working with people in professional situations within a diversity-embracing atmosphere. Focuses on the various differences in communication styles brought about by gender and culture. Designed for students whose anticipated careers are primarily oriented to direct work with people. Prereq: COMM 100, ENGL 110 and junior status.

SOWK 350H: 3 s.h.**H:Enc in Human Diversity (D, P)****SOWK 379: 3 s.h.****Experimental**

Experimental

SOWK 400: 3-12 s.h.**Co-Op Ed Experience in Sowk**

Co-Op Ed Experience in Sowk

SOWK 401: 6 s.h.**Field Instruction 1**

Supervised placement in social service agencies for 450 hours of social work practice. Malpractice liability insurance required. Prereq: 24 credit hours of social work professional courses. Prereq: C or higher in SOWK 403. Coreq: SOWK 431. SOWK majors only

SOWK 401H: 6 s.h.**Hon: Field Instruction****SOWK 402: 6 s.h.****Field Instruction 2**

Supervised placement in social service agencies for 450 hours of social work practice. Malpractice liability insurance required. Prereq: 24 credit hours of social work professional courses. Prereq: C or higher in SOWK 403. Coreq: SOWK 431. SOWK majors only

SOWK 403: 3 s.h.**Social Work Practice 3**

Theoretical aspects of the skills, knowledge and values in social work practice at the macro level involving organizations and communities. Integration of abstract knowledge with concrete experience in the field. Prereq: C or higher in SOWK 302. SOWK majors only.

SOWK 405: 3 s.h.**Human Behvr and Social Envrn 2**

The second of two courses in human behavior and the social environment, emphasizing 1) the interaction of social and economic forces with individuals and social systems; 2) traditional and alternative theories about systems as they interact with people, promoting and impeding health, welfare and well-being, in the context of human culture and diversity; and 3) knowledge about opportunity structures and how they promote and deter human development and meeting needs. Prereq: C or higher in SOWK 203. SOWK majors only.

SOWK 430: 3 s.h.**Social Work Research (W)**

Emphasis on the scientific method in development of beginning evaluative skills that contribute to practice competence. Knowledge to evaluate critically the research findings of others; use of research methods to improve practice. Students are required to participate in a research study. Prereq: ENGL 110, SOWK 102, 322. Coreq: SOWK 302. SOWK majors only.

SOWK 431: 3 s.h.**Social Work Statistics (W)**

Social work research skills values and knowledge. Research design, statistical usage and data analysis in social work practice and research. Students develop a research proposal. Prereq: SOWK 430 and ENGL 110 and MATH 100 or Gen Ed MATH. SOWK majors only.

SOWK 475: 1-6 s.h.**Special Topics in Social Work**

Advanced study of a social work practice issue. The course may be taken for credit more than one semester as topics vary. Topics may include youth violence, human trafficking, poverty and homelessness, immigration and refugee care, military social work, and rural social work issues. Offered annually with different topics.

SOWK 479: 3 s.h.**Experimental**

Experimental Course Number. Content Varies.

SOWK 489: 1-4 s.h.**Honors Course**

For the definition of honors courses/thesis and eligibility, refer to the Special Academic Opportunities section of this catalog.

SOWK 498: 1-3 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

SOWK 499: 1-4 s.h.**Departmental Honors**

For the definition of honors courses/thesis and eligibility, refer to the Special Academic Opportunities section of this catalog.

SOWK 500: 3-12 s.h.**Co-Op Ed Experience in Sowk**

Co-Op Ed Experience in Sowk

SOWK 501: 3 s.h.**Principles and Philosophies of Social Work**

Introduces the generalist model for practice, which serves as a base for subsequent social work courses and provides initial understanding of the needs and issues of special populations in relation to social welfare policies and services as well as social work practice. The course provides an introduction to the profession and the MSW program while helping to prepare students for their subsequent field placements. This course may be offered in multiple modalities.

SOWK 505: 3 s.h.**Understanding Social Work Practices w Diverse Pops**

Focuses on issues of understanding human diversity, risk, societal power and privilege, including issues related to sexism, heterosexism, classism, ageism, religion and spirituality, cultural identity development oppression, risk, resilience and empowerment. This course may be offered in multiple modalities. Prereq: SWK/SOWK 501

SOWK 510: 3 s.h.**Human Behavior in the Social Environment I**

Examines the life-span approach to human development, with a focus on the interaction between the individual's biopsychosocial functioning and the social environment. It considers the impact of micro and mezzo (i.e., families and small groups) systems on behavior, with particular emphasis given to populations considered to be at risk. This course may be offered in multiple modalities. Prereq or Coreq: SWK/SOWK 501.

SOWK 511: 3 s.h.**Human Behavior in the Social Environment II**

Explores theories for understanding the behavior of individuals, social systems and communities. It examines traditional and alternative perspectives on the political, economic and institutional environments, and critically considers opportunity structures and how they deter and promote human. Students evaluate theory and apply it to social work practice situations. This course may be offered in multiple modalities. Prereq: SWK/SOWK 510.

SOWK 515: 3 s.h.**Social Welfare Policy**

Furnishes students with the orienting knowledge and skills needed to examine social welfare policies and to understand their relevance to social service delivery and social work practice. This course may be offered in multiple modalities. Prereq: SWK/SOWK 501

SOWK 520: 3 s.h.**Micro/Mezzo Social Work Practices**

Offers opportunities for applying and studying advanced generalist practice with individuals, families and groups. Students will learn and apply skills to their specific areas of interest, which enable development of individuals, families and groups in environment processes for improving social functioning. This course may be offered in multiple modalities. Prereq: SWK/SOWK 501; Coreq: SWK/ SOWK 530.

SOWK 521: 3 s.h.**Macro Social Work Practice**

Conceptualizes macro social work as the profession that brings about social change. The course extends from understanding theories about communities and organizations to assessment and practice. Students will focus on analysis of the community as a social system, common strategies for producing change in community work, the nature of formal organizations as environments through which social services are provided in the community, and the knowledge and skills necessary to effect change within organizations. Students will examine the role of a macro social worker as program developer, program administrator and organization developer. This course may be offered in multiple modalities. Prereq: SWK/SOWK 520; Coreq: SOWK 531.

SOWK 525: 3 s.h.**Research Methods**

Introduces research concepts, procedures for conducting research and their application to social work practice. Advanced knowledge of scientific inquiry, the ethics that guide research and the roles of social workers as researchers are also covered. Both qualitative and quantitative methods of collecting and analyzing data are given major attention. Students learn the procedure for developing a research proposal. This course may be offered in multiple modalities. Prereq: SWK/SOWK 501

SOWK 530: 3 s.h.**Field Practicum I**

Provides students with practical experience (200 hours) in supervised direct-service activities across all client systems, from the individual's level to that of the community. This initial field experience allows the student to apply theory and skills acquired in the generalist foundation areas while simultaneously fostering the development of a professionally reflective, ethical, knowledgeable and self-evaluating social worker. The course also includes a seminar where students discuss and process the field experience with faculty. Coreq: SWK/SOWK 520

SOWK 531: 3 s.h.**Field Practicum 2**

Provides students with practical experience (200 hours) in supervised direct-service activities across all client systems, from the individual's level to that of the community. This initial field experience allows the student to apply theory and skills acquired in the generalist foundation areas while simultaneously fostering the development of a professionally reflective, ethical, knowledgeable and self-evaluating social worker. The course also includes a seminar where students discuss and process the field experience with faculty. Prereq: SWK/SOWK 530 Coreq: SWK/SOWK 521

SOWK 601: 3 s.h.**Integrative Seminar**

Course builds upon the foundation content from students' B.S.W. programs. It serves as a "bridge" course to integrate B.S.W. learning in preparation for M.S.W. courses. The course provides opportunities for a review of competencies and related behaviors, with a special focus on ethics, policy and research. This course may be offered in multiple modalities. Prerequisite: Advanced Standing admission status.

SOWK 602: 3 s.h.**Behavioral Health**

Enables students to understand and increase their ability to work with micro to macro aspects of mental health/mental retardation and substance abuse/dependence as bio-psycho-social-societal phenomena. This course will be offered in a blended distance education format. Prereq: SOWK 601 or completion of foundation year. Offered in spring.

SOWK 603: 3 s.h.**Gender Issues**

Provides an in-depth study of the concepts, policies, practices and research in the field of gender studies. This course will examine institutionalized gender socialization, current gender issues and controversies, feminist theory for understanding behavior, and guiding principles and practices for helping professionals. This course will be offered in a blended distance education format. Prereq: SOWK 601 or completion of foundation year. Offered periodically.

SOWK 604: 3 s.h.**Health Care**

Focuses on four content areas: 1) what the social worker's role is in different healthcare settings; 2) historic and current policies that affect healthcare services; 3) current research in various healthcare-related issues; and 4) international models of care. This course will be offered in a blended distance education format. Prereq: SOWK 601 or SOWK 531. Offered periodically.

SOWK 605: 3 s.h.**Child Welfare**

Provides an in-depth study of the concepts, policies, practices and research in the field of child welfare and family and children services. This course will provide an introduction to the child welfare field, an overview of the development of services for children, a detailed examination of the provision of services and an exploration of the ethical implications of child welfare practice. This course will be offered in a blended distance education format. Prereq: SOWK 601 or SOWK 531. Offered periodically.

SOWK 606: 3 s.h.**School Social Work**

Provides an in-depth study of the concepts, policies, practices and research in the field of school social work, examining policy, research, practice and human behavior content. This course will be offered in a blended distance education format. Prereq: SOWK 601 or SOWK 531. Offered periodically.

SOWK 607: 3 s.h.**Emergency Mental Health and Trauma**

Provides an in-depth study of the concepts, policies, practices and research in crisis intervention during disasters. This course will provide an introduction to the disaster field, a detailed examination of the human service delivery systems and guidelines for attending to the emotional and mental-health needs of both disaster survivors and responders, using the Critical Incident Stress Management model. This course is offered online. Prereq: SOWK 601 or SOWK 531 or permission of instructor. Offered periodically.

SOWK 608: 3 s.h.**Administration and Supervision**

This course is designed to expand students' knowledge of and skills in effective program management of human services organizations and to provide approaches for managing service programs effectively. Organizational and management theories and principles are applied to a range of human services. This course will provide students with an introduction to the knowledge and skills necessary to perform managerial and supervisory functions in public and private human service organizations, including those that have historically served populations at risk. It will examine the structure and processes of human service organizations, the process of management, and organization building. The course will also cover different supervisory approaches and techniques and consider supervisory challenges that arise in various practice settings. During this course, students will be provided with opportunities to build competencies.

SOWK 609: 3 s.h.**Introduction to Art Therapy**

This advanced elective course explores the principles and the techniques of art therapy and considers the usefulness of art therapy in providing alternatives and supplements to the customary verbal methods of intervention. Ways of working with clients at various stages of the life cycle, childhood through later adulthood, and with clients who are on different levels of psychosocial functioning are examined. Issues in art therapy are explored both cognitively and experientially. Previous training in the visual arts and artistic ability are not required. This course will meet 2/3 online and 1/3 in the classroom. Offered periodically. Prereq or Coreq: SOWK 601 or SOWK 531.

SOWK 610: 3 s.h.**Advanced Human Behavior in the Social Environment**

This advanced practice course, with heavy focus on clinical assessment, provides students with a conceptual framework for clinical social work practice with individuals. The course will emphasize assessing clients' systems at the micro level, with a particular focus on diagnoses, assessment and treatment of individuals. The course maintains a multicultural, strengths perspective and a focus on diversity, rural populations, and social and economic justice. This course may be offered in multiple modalities. Prerequisite(s): SWK/SOWK 531 or SWK/SOWK 601 (the latter may be taken concurrently).

SOWK 611: 3 s.h.**Children and Youth At-Risk**

This course is an in-depth study of the concepts, policies, practices and research in the field of child services, including school social work and child welfare. In addition, this course will provide a detailed exploration and understanding of a range of at-risk children and youth populations and their families. This comprehensive understanding will assist practitioners to effectively conduct an assessment and develop a treatment plan listing evidence-based intervention strategies and/or prevention programs that will effectively meet the complex needs of at-risk populations and their families. The challenges and ethical dilemmas confronting social work practitioners working with at-risk populations and their families will also be addressed. Prereq or Coreq: SOWK 521 or 601. Offered in summer.

SOWK 612: 3 s.h.**Social Work and the Law**

Social workers understand that virtually everything they do professionally in the 21st century has to include evaluations of risk, legality, funding and unintended consequences. Malpractice appropriately receives much attention in this regard, but legislative and regulatory requirements regarding funding, grants and contracts, definitions of disabilities, responsibilities of different levels of government and many other legal aspects of the profession must also be considered. For most people, law is a foreign language, and social workers need to be somewhat fluent in this language so they can deal with the convergence of law and social work, social services and social policy. This course will be offered in a blended distance education format. Prereq or Coreq: SOWK 601. Offered periodically.

SOWK 613: 3 s.h.**Mediation in SOWK Practice**

Mediation as an alternate form of dispute resolution is continuing to rise and is being used in human services, corporate, labor, consumer, and family issues widely across the United States. Students in the Mediation class will focus on practical and theoretical aspects of mediation and its place in the larger framework of alternate dispute resolution for social work clients. Skills in helping parties find common ground, creating a climate for reaching agreement, aspects of confidentiality, and both directive and non-directive mediation techniques will be explored.

SOWK 614: 3 s.h.**Survey Devel & Measurement**

This advanced course prepares students with the skills to be critical users of a variety of types of measurement instruments, as well as gain experience in the intricacies of scale development, including psychometrics. Students will examine and determine scale reliability and validity.

SOWK 615: 3 s.h.**Advanced Social Welfare Policy**

Course introduces conceptual approaches to policy analysis and assesses selected social policies, programs, and services in the areas of income maintenance, health care and personal social services in accordance with these approaches and with specific reference to their impact on special populations. This course may be offered in multiple modalities. Prerequisite(s): SWK/SOWK 531 or SWK/SOWK 601

SOWK 616: 3 s.h.**Leadership Dynamics in SW Prac**

Leadership theories and practices that are relevant to professional social work. The course prepares students for effective leadership practice in both formal leadership positions (i.e. administrative positions) and informal leadership (i.e. amongst colleagues). Students will be able to apply the course concepts to their work as advanced generalist practitioners at micro, mezzo and macro levels. Leadership issues and challenges within a multicultural context and variety of settings including nonprofit, public, for-profit, community-based, political, national and international organizations will be explored. Students will assess their own and others' leadership styles in order to build competence as leaders. Students will create an individual leadership development plan based on key leadership theories and models. Special emphasis will be placed on the need for evidence-based leadership practice and leadership for social and economic justice.

SOWK 617: 3 s.h.**Addictions in Field of SOWK**

This course will focus on the topic of addictions, preparing students to recognize and intervene when clients and their families demonstrate addictions problems in a wide range of social service agencies and host settings, such as child welfare, mental health, aging, schools, health care, corrections, and drug and alcohol programs. The course will examine the evolving models of alcohol and chemical dependency to the present day understanding of the disease model, including an examination of the neurobiology of addiction and basic pharmacology including medication assisted therapies. The concept of harm reduction is introduced. Using a case studies approach, students will develop assessment and intervention skills. The course will address professional issues including credentialing, confidentiality and ethics.

SOWK 618: 3 s.h.**Human Rights in Social Work**

This three credit advanced elective course includes the examination of the major human rights documents and their impact on social work practice as well as the exploration of strategies and techniques used in the rights-based approach in social work. This is a hybrid course that is primarily delivered on-line with some face-to-face interaction.

SOWK 619: 3 s.h.**Global Perspectives in SOWK**

Students will be exposed to global issues and understand how the institution of social welfare has developed in different regions of the world. The course examines globalization and its effect on social welfare and human need. As a way of understanding how different regions and countries have responded to human need, the course explores the specific areas of women in developing countries, street children and child labor, HIV in the developing world, and the plight of refugees. The role of international organizations, such as the World Bank, the International Monetary Fund, the agencies of the United Nations, and nongovernmental organizations (NGOs) in shaping international welfare policy and services will be examined.

SOWK 620: 3 s.h.**Advanced Practice with Groups and Families**

Course builds on the practice concepts learned during the generalist year, particularly in the SWK/SOWK 520: Micro/Mezzo Social Work Practice course. This course focuses on social work with groups and with families from a systems and ecological perspective. Emphasis is on strengths- and evidence-based family and group assessment and intervention strategies with diverse, complex families and groups. This course may be offered in multiple modalities. Prerequisite(s): SWK/SOWK 531 or SWK/SOWK 601 Corequisite(s): SWK/SOWK 630

SOWK 621: 3 s.h.**Advanced Macro Social Work Practices**

Course builds on the practice concepts learned during the generalist year, particularly in the SWK/SOWK 520: Micro/Mezzo Social Work Practice course. This course focuses on social work with groups and with families from a systems and ecological perspective. Emphasis is on strengths- and evidence-based family and group assessment and intervention strategies with diverse, complex families and groups. This course may be offered in multiple modalities. Prerequisite(s): SWK/SOWK 531 or SWK/SOWK 601 Corequisite(s): SWK/SOWK 630

SOWK 622: 3 s.h.**Military Social Work Practice**

This elective course provides students with specialized knowledge of working with military personnel, veterans and their families. Military social work is a unique service and intervention focus designed to help social workers enhance their overall knowledge and skill set in support of service women and men as well as their family and supportive care givers. Students will have opportunities to learn the history, theoretical underpinnings, and foundation and practical applications to specific client populations.

SOWK 623: 3 s.h.**Narrative Therapy**

This elective course provides students with specialized knowledge of narrative therapy in clinical social work practice. Narrative therapy is a unique intervention designed to help clients express and re-author their life stories. This course focuses on narrative therapeutic techniques applied to working with individuals, families, and groups. Students will have opportunities to learn the history, theoretical underpinnings, and foundations of narrative therapy as well as the clinical applications to specific client populations. Through interactive practice activities, including the use of case studies, film, and roleplays, students will develop an understanding of narrative therapy as an empowering approach in working with diverse populations.

SOWK 624: 3 s.h.**From Hobohemia to Housing First: A Critical Reflection of Homelessness in the United States**

Provides students with an historical overview of homelessness as a social problem in the United States. Students will examine the disparate conceptualizations of homelessness over time and the individual, community, and policy approaches intended to address it. Emphasis will be placed on contemporary issues in homelessness service delivery. This course may be offered in face/face, blended, or 100% online formats (with asynchronous and/or synchronous components). Prereq: SOWK/SWK 601 or SOWK/SWK 531. Offered periodically.

SOWK 625: 3 s.h.**Advanced Research Methods**

The focus of this course is on social work practice research paradigms, models and methods. Particular attention is given to the conduct of evaluation and assessments projects. This course also gives the student a more in-depth exploration of computer-assisted, qualitative and quantitative data analysis. This course may be offered in multiple modalities. Prereq: SWK/SOWK 525 or SWK/SOWK 601.

SOWK 626: 3 s.h.**Traumatic Bereavement**

This course provides a framework for critical analysis of the dynamics of complicated mourning and traumatic loss. Students will recognize the manifestations of grief that has become complicated, and assess capacities for healthy resolution at the micro, mezzo and macro levels. Students will develop intervention strategies that are supported by research as well as recognize and identify theoretical underpinnings. Prereq: SOWK 501 and admission to the MSW program, or permission of instructor.

SOWK 627: 3 s.h.**SOWK, Sport & Mental Health**

Explore the connection between mental health and sport, as well as the role of social workers in intervening with athletes of all levels to address mental health issues clients may encounter or have developed as a result of athletic participation. Additionally, the course will review, critique and address current interventions with athletes, and will seek to focus on new and emergent evidence-based modalities of treatment for athletes. Prereq: MSW program admission and SOWK 501 or permission of instructor.

SOWK 630: 3,5 s.h.**Advanced Field Practicum 1**

Provides students with practical experience (250 hours) in supervised direct-service activities across all client systems, from the individual's level to that of the community. This advanced field experience allows students to apply theory and skills acquired in the generalist concentration areas while simultaneously fostering the development of a professionally reflective, ethical, knowledgeable and self-evaluating social worker. The course also includes a seminar where students discuss and process the field experience with faculty. Prereq: SWK/SOWK 531 or SWK/SOWK 601. Coreq: SOWK 620.

SOWK 631: 3,4 s.h.**Advanced Field Practicum 2**

Provides students with practical experience (250 hours) in supervised direct-service activities across all client systems, from the individual's level to that of the community. This advanced field experience allows students to apply theory and skills acquired in the generalist concentration areas while simultaneously fostering the development of a professionally reflective, ethical, knowledgeable and self-evaluating social worker. The course also includes a seminar where students discuss and process the field experience with faculty. Prereq: SWK/SOWK 531 or SWK/SOWK 601. Coreq: SOWK 620.

SOWK 640: 3 s.h.**Sp Topics:**

This course provides the opportunity for a range of topics to explore issues and concerns for the social work profession. Coreq or Prereq: SOWK 601 or SOWK 531.

SOWK 641: 3 s.h.**Sp Topics:**

This course provides the opportunity for a range of topics to explore issues and concerns for the social work profession. Coreq or Prereq: SOWK 601 or SOWK 531.

SOWK 642: 3 s.h.**Sp Topics:**

This course provides the opportunity for a range of topics to explore issues and concerns for the social work profession. Coreq or Prereq: SOWK 601 or SOWK 531.

SOWK 643: 3 s.h.**Sp Topics:**

This course provides the opportunity for a range of topics to explore issues and concerns for the social work profession. Coreq or Prereq: SOWK 601 or SOWK 531.

SOWK 679: 3 s.h.**Experimental**

Experimental

SOWK 691: 1-3 s.h.**Independent Study**

An in-depth approach to an individually structured problem. Registration by permission.

SOWK 700: 3 s.h.**Social Work Leadership I**

This is the first of a sequence of two courses on advanced leadership and management for Doctor of Social Work students. Students will glean a theoretical orientation to the study of organizations and leadership within organizations. This examination of theories will reflect the values of the social work profession and their application to social service systems, structures, and processes. Also explored will be theories of organizational change, organizational challenges, and organizational effectiveness. Within the context of social service organizations, leadership approaches and theories are also examined.

SOWK 701: 3 s.h.**Social Work Leadership II**

This is the second course in the advanced leadership and management sequence. The focus of this course is on development of knowledge and skills for social work managers within the public and private social service sector. Additional attention will be given to leading in times of fiscal constraint, political changes, and workforce challenges.

SOWK 704: 3 s.h.**Social Work Teacher-Scholar I**

This is the first of a sequence of two courses on social work teaching and scholarship for Doctor of Social Work students. The course will enable the students to critically examine seminal and contemporary works in pedagogy. The connection of these theories to social work teaching and learning will be a central component of this course, including particular emphasis on the historical evolution of social work education. The course provides students with an opportunity to explore seminal works from a historical perspective and critically evaluate contemporary theories of teaching and learning in social work. It is required preparation for the second course in the sequence in which students develop a unique and personal conceptual framework for their own teaching.

SOWK 705: 3 s.h.**Social Work Teacher-Scholar II**

This is the second in a sequence of two courses about social work teaching and scholarship for Doctor of Social Work students. The course provides students with an opportunity to critically evaluate theories of teaching and learning, particularly in contemporary settings in social work. Students will craft a conceptual framework to guide their own career as instructors in a variety of social work settings, including undergraduate and graduate professional social work education. They will practice course planning and delivery along with program development and student/course/program assessment with attention to accreditation requirements. In addition, they will develop understanding of the roles of the social work teacher-scholar in academe and other settings.

SOWK 710: 3 s.h.**Research Methodology****SOWK 715: 3 s.h.****Multivariate Stat Analysis**

Students will be able to apply univariate, bivariate, and multivariate statistics, analysis of variance and simple linear regression to the analysis of a social science data set. They will learn how to choose appropriate statistical analyses that answer research questions and hypotheses, conduct these analyses using SPSS, interpret their findings, and communicate their results clearly and effectively. Reserved for students in the DSW program.

SOWK 720: 3 s.h.**Leadership/Teaching Praxis I**

Experiential two semester course designed to provide students with an opportunity to demonstrate mastery of the course content from the program's first year's courses. Students will participate in supervisory leadership and/or teaching activities that provide experiential learning and application and integration of theory and skills acquired in earlier coursework. Weekly meetings are a required component of this course and the meetings will be facilitated by the faculty mentor to instruct, guide, and assess student's progress related to the leadership and/or teaching praxis.

SOWK 721: 3 s.h.**Leadership/Teaching Praxis II**

Experiential two semester course designed to provide students with an opportunity to demonstrate mastery of the course content from the program's first year's courses. Students will participate in supervisory leadership and/or teaching activities that provide experiential learning and application and integration of theory and skills acquired in earlier coursework. Weekly meetings are a required component of this course and the meetings will be facilitated by the faculty mentor to instruct, guide, and assess student's progress related to the leadership and/or teaching praxis.

SOWK 725: 3 s.h.**Intervention Research**

Advanced research course introduces students to the five steps of intervention development, testing, and dissemination. Students will be given the opportunity to practice elements of these stages to master the strategies of implementing, documenting, and evaluating interventions that respond to social problems affecting systems of all sizes (e.g., individual, family, group, community).

SOWK 730: 3 s.h.**Qualitative Analysis****SOWK 774: 3 s.h.****Comprehensive Seminar**

Students will engage in a collaborative learning experience in which they assess whether as doctoral students they have acquired the knowledge and skills necessary for proceeding with the development of a Doctoral Dissertation. Utilizing a phenomenon of interest, students will demonstrate their ability to conceptualize a clear and compelling research topic by organizing, presenting, and critiquing both theoretical and empirical knowledge related to the phenomenon. Further, students will identify areas needing further exploration as well as possible research methods to conduct the proposed research. The Preliminary Paper must demonstrate that the student has acquired a sufficiently broad understanding of the phenomenon of interest and indicate that the student is prepared to add to knowledge in the field through an independent in-depth study of a topic relevant to best practices in social work related to leadership, teaching, or both. Students will orally defend their comprehensive paper at Residency. The defense will include an overview of the phenomenon as well as a summary of the research question that could be employed should students continue with the same topic for their dissertation.

SOWK 775: 3 s.h.**Dissertation Seminar**

Students will engage in a collaborative learning experience in which they explore different ways of knowing in social sciences. They will become familiar with a variety of theoretical perspectives and will practice integrating those theories with their professional social work practice as they work toward formulating a research question and identifying a relevant theoretical perspective from which to examine it in the upcoming dissertation. Ethical considerations in research will be examined, and students will become familiar with their institution's IRB process. Students will consider deeply the relationship between their education and their future roles as leaders and educators.

SOWK 776: 1-3 s.h.**Dissertation I**

Over two semesters, students will work in close consultation with a faculty member to build upon the research question crafted in the Dissertation Seminar. They will gain institutional approval to conduct their independent research and will conduct the research under the supervision of the faculty member. A focus will be placed on the completion of a traditional dissertation in the context of the development of applied knowledge that will be relevant to the social work profession; as such, the student will develop components of the dissertation that may be published or presented in refereed venues. Pre-requisite: SOWK/SWK 775: Dissertation Seminar

SOWK 777: 1-3 s.h.**Dissertation II**

Over two semesters, students will work in close consultation with a faculty member to build upon the research question crafted in the Dissertation Seminar. They will gain institutional approval to conduct their independent research and will conduct the research under the supervision of the faculty member. A focus will be placed on the completion of a traditional dissertation in the context of the development of applied knowledge that will be relevant to the social work profession; as such, the student will develop components of the dissertation that may be published or presented in refereed venues. Pre-requisite: SOWK/SWK 776: Dissertation I

Sociology (SOCY)

SOCY 101: 3 s.h.**Introduction to Sociology (G3)**

Introduction to the scientific study of human groups, organizations and societies. Examination of major sociological questions and approaches to studying them.

SOCY 101H: 3 s.h.**Introduction to Sociology (G3)**

Introduction to the scientific study of human groups, organizations and societies. Examination of major sociological questions and approaches to studying them.

SOCY 179: 1-3 s.h.**Experimental**

Experimental

SOCY 210: 3 s.h.**Sociology of the Family (G3)**

The family as a social institution. Topics include the family in mass society, diverse family forms, human sexuality, typologies of love, mate selection, husband-wife interaction, parent-child interaction, family disorganization and American ethnic families. Specific topics may vary.

SOCY 211: 3 s.h.**Social Problems (G3, W)**

A sociological examination of problem areas or human concerns such as poverty, labor issues, substance abuse, domestic violence, crime and justice, health, the environment, discrimination and globalization. Topics may vary. Prereq: ENGL 110.

SOCY 211H: 3 s.h.**H:Social Problems (G3, W)**

H:Social Problems

SOCY 216: 3 s.h.**Human Population (G3)**

Analysis of population processes such as fertility, mortality, composition, distribution and migration patterns; relationship of population processes to social, economic and political development; effects of status differences; trends in population change. Offered periodically.

SOCY 230: 3 s.h.**Criminology (G3, W)**

The nature and causes of criminal behavior and the types of social response to law violation. Offered in fall, spring. Prereq: SOCY 101, ENGL 110.

SOCY 230H: 3 s.h.**Hon: Criminology (G3, W)****SOCY 300: 3-12 s.h.****Co-Op Ed Experience in Soc**

Co-Op Ed Experience in Soc

SOCY 301: 3 s.h.**Craft of Sociology (W)**

Exploration of the technical and analytical skills of sociology, including locating sociological resources, citing sociological materials, writing literature reviews and understanding links between sociological knowledge and public policy. Prerequisites: SOCY 101, ENGL 110 and 6 credits of SOCY courses.

SOCY 302: 4 s.h.**Social Statistics**

Emphasis on learning and presenting findings from applied statistical techniques, including frequency tables and graphs, contingency tables, measures of central tendency and dispersion, hypothesis testing, confidence intervals, analysis of variance, correlation, and linear regression (bivariate and multiple). SPSS software package used. Offered in fall, spring. Prereq: C- or higher in Math 130 and 9 s.h. in sociology/anthropology.

SOCY 303: 3 s.h.**Sociological Theory**

Examination of classical and contemporary theoretical traditions; relevance of sociology to everyday life; works of selected theorists such as Durkheim, Marx, Weber, Merton. Offered fall, spring. Prereq: SOCY 101 and 9 s.h. of sociology at the 200 level or higher.

SOCY 305: 3 s.h.**Social Research Methods (W)**

Overview of major research methods: survey analysis, interviewing, participant observation, content analysis and experimental design. Each student designs and completes a research project. Offered fall, spring. Prereq: C- or higher in ENGL 110, SOCY 301, SOCY 303 and SOCY 302.

SOCY 307: 3 s.h.**African-American Social Thought (G3)**

Examination of the development of African-American social theory through the history of the American republic. Looks at the relationship between African-American social thought, civil rights movements and the larger Afro-Caribbean diaspora. Offered infrequently. Prereq: 9 s.h. in African- American Studies or SOCY 101 and 9 s.h. in sociology (SOCY 303 recommended) or permission of instructor.

SOCY 308: 3 s.h.**Soc of Afr-Amer and Lat Educ (D)**

Social and historical analysis of the secondary and postsecondary experiences of African-American and Latino/a youth in the U.S. informed by critical race, feminist and stratification theories. Offered periodically. Prereq: SOCY 101 or LATS 201.

SOCY 310: 3 s.h.**Sociology of Religion**

Sociological understanding and interpreting religious phenomena including insight regarding the place of religion in society; the functional and conflict orientation to religion; religion and the individual; institutionalization of religion; religion and social change; and the secularization of religion. Offered periodically.

SOCY 313: 3 s.h.**Sociology of Disaster (G3)**

Behavioral and organizational response to environmental hazards and disasters. Case studies of major natural disasters and hazardous-materials incidents illustrate individual, group and societal challenges faced in such events. Issues include building a disaster-resistant community, the impact of the media, and governmental successes and failures. Offered annually. Prereq: SOCY 101 or SOCY 211. A required course for the EHEM minor.

SOCY 313H: 3 s.h.**H: Sociology of Disaster (G3)****SOCY 315: 3 s.h.****Race and Ethnic Relations (G3)**

Study of racial and ethnic relations, modes of adaptation of minorities and cross-cultural examinations of dominant-minority relations. Offered annually. Prereq: 3 s.h. of sociology or junior/senior status.

SOCY 316: 3 s.h.**Social Psychology (G3, W)**

Introduction to sociological social psychology; how social interactions are created, become patterned and susceptible to change; how society is structured through social interaction; and how social identities are formed. Specific topics may vary. Offered periodically. Prereq: ENGL 110, 3 s.h. of sociology or junior/senior status.

SOCY 317: 3 s.h.**Medical Sociology (G3)**

Social and cultural factors in health and illness; social organization of the medical care system; structural and interactional aspects of healthcare. Prereq: 3 s.h. sociology or junior/senior status. Offered periodically.

SOCY 318: 3 s.h.**Soc Of Complex Organizations**

Social-interaction processes in business and industry; nature and effects of complex industrial organization; interrelationships among industry and other social subsystems. Offered periodically. Prereq: 3 s.h. sociology or junior/senior status.

SOCY 319: 3 s.h.**Social Stratification (G3)**

The development of social inequality by race, ethnicity, class, gender and nationality. The social construction of race and gender; various theories of class distribution. Inequality in education, housing and the workplace are discussed. Global instances of inequalities are also discussed. Offered periodically. Prereq: 3 s.h. of sociology and junior/senior status.

SOCY 320: 3 s.h.**Sociology of Education (G3)**

Analysis of education as a social institution and its relationship to other institutions; the roles of educator, administrator, student and parent; implications of subcultures, social stratification and social change. Offered infrequently.

SOCY 329: 1-6 s.h.**Topics in Sociology**

Offered periodically.

SOCY 329H: 1-6 s.h.**Hnrs: Topics in Sociology****SOCY 331: 3 s.h.****Sociology of Policing & Courts (G3)**

Overview of the American system for the administration of justice focused on the apprehension, prosecution and adjudication of criminal defendants. Offered in fall. Prereq: SOCY 101, 230.

SOCY 332: 3 s.h.**Modern Corrections (G3)**

Contemporary American responses to crime. Concentrates on the origins, nature, functions and limitations of American correctional modalities. Offered in spring. Prereq: SOCY 101, 230.

SOCY 332H: 3 s.h.**H:Modern Corrections (G3)****SOCY 334: 3 s.h.****Juvenile Delinquency (G3)**

Nature and extent of juvenile crime; theories of causation; techniques of control and prevention. Offered annually. Prereq: SOCY 101, 230.

SOCY 335: 3 s.h.**Ethics in Criminal Justice**

Examines numerous ethical theories and their application to policing, courts and corrections in the United States. A global analysis of current research, theories and case studies on human trafficking will also be a focus. Prerequisites: SOCY 101 and SOCY 230.

SOCY 335H: 3 s.h.**Hon: Ethics in Crim Justice****SOCY 337: 3 s.h.****Gender and the Law (G3)**

Analyze how the courts and the law construct gender and how these social constructions of gender in the law impact individuals, families, groups, and institutions. Examine the lives of women & girls as offenders, prisoners, victims/survivors and workers in the criminal justice system from a variety of perspectives and disciplines. Analyze how the intersections of sexism, racism, heterosexism, and classism impact the lives of individuals and communities in regard to criminality.

SOCY 337H: 3 s.h.**Hon: Gender and the Law (G3)**

SOCY 338: 3 s.h.

Sociology of Deviance

Deviance as a social phenomenon. Discusses how definitions of deviance have changed over time, how people become labeled “deviant” and the utility of various theories of deviance. Offered annually. Prereq: SOCY 101.

SOCY 338H: 3 s.h.

H:Sociology of Deviance

SOCY 339: 3 s.h.

Topics In Criminology

The nature, extent, origins and possible “solutions” to select problems in contemporary criminology. Offered periodically. Prereq: SOCY 101 and 230 or permission of instructor.

SOCY 339H: 3 s.h.

Hon: Topics in Criminology

SOCY 379: 1-3 s.h.

Experimental

Experimental

SOCY 400: 3-12 s.h.

Co-Op Ed Experience in Soc

Co-Op Ed Experience in Soc

SOCY 441: 3 s.h.

Urban Society

Historical and postmodern analysis of urban development, in particular the impact of demographic, political and socioeconomic structural changes on the social fabric of U.S. metropolitan cities. Topics include inner-city life and culture, race, gender, class relations and policy implications. Offered periodically. Prereq: SOCY 101.

SOCY 441H: 3 s.h.

Hnrs: Urban Society

SOCY 448: 3 s.h.

Seminar In Sociology

Research and group discussion for advanced students on various topics of interest. A total of 6 s.h. may be taken. Offered in fall, spring. Prereq: permission of instructor.

SOCY 479: 3 s.h.

Experimental

Experimental

SOCY 489: 1-4 s.h.

Honors Course

Two to four semesters of supervised research through independent projects. Prereq: 3.0 GPA and recommendation by a faculty mentor. For further information, see the Special Academic Opportunities section.

SOCY 498: 1-6 s.h.

Independent Study in Sociology

For further information, see the Special Academic Opportunities section. Prereq: 3.0 GPA and permission of faculty member.

SOCY 499: 1-4 s.h.

Departmental Honors

Two to four semesters of supervised research through independent projects. Prereq: 3.0 GPA and recommendation by a faculty mentor. For further information, see the Special Academic Opportunities section.

SOCY 500: 3-12 s.h.

Co-Op Ed Experience in Soc

Co-Op Ed Experience in Soc

Space Weather and Environment (SWEN)

SWEN 571: 3 s.h.

The Origins of Space Weather

Phenomenological approach to understanding the origins of space weather and the space environment from the Sun to the Earth's surface including a detailed treatment of coronal holes, coronal mass ejections, sunspots, solar flares, solar energetic particle events, solar radio bursts, solar structure including its magnetic dynamo, solar wind, terrestrial magnetic field, geomagnetic storms. Prerequisite: admission to the program or permission of the program coordinator. 3 hrs. Fully online, distance-learning format. Offered annually.

SWEN 572: 3 s.h.

Impacts of Space Weather on the Technological World

Systems approach to understanding how space weather impacts the near-earth space environment, our magnetosphere, upper atmosphere, and the myriad of ways it couples into the Earth system. Identification and impact of solar radio bursts, geomagnetic storms, geomagnetically induced currents (GI Cs), aurora, and radiation storms on our technological infrastructure. The course will address the varying severity of impacts from mild inconveniences to the possibility of a Carrington-class event that could cause a massive geomagnetic storm that could destroy national power grids world-wide and cause irreparable damage to the global economy. 3 hrs. Prerequisite: SWEN 571 or permission of program coordinator. Fully online, distance-learning format. Offered annually.

SWEN 673: 3 s.h.

Effective Decision-Support for Space Weather Risks

Space weather data, products, and information is a vital component for effective decision-making process for relevant stakeholders. This course uses a case-studies approach to identify and document the most effective means of producing and delivering space-weather information including alerts, warnings, and notifications to target audiences and the general public, and to ensure that space-weather products are used intelligibly to inform decision making. Prerequisites: SWEN 572 or permission of program coordinator. 3 hrs. Fully online, distance-learning format. Offered annually.

SWEN 674: 3 s.h.

Space Weather Broadcast and Communications

Examines existing space weather data, images and products. These products will be important in learning how to create a space weather broadcast. Video projects pertaining to specific space weather events such as solar flares, geomagnetic storming, radiation storms, etc. will be important to demonstrate knowledge of which products to use for communicating a forecast. How to utilize resources, integrated space weather analysis system, solar dynamics observatory and others, will be stressed. Prerequisite: SWEN 572 or permission of the program coordinator. 3 c.h. Offered annually. Fully online, distance-learning format.

Spanish (SPAN)

SPAN 101: 3 s.h.

Elementary Spanish 1 (G1)

Introduction to language and culture. Fundamentals of grammar and syntax. Oral and written practice, short readings and practice in aural comprehension. Emphasis is placed on learning useful everyday phrases and working toward accuracy in pronunciation.

SPAN 102: 3 s.h.**Elementary Spanish 2 (G1)**

Continuation of SPAN 101; emphasis on more complex syntactical structures while working toward greater proficiency in both productive (speaking and writing) and receptive (reading and listening) skills. Prereq: SPAN 101 or 2 years of high school Spanish.

SPAN 179: 3 s.h.**Experimental**

Experimental

SPAN 201: 3 s.h.**Intermediate Spanish 1 (D, G1)**

Emphasis is placed on further developing receptive and productive skills through varied realistic exercises and in authentic real-life situations. Contemporary cultural and literary texts provide the thematic basis for oral and written communication. Systematic treatment of grammar. Prereq: SPAN 102 or placement exam.

SPAN 202: 3 s.h.**Intermediate Spanish 2 (D, G1)**

Continuation of SPAN 201. Communication in speech and writing; grammar and vocabulary are studied in greater depth and breadth. Increased emphasis on developing a cross-cultural perspective. Treatment of grammar and reading comprehension. Prereq: SPAN 201 or placement exam.

SPAN 211: 3 s.h.**Spanish for Business 1 (G1)**

The Spanish language and culture needed to perform basic business transactions in Spanish-speaking countries. Prereq: SPAN 102 or placement exam.

SPAN 212: 3 s.h.**Spanish for Business 2 (G1)**

Continuation of SPAN 211. Emphasis on business terminology, commercial correspondence, similarities and differences in business transactions and international procedures. Prereq: SPAN 201 or 211, or placement exam.

SPAN 279: 3 s.h.**Experimental**

Experimental

SPAN 300: 3-12 s.h.**Co-Op Ed Experience in Spanish**

Co-Op Ed Experience in Spanish

SPAN 301: 3 s.h.**Commercial Spanish**

Commercial vocabulary and stylistics. Presentation of the parts of the business letter. General types of business correspondence such as letters requesting and offering information, mail orders, sales letters, applications for employment, complaints, claims, collection, credit, etc. Prereq: SPAN 202 or 351, or placement exam.

SPAN 303: 3 s.h.**Spanish for Heritage Speakers (G1)**

This course is for students who were raised speaking Spanish, but who have not studied Spanish formally and are unsure of grammar and spelling, but would like to perfect their command of the language. The course will prepare the students to be able to continue successfully their Spanish studies at the 300-level and so more easily get a minor or major in Spanish, or simply to be ready to use Spanish on the job or in any formal context. It is different from courses like SPAN 101-202 where much of the focus is on building basic vocabulary for non-Spanish speakers and on encouraging students to speak, as well as teaching correct pronunciation. Students in SPAN 203 already know how to speak and pronounce Spanish; this course concentrates on grammar, writing, stylistics, and reading, as well as advanced vocabulary building. This will be done through reading, writing, and discussing such topics as customs peculiar to Spanish-speaking countries, the experiences of Hispanic immigrants to the United States, traditional and modern art and architecture in Spain and Latin American countries, global warming and conservation, and coming-of-age experiences. Focus is on being able to describe places, people and events, narrating a past event, stating an opinion and defending it. In larger terms, the class will: 1. examine, analyze, and critically evaluate the Spanish spoken by each member of the class and the heritage that that Spanish reflects and 2. compare and contrast it with what is considered "standard" Spanish; 3. express orally and in writing the differences and similarities between formal and informal speech and among Latin American, Latino, Spanish, and Anglo-American speech and customs; 4. increase critical thinking, oral and written communication skills; 5. describe orally and in writing the content of Spanish newspaper articles, short stories, films and a novel; 6. express orally and in writing opinions about the content of Spanish newspaper articles, short stories, films and a novel.

SPAN 311: 3 s.h.**Survey of Literature 1**

Life and works of outstanding literary figures and movements in Spain through the 17th century. Lectures, outside readings and reports. Prereq: SPAN 351 or 352.

SPAN 312: 3 s.h.**Survey of Literature 2**

Life and works of outstanding literary figures and movements in Spain from 1700 forward. Lectures, outside readings and reports. Prereq: SPAN 351 or 352.

SPAN 313: 3 s.h.**Survey of Span American Lit 1**

Life and works of outstanding literary figures and movements in Spanish America from its discovery and colonization to the present. Emphasis given to the Latin American contribution to universal literature. Prereq: SPAN 351 or 352.

SPAN 314: 3 s.h.**Srvy of Span-Amer Lit 2**

A panoramic journey through Latin American literature from the beginning of the 20th century to the present. Attention will be given to the development of cultural and aesthetic movements in the socio-historical contexts of Spanish America. Prereq: SPAN 351 or 352.

SPAN 331: 3 s.h.**Spanish Civilization 1**

History and development of Spain from prehistoric times to 1700. Includes the civilization, art and influence of the Romans, Visigoths and Moslems; unification of the country and the Hapsburgs. A study of the art of each period. Considerable use of slides and films. Prereq: SPAN 202 or 351.

SPAN 332: 3 s.h.**Spanish Civilization & Culture 2 (D)**

Spanish history and culture from 1700 forward from the beginning of the Bourbon dynasty through the present. Emphasis on the intellectual, social, cultural and political aspects of life in Spain. Outside readings, class reports. Considerable use of slides and films. Prereq: SPAN 202 or 351.

SPAN 333: 3 s.h.**Spanish American Civilization 1**

History of pre-Columbian Americans; the conquest, exploration and colonization of the New World to the Wars of Independence. Includes a history of Spanish American cultures, societies and institutions. Use of audiovisual material to emphasize the differences among pre-Columbian civilizations. Prereq: SPAN 202 or 351.

SPAN 334: 3 s.h.**Spanish American Civilization 2**

History and culture of the Spanish Americas from 1824 to contemporary times. The formation and development of the new Spanish American countries once they reached their independence from Spain will be explored and analyzed. Emphasis will be given to the traits that make each one of these countries unique as well as part of the Spanish American world. Prereq: SPAN 202 or 351.

SPAN 351: 3 s.h.**Composition and Oral Expression 1 (G1, W)**

Systematic practice in the language, designed to hone students' grammar, oral and written skills to a level of proficiency enabling them to express themselves with accuracy and fluency. Extensive grammar review. Prereq for SPAN 351: SPAN 202 or placement exam. Prereq for SPAN 352: SPAN 351, ENGL 110.

SPAN 352: 3 s.h.**Composition and Oral Expression 2 (G1, W)**

Systematic practice in the language, designed to hone students' grammar, oral and written skills to a level of proficiency enabling them to express themselves with accuracy and fluency. Extensive grammar review. Prereq for SPAN 351: SPAN 202 or placement exam. Prereq for SPAN 352: SPAN 351, ENGL 110.

SPAN 361: 3 s.h.**Oral Spanish 1**

Intensive experience with the spoken language. Taped exercises in comprehension. Conversations concerning everyday life, with emphasis on appropriate vocabulary. Emphasis on modern society and customs: schools, sports, holidays, literature, etc. Remedial treatment of phonetics and grammar. Prereq: SPAN 351, 352, or equivalent.

SPAN 361H: 3,4 s.h.**Hon: Oral Spanish 1****SPAN 362: 3,4 s.h.****Oral Spanish 2**

Intensive experience with the spoken language. Taped exercises in comprehension. Conversations concerning everyday life, with emphasis on appropriate vocabulary. Emphasis on modern society and customs: schools, sports, holidays, literature, etc. Remedial treatment of phonetics and grammar. Prereq: SPAN 351 or equivalent.

SPAN 371: 3 s.h.**Spanish in the US (D)**

The history and sociolinguistic aspects of the use of Spanish in the United States, analyzing issues related to language maintenance and loss, contact with English and the identification of varieties of Spanish in the U.S. Emphasis will be given to language attitudes and implications for identity and interethnic relations. Prereq: SPAN 352 or permission of instructor.

SPAN 379: 3 s.h.**Experimental**

Experimental

SPAN 400: 3-12 s.h.**Co-Op Ed Experience in Spanish**

Co-Op Ed Experience in Spanish

SPAN 409: 1,3 s.h.**Applied Linguistics**

CR. Applied Linguistics

SPAN 411: 3 s.h.**Spanish Poetry 1**

Development of principal types of Spanish or Spanish American poetry from the early Kharjas and Cantar de Mio Cid to the Renaissance. Study of the main works of representative poets. Class discussions, lectures, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 412: 3 s.h.**Spanish Poetry 2**

Continuing development of Spanish or Spanish American poetry from the Golden Age to the end of the 19th century. Main works of representative poets are studied. Class discussions, lectures, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 421: 3 s.h.**Spanish Drama 1**

Traces the development of Spanish drama from its beginnings, with a study of representative plays of Spain's Golden Age. Lectures, discussions, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 422: 3 s.h.**Spanish Drama 2**

A study of the Spanish theatre from 1700 through the 19th century. Includes the neoclassic, romantic and realist dramatists such as Echegaray, Tamayo y Baus and Zomilla. Lectures, discussions, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 431: 3 s.h.**Spanish Prose 1**

Development of narrative in Spain from the 13th-century origins of these forms to the end of the 17th century. Includes historical, didactic, narrative, pastoral, picaresque, mystic and novels of chivalry. Lectures, discussions, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 432: 3 s.h.**Spanish Prose 2**

Study of Spanish narrative forms from the 18th century to the present day. Lectures, discussions, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 433: 3 s.h.**Latin American Prose**

A study of Spanish American prose forms— history of discovery, conquest, exploration and colonization, romanticism, realism, naturalism, the essay and fiction to the present day. Lectures, outside readings and reports. Prereq: any two of SPAN 311, 312, 313 or 314.

SPAN 443: 1-3 s.h.**Composition and Stylistics**

CR. Composition and Stylistics

SPAN 444: 1-3 s.h.**Translation and Interpretation**

CR. Translation and Interpretation

SPAN 445: 1,3 s.h.**Adv Oral Practice and Self-Exp**

CR. Advanced Oral Practice and Self- Expression

SPAN 446: 1-3 s.h.**History of Spanish Civilization**

CR. History of Spanish Civilization

SPAN 447: 1-3 s.h.**Hist Spanish Amer Civilization**

CR. History of Spanish- American Civilization

SPAN 451: 1,3 s.h.**Geography of Spain**

CR. Geography of Spain, Physical and Economic

SPAN 460: 3 s.h.**Translation and Interpretation**

Intended for students with a firm oral and written command of Spanish who need expert guidance for avoiding the pitfalls inherent in transposing thought from one language to another. Emphasis on idiomatic translation of newspaper and magazine articles. Prereq: SPAN 351 and 352.

SPAN 461: 1-3 s.h.**History of Hispanic Art**

CR. History of Hispanic Art

SPAN 462: 1,3 s.h.**Evolution of Spanish Language**

CR. Evolution of the Spanish Language

SPAN 470: 3 s.h.**Spanish Linguistics**

Introduction to Spanish phonetics. Comparative study of the morphology and the syntactic structures of Spanish and English. To be taken before FORL 480. Prereq: SPAN 351 and 352. Recommended: SPAN 361.

SPAN 470H: 3 s.h.**H:Spanish Linguistics****SPAN 471: 1-3 s.h.****Contemporary Spain**

CR. Aspects of Contemporary Spain

SPAN 472: 1-3 s.h.**Contemporary Latin America**

CR. Aspects of Contemporary Latin America

SPAN 479: 1-3 s.h.**Experimental**

Experimental

SPAN 481: 1-3 s.h.**Medieval Spanish Literature**

CR. Seminar in Medieval Spanish Literature

SPAN 482: 1-3 s.h.**Renaissance Literature**

CR. Seminar in Renaissance Literature

SPAN 482H: 3 s.h.**H:Renaissance Literature****SPAN 485: 1,3 s.h.****19th Century Literature**

CR. Seminar in Nineteenth- Century Literature

SPAN 486: 1-3 s.h.**20th Century Literature**

CR. Seminar in Twentieth- Century Literature

SPAN 487: 1,3 s.h.**Spanish-American Literature**

CR. Seminar in Spanish- American Literature

SPAN 489: 1-4 s.h.**Honors Course**

Honors Course

SPAN 491: 1,3 s.h.**Current Topics**

CR. Current Topics

SPAN 498: 1-3 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

SPAN 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

SPAN 500: 3-12 s.h.**Co-Op Ed Experience in Spanish**

Co-Op Ed Experience in Spanish

SPAN 509: 1,3 s.h.**Applied Linguistics**

Analysis of the language as behavior and emphasis on the priority of the spoken language in a systematic study of its structure. Comparison with English to explain and avoid errors of pronunciation and syntax resulting from intrusion of one's native language. Required for degree.

SPAN 512: 1-3 s.h.**Introductory Phonetics**

A combination of theoretical lessons with practical exercises aimed at imparting native or near-native accents. Includes study of diction and intonation. Students are required to give readings and dramatic presentations in class and before the student body. Required for M.A.degree.

SPAN 522: 1-3 s.h.**Composition**

Systematic practice in the language designed to hone students' grammar and written skills to a level of proficiency that enables students to write with accuracy and fluency.

SPAN 523: 1-3 s.h.**Composition and Stylistics**

Designed to give students a feeling for Spanish style in writing, a sense of shades of meaning, and a mastery of certain difficulties of Spanish grammar and syntax. Writing of original compositions, précis writing and translation from English to Spanish. Required for degree.

SPAN 524: 1-3 s.h.**Translation and Interpretation**

Intended for students who already have a firm oral and written command of Spanish, but need expert guidance in learning to avoid the pitfalls inherent in transposing thought from one language to another. Emphasis on the importance of style, exactness of expression and use of the dictionary. Practical exercises in technical, scientific, commercial, journalistic and political language.

SPAN 525: 1,3 s.h.**Advanced Oral Practice**

For advanced students who already possess fluency, but need practice in acquiring the habit-forming processes and spontaneous assimilation of spoken-language patterns necessary for mature self-expression. Oral reports and guided discussion. Students in the course will be expected to assume leadership roles in activities of the school, such as public speaking, dramatics, newspaper, etc.

SPAN 530: 3 s.h.**Spanish Linguistics**

An introduction to basic concepts and major divisions of modern linguistics as it pertains to the description of modern Spanish, including phonetics, phonology, morphology, syntax and semantics.

SPAN 531: 1,3 s.h.**Evolution of Spanish Language**

Historical survey of the development of the Spanish language from its Latin beginnings and its later influences to the languages of today. Particularly recommended for students within a summer or two of their comprehensive examinations.

SPAN 532: 3 s.h.**Spanish Pragmatics**

Application of philosophical, sociological, and linguistic theory to the use of language in the professional workplace. Interdisciplinary analyses of how and why Spanish speakers choose to use particular language forms that convey different linguistic possibilities and different meanings in different cultural contexts.

SPAN 541: 1-3 s.h.**History Spanish Civilization 1**

A study of Spain, with special emphasis on the historical development of its intellectual, social and cultural life.

SPAN 542: 1-3 s.h.**Hist Spanish-American Civil**

Traces the main currents of Latin American civilization from its prehistoric beginnings to the present.

SPAN 551: 1,3 s.h.**Geography of Spain**

Emphasizes the role of Spain's geography in her economic and cultural development.

SPAN 561: 1-3 s.h.**History of Hispanic Art**

Broad treatment of the contributions to civilization made by the Spanish-speaking peoples in the domains of art, music and architecture. Considerable use of visual materials and recordings.

SPAN 571: 1-3 s.h.**Contemporary Spain**

Presents a selected view of current developments in Spain of significance to its inhabitants. May include internal politics, foreign affairs, economy, educational system, sociological changes, arts and sciences.

SPAN 572: 1-3 s.h.**Contemporary Latin America**

Selected view of significant, current developments in a number of Latin American countries. May include internal politics, foreign affairs, economy, educational system, sociological changes, arts and sciences.

SPAN 579: 1-3 s.h.**Experimental**

Experimental

SPAN 581: 1-3 s.h.**Medieval Spanish Literature**

CR. Seminar in Medieval Spanish Literature

SPAN 582: 1-3 s.h.**Renaiss Lit:**

CR. Seminar in Renaissance Literature

SPAN 583: 1,3 s.h.**Golden Age Literature**

CR. Seminar in Golden- Age Literature

SPAN 584: 1-3 s.h.**18th Century Literature**

CR. Seminar in Eighteenth- Century Literature

SPAN 585: 1,3 s.h.**19th Century Literature**

CR. Seminar in Nineteenth- Century Literature

SPAN 586: 1-3 s.h.**20th Century Literature**

CR. Seminar in Twentieth- Century Literature

SPAN 587: 1,3 s.h.**Spanish-American Literature**

In-depth study of the literature of twentieth century Spanish American poetry, novel and drama through reading, analysis and commentary of works from each of the most prestigious authors and more influential texts.

SPAN 589: 1,3 s.h.**Current Topics**

In-depth investigation and development of a topic of current interest not normally covered in regular courses. Special topics to be covered will vary to meet the challenge of timeliness and appropriateness.

SPAN 698: 1-3 s.h.**Research Report****SPAN 699: 3 s.h.****Thesis**

Thesis

Special Education (SPED)

SPED 001: 15 s.h.**SPED Professional Bloc 2**

SPED Professional Bloc 2

SPED 101: 3 s.h.**Orientation to Special Educ**

This introductory course is designed to prepare future special educators with the knowledge base for the identification, placement and instruction of learners with disabilities who are eligible to receive special education services across the continuum of educational environments. Included are historical considerations, educational and developmental needs of individuals with disabilities, special education programs, services, resources, and materials. In addition, practical exposure to individuals with disabilities will be emphasized.

SPED 179: 3 s.h.**Experimental**

Experimental

SPED 237: 3 s.h.**Applied Foundations of Contemporary Special Education**

This course identifies the complex sociocultural history that has brought us to where we are in special education practice today. It presents the contemporary and historical influences of the American school system and how special education is integrated into the modern classroom. The overrepresentation of economically disadvantaged, and culturally and linguistically diverse populations in special education is explored through careful consideration of cultural collaboration, current sociological variables and analysis of causes and prevention strategies. Individual learning differences and the development of academic and functional performance needs of students with disabilities are considered historically, legally, educationally, culturally and socially. Prereq: requires submission of satisfactory FBI, Act 34/151 clearances. Offered in fall, spring. Coreq: must be taken simultaneously with EDFN 211, 241, ERCH 225.

SPED 279: 3 s.h.**Experimental**

Experimental

SPED 300: 3-12 s.h.**Co-Op Ed Experience in Sped**

Co-Op Ed Experience in Sped

SPED 311: 3 s.h.**Assessment for Designing & Implementing Instruction (W)**

This course enables teacher candidates to develop competencies for assessing students in an inclusive classroom setting, design instruction and make instructional decisions to enhance students' learning. Teacher candidates learn how to assess, analyze and interpret data from formal (standardized) and informal (traditional and alternative) testing sources and measurement. Teacher candidates learn how to interpret reports as relevant to students from diverse learning backgrounds and use these interpretive results along with behavioral observation, task analysis and other types of measurement to design instruction. Offered in fall, spring, summer. Prereq: Act 34, 151, 114 clearances and admission to Advanced Professional Studies.

SPED 311H: 3 s.h.

Hon: Design/Implement Instruc (W)

SPED 312: 3 s.h.**Disabl in Inclusive Settings**

Prepares educators to effectively teach children with disabilities in inclusive classrooms by incorporating theory, identification, services, instruction and legal aspects of special education. Course participants will learn to plan, adapt and implement effective instruction and assessment to facilitate academic achievement for learners with mild and moderate disabilities in an inclusive setting. Offered in fall, spring. Prereq: ERCH 110 and Foundations Bloc 1 (EDFN 211, 241, EDUC 220). Course may be taken as a corequisite with Foundations Bloc 1.

SPED 321: 3 s.h.**Serving Individuals in Inclusive Settings (W)**

This course prepares teacher candidates to effectively teach students with severe and multiple disabilities within an inclusive educational system. By incorporating theory with aspects for identification, specialized support services, instruction and relevant special education law, teacher candidates become knowledgeable of their responsibilities as teachers of students with severe and multiple disabilities. Teacher candidates learn to differentiate and individualize instruction for the developmental and chronological requirements of their students. Teacher candidates become practiced in referencing alternate learning standards and general education curricula to facilitate the achievement of their students with severe and multiple disabilities in a variety of learning environments. Offered in spring. Prereq: ENGL 110; Act 34, 151, 114 clearances and admission to Advanced Professional Studies (APS). Coreq: ERCH 421, SPED 341.

SPED 328: 3 s.h.**Assessment in Special Educatn**

The administration, scoring and interpretation of assessment devices typically used in psychometric evaluations are stressed. Critical evaluation of such devices in terms of reliability, validity and norming groups is also developed. The integration of the interpretive results of psychometric evaluation with behavioral observation, task analysis and other assessments developed in prerequisite courses is demonstrated. Offered in fall, spring.

SPED 330: 3 s.h.**Discrimination and Oppression of People with Disabilities (D, P)**

Examines social discrimination through consideration of the policies and practices of societies. Creates an understanding of the social, political and cultural, rather than the physical or psychological, determinants of the experience of disability. Disentangles impairments from the myths, ideology and stigma that influence social interaction and social policy. Through course content and activities, students will challenge the idea that the economic and social statuses and the assigned roles of people with disabilities are the inevitable outcomes of their condition. Offered in fall, spring, summer. Prereq: COMM 100, ENGL 110 and junior status.

SPED 330H: 3 s.h.

H:Discrim/Oppress People/Disab (D, P)

SPED 331: 3 s.h.**Positive Learning Environments for all Students**

Students will develop the ability to effectively analyze and design inclusive educational environments to optimize the achievement of every student, and will receive the knowledge and skills to modify their teaching methods to motivate and support positive social skills in diverse students. Through the use of appropriate assessments and data collection techniques for individual student behaviors, students will develop the ability to conduct functional behavior assessments and apply behavior-intervention plans and positive techniques as needed using the Response to Intervention framework. Offered in fall, spring. Required submission of satisfactory FBI, Act 34/151 clearances; admission to Advanced Professional Studies (APS).

SPED 331H: 3 s.h.**Hon: Positive Lrng Env for All****SPED 337H: 3 s.h.****Hon: Gender and the Law (G3)****SPED 341: 3 s.h.****Early Intervention to Kindergarten**

This course examines the implications of federal mandates for providing educational and supportive services for infants/toddlers/preschoolers with disabilities and their families. The teacher candidates gain knowledge in interpreting data from formal and informal sources to be utilized in developing Individualized Family Service Plans (IFSP). The teacher candidates use case study and field experience data to recommend appropriate school-based programs for young children with disabilities. They also implement effective teaching strategies to meet the family, academic, social, emotional and behavioral needs of young children with disabilities in inclusionary environments. These strategies will be applied in field placements during the semester. Offered in spring. Prereq: EDFN 211, 241, ERCH 225 or EDUC 220; SPED 237; Act 34, 151, 114 clearances and admission to Advanced Professional Studies (APS). Coreq: ERCH 421, SPED 321.

SPED 346: 3 s.h.**Secondary Students w/Disabilities in Inclusive Settings**

This course is designated to prepare secondary education majors to effectively teach students with disabilities in inclusive classrooms. Participants will learn legal mandates, secondary general educators' role in the special education process, and the academic and social implications of inclusion. Participants also will learn to facilitate academic achievement for students with mild and moderate disabilities in inclusive secondary education by planning, adapting and implementing effective instruction. Offered in fall, spring. Prereq: required submission of satisfactory FBI, Act 34/151 clearances; EDFN 211, 241. Cross-listed with SPED 546, credit may not be received for both.

SPED 351: 3 s.h.**Managing Challenging Behaviors**

Provides various strategies to support students with challenging behaviors. Candidates will conduct Functional Behavior Assessment and prepare Behavior Intervention Plan focusing on decrease negative behaviors while increasing positive behaviors. Candidates will develop their ability to effectively analyze behaviors and design inclusive educational and community environments to optimize the achievement of every student. Candidates will demonstrate the knowledge and skills to modify teaching methods and learning environments to promote positive social skills in students with disabilities. Admission to Advanced Professional Studies required.

SPED 361: 3 s.h.**Formal Assessment for Students with Disabilities**

Designed to prepare Special Education teacher candidates to effectively develop competencies for assessing PK-12 students with disabilities according to IDEA (Individuals with Disabilities Education Act). Teacher candidates will acquire knowledge for administration, scoring, and interpretation of formal assessment devices typically used in educational evaluations. Furthermore, teacher candidates will learn how to properly select formal assessment tools in terms of reliability, validity and norm populations and learn about integrated systems of assessment and data collection for identification of students struggling to meet academic and behavioral expectations. Teacher candidates will learn the role of educational evaluations in developing Individual Education Programs (IEP) for students in need of support in the general education curriculum. Teacher candidates will learn professional ways to collaborate with parents and include them as equal partners in the assessment process.

SPED 400: 3-12 s.h.**Co-Op Ed Experience in Sped****Co-Op Ed Experience in Sped****SPED 411: 3 s.h.****Assmt/Devl of Indiv Ed Prgam**

This course provides teacher candidates with the necessary skills to administer, score and interpret a range of formal and informal educational assessments typically used with students with severe and multiple disabilities. Teacher candidates develop their ability to apply variables such as reliability, validity and norm references to select appropriate assessment tools for their students and to develop informal evaluations as needed. Teacher candidates apply their knowledge of required procedures, with students' assessment results, to construct appropriate Individual Education Program, (IEP) with multidisciplinary team members and use those IEPs to plan instruction. Prereq: Act 34, 151, 114 clearances, admission to Advanced Professional Studies and Professional Bloc I courses of ERCH 421; SPED 321, 341. Coreq: SPED 441, 451, 453, 454. Offered in spring.

SPED 412: 3 s.h.**Assessmnt for Mild/Mod Disabl**

This course prepares teacher candidates to develop competencies for administration, scoring and interpretation of formal assessment devices typically used in educational evaluations. Teacher candidates acquire knowledge of the process of how to select formal assessment tools in terms of reliability, validity and norm populations, and learn about integrated systems of assessment and data collection for identification of students struggling to meet academic and behavioral expectations. Teacher candidates will learn the role of educational evaluations in developing Individual Education Programs (IEP) for students in need of support in the general education curriculum. Teacher candidates learn how to collaborate with parents and include them as equal partners in the assessment process. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies; Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand II: SPED 442, SPED 452, SPED 453, SPED 454. Offered in fall, spring.

SPED 432: 3 s.h.**Curr & Mthds Mild/Moder Disabl**

Designed to develop competencies to identify curriculum content and implement effective methodologies needed to direct the education program for students with disabilities in the secondary classroom setting. Includes approx. 150 hrs field experience. Offered in fall, spring. Prereq: Admission to APS

SPED 441: 3 s.h.**Support for Specialized Curriculum**

This course provides teacher candidates with research-based methods and special techniques to effectively instruct students with severe/profound and multiple disabilities within a variety of educational settings. Teacher candidates develop the teaching skills required to plan for and institute positive intervention strategies in relevant curricular areas, including perceptual, motor, daily living, communication, leisure and socialization. The emphasis of this course will be upon implementing the Individualized Education Programs (IEP). Focus will be upon lesson plans, task analyses and accommodating students who require extensive or pervasive instructional supports and adapting specialized curricula to meet their learning needs. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies; Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand I: SPED 411, SPED 451, SPED 453, SPED 454. Offered in spring.

SPED 441H: 3 s.h.**H: Supprt for Specialzd Curric****SPED 442: 3 s.h.****Eff Instr for Stdnts w Disabil**

This course is designed to prepare teacher candidates to provide effective instruction to children with mild disabilities. The course will focus on developing skills for high-quality instruction based on research-based practices used to design and adapt curriculum to provide high-quality, standard-based instruction for students with mild disabilities, with an emphasis on the inclusive classroom. Course participants will learn to plan, implement and assess the results of effective instruction aligned with students' academic, social, emotional and behavioral needs to facilitate academic achievement, with an emphasis in development of literacy skills for students in need of supports in general education. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies; Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand II: SPED 412, SPED 452, SPED 453, SPED 454. Offered in fall, spring.

SPED 443: 3 s.h.**Reflective Practices (D, W)**

This course prepares teacher candidates with the necessary skills to develop cultural sensitivity to work effectively with diverse families and their students with disabilities (mild/moderate disabilities). Teacher candidates explore culture and diversity as they apply to families, educators, and influences on daily activities, identity development, and systems of power and privilege in the educational system. Teacher candidates develop their ability to be culturally responsive, open, and respectful educators. Teacher candidates develop their professional dispositions consistent with family and student centered educational planning, program implementation and community collaboration centered on students with disabilities (mild/moderate; severe/multiple disabilities) and their diverse families.

SPED 443H: 3 s.h.**Hon: Reflective Practices (D, W)****SPED 444: 3 s.h.****Transition Planning and Secondary Programming for Individuals with Disabilities**

This course is intended to develop competencies for individual program planning and instructional management. It prepares students to develop strategies to deliver curriculum in inclusive environments through the Individualized Education Program (IEP). The transition components of the IEP will be emphasized to prepare secondary teachers to understand their role in developing goals, planning and selecting options for postsecondary education, employment, and independent living goals for youth with disabilities.

SPED 445: 3 s.h.**Individualized Educational Planning**

This course prepares teacher candidates will identify students' strengths, needs, preferences, and interests to incorporate into Individualized Education Programs. Teacher candidates will compile the necessary data with the intent of facilitating success in current and future experiences, planning instruction, and implementing supports focused on an inclusive lifespan perspective of students with disabilities. Teacher candidates will learn to develop effective strategies for grade to grade transition practices to support services in the least restrictive environment. Teacher candidates will develop their knowledge of the variety of appropriate K-12 educational environments and supports for students and plan for these based upon current special education laws and regulations and the most effective research-based practices. This course must be taken as a co-requisite with other Professional Bloc II courses. Prerequisite: Admission to Advanced Professional Studies Status, successful completion of Professional Block I.

SPED 451: 3 s.h.**Indiv Ed Plnng for Svr Disabl**

This course prepares teacher candidates with the skills to plan, design and deliver instruction focused on integrated life-span perspectives of students with severe and multiple disabilities. A student's success in school can be linked, at least in part, to effective grade-to-grade transition practices and strategies. Teacher candidates learn to develop strategies for vertical (sequential and occurring over time) or horizontal (occurring at the same time) transitions. Teacher candidates develop their knowledge of the variety of appropriate K-8 educational environments for their students and plan for these transitions based upon current special education laws and regulations and the most effective research-based practices. Teacher candidates identify their students' needs, preferences and interests and incorporate this information into their goals, objectives and plans. In keeping with a student's Individualized Education Program (IEP), teacher candidates compile necessary data with the intent of facilitating successful future experiences. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies and Professional Bloc I courses of ERCH 421; SPED 321, 341. Coreq: SPED 411, 441, 453, 454. Offered in spring.

SPED 451H: 3 s.h.**H:Ind Ed Plnng for Svr Disabl**

SPED 452: 3 s.h.**Individualized Educ Planning**

This course prepares teacher candidates with the skills to plan, design and deliver instruction focused on integrated life-span perspectives of students with mild to moderate disabilities. There is a great deal of information indicating that a child's success in school can be linked, at least in part, to effective grade-to-grade transition practices and strategies. Teacher candidates learn to develop strategies for vertical (sequential and occurring over time) or horizontal (occurring at the same time) transitions. Teacher candidates develop their knowledge of the variety of appropriate K-8 educational environments for their students and plan for these transitions based upon current special education laws and regulations, and the most effective research-based practices. Teacher candidates conduct and use comprehensive grade-to-grade transition evaluations and learn strategies to identify their students' needs, preferences, and interests and incorporate this information into their goals, objectives and plans. In keeping with a student's Individualized Education Program (IEP), teacher candidates compile necessary data with the intent of facilitating successful future experiences. Prereq: Act 34, 151, 114 clearances; admission to Advanced Professional Studies and Professional Bloc I courses of ERCH 421, SPED 321, SPED 341. Coreq: Strand II: SPED 412, SPED 442, SPED 453, SPED 454. Offered in fall, spring.

SPED 453H: 3 s.h.**Hnrs: Reflective Practices (D, W)****SPED 463: 3 s.h.****EBPs for Math, Lit, Cntnt Area**

This seminar, taken in conjunction with Student Teaching, is for all teacher candidates in the PK-12 Special Education Certification program. This seminar provides teacher candidates the opportunity to refine their knowledge of evidence-based practices in literacy, mathematics, and the core content areas for students with exceptionalities in grades PK-12 (for example peer-assisted learning strategies, self-regulated strategy instruction, etc.). Teacher candidates will select, implement, and evaluate the success of evidence-based practices through the collection and analysis of student data.

SPED 479: 3 s.h.**Experimental**

Experimental

SPED 489: 1-4 s.h.**Honors Course**

For the definition of departmental honors and eligibility, refer to the Special Academic Opportunities section of this catalog.

SPED 498: 1-3 s.h.**Independent Study**

For further information, see the Special Academic Opportunities section.

SPED 499: 1-4 s.h.**Departmental Honors**

For the definition of departmental honors and eligibility, refer to the Special Academic Opportunities section of this catalog.

SPED 546: 3 s.h.**Sec Stdnts w Disab Inclu Sttgs**

This course is designed to prepare secondary education majors to effectively teach students with disabilities in inclusive classrooms. Participants will learn legal mandates, secondary general educators' role in the special education process, and the academic and social implications of inclusion. Participants also will learn to facilitate academic achievement for students with mild and moderate disabilities in inclusive secondary education by planning, adapting, and implementing effective instruction. Cross-listed with SPED 346, credit may not be received for both.

SPED 578: 3 s.h.**Special Education Law**

The purpose of the course is to learn about the legal background of special education from its historical experience through its rapid development in the 1970s and 1980s to its current and future impact. Students will become familiar and conversant in the Pennsylvania and Federal Regulations and Standards, appropriate case law, and how Section 504 of the Rehabilitation Act of 1973 impacts and interacts with special education law and the due process hearing system. Federal statutes governing special education will be reviewed. Offered periodically.

SPED 580: 3 s.h.**Diagnostic and Assessment Strategies for Students with Disabilities**

Specifically acquaints students with diagnostic and prescriptive methods for the accurate assessment of, and the systematic intervention with, learning or behavior problems of school-age students with mental/physical disabilities. Emphasis is placed on selecting and applying appropriate evaluation tools, programs, materials, techniques and psychological principles to learning for the student with disabilities. Offered in spring and summer.

SPED 586: 3 s.h.**Topics in Special Education**

Specific topics are chosen that may serve as a change agent for special education programs in which students with disabilities are the prime responsibility.

SPED 600: 3 s.h.**Orientation to Special Education**

Introductory overview of special education, primarily for individuals with no previous knowledge of the field. Emphasis is placed upon comprehension of definitions, terminology and classification systems. A general historic background for the areas of brain injured, mentally retarded, emotionally disturbed, socially maladjusted, and physical and learning disabilities are reviewed in terms of program development, laws and curriculum.

SPED 601: 3 s.h.**Psyc of Stdnts w/ Disabilities**

A survey course of physical, psychological and social aspects of individuals with disabilities. Special attention is paid to disability as a socially constructed experience for people with disabilities as it pertains to learning processes, educational systems and social roles. The historical development of education and human service programs for individuals with disabilities is given consideration. Current terminologies and trends are emphasized. Multicultural aspects are included as they pertain to special education.

SPED 611: 3 s.h.**Seminar in Learning Disabled**

Advanced study and research concerning the mind, mental processes, feelings, desires, actions, traits, attitudes and thoughts of children with neurological impairments and/or learning disabilities, as well as an investigation of major educational theories and approaches. The student will investigate the consistencies of the basic premises and issues of the field as well as establish the current state of the art. Emphasis will be on definition, identification, characteristics, education and research of students with learning disabilities. Offered in summer.

SPED 618: 3 s.h.**Advanced Topics in Early Intervention**

For practicing teachers or master-level students who will be called upon to develop, implement and evaluate early-intervention programs for students with developmental delays and students who are at risk for school delays. Includes examination of areas that interfere with normal development, assessment of the needs of young children and the design of programs to facilitate growth. Includes the importance of family involvement and evaluates instructional strategies intended to enhance the child's success. Covers skills in accordance with family-centered services and participation in interagency, collaborative efforts. - Course focuses on the role of the reading specialist as a literacy leader. Topics will include theoretical orientations, the observation and supervision of reading, principles of staff development, principles of coaching and leadership practices.

SPED 621: 3 s.h.**Multicultural Aspects**

Covers desirable changes in attitudes, perceptions, understandings and practices when working with children and youth who are educationally disadvantaged and whose disadvantage is caused by lower socioeconomic status or other demographic considerations, including race and ethnicity. Multicultural groups may include African Americans, Native Americans, Latin Americans and Appalachians. Remedial programs are evaluated and recommendations are made. Offered in spring.

SPED 642: 3 s.h.**Teaching Mild and Moderate Disabilities**

Provides education intervention and management model for the accurate assessment of, and systematic intervention with, mentally and/or physically handicapped school-age students. Emphasis is placed on selecting and applying specific evaluation tools, programs, materials, techniques and psychological principles to the learning of identified populations. Offered in summer.

SPED 651: 3 s.h.**Accomplished SPED Advocacy**

This course orientates the student with advanced opportunities, roles, and skills available to the accomplished special education teacher. Students will learn how to be effective advocates for students and their families, as well as how to develop leadership skills in the special education classroom and beyond. Emphasis will be placed on relevant professional organizations and careers that highlight special education advocacy and leadership. This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended.

SPED 652: 3 s.h.**Accomplished SPED Diversity**

Allows the student to examine and reflect upon a variety of social constructs, intercultural issues, and curriculum development through the lenses of special education history, disability studies and social justice. The implications for future research and practice will be explored in respect to the development of local, national and international policies for diverse children, adults and families impacted by disabilities. This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended.

SPED 653: 3 s.h.**Accomplished SPED Collaboration**

Designed to prepare educators to effectively collaborate and problem-solve with students, families, and other professionals. A major emphasis in this course will include co-planning, co-instruction, and co-reflection through demonstration lessons. Additional content in this course will address the legal requirements associated with referral and procedural safeguards for parents and youth with disabilities. Emphasis will be placed on consultation and communication strategies to facilitate collaboration within schools and the surrounding community. (3 credits) This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended.

SPED 654: 3 s.h.**Adv. Pedagogy Accomplished SPED**

Familiarizes experienced educators with an in-depth examination of research based pedagogical methods used to improve academic, social, behavioral, and transitional outcomes for Pre K-12 students with disabilities. Current instructional and assistive technologies will be explored. Specific topics and strategies explored in course will be aligned to the strengths and preferences of each student. Selection, implementation, and assessment of appropriate teaching strategies with an authentic audience will be expected. This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended.

SPED 665: 3 s.h.**Transition and Supportive Employment for Adults with Disabilities**

Transition planning for secondary students with disabilities, with specific emphasis on making appropriate job-placement decisions. Job categories will also be examined to assist in making meaningful matches between the worker and job. Programs that facilitate development of a congruence between job and employee are included, as well as agencies and other resources that might assist in job placement. Offered infrequently.

SPED 671: 3 s.h.**Behavior Management**

Intervention strategies for dealing with appropriate and inappropriate behaviors in individuals with disabilities. Opportunities to research and practice relevant classroom teaching and management skills, including the analysis of student behaviors, techniques for modifying targeted skill areas and methods for analyzing possible causes of behavior. Discussions of systematic procedures for evaluating the efficacy of certain management and intervention systems. Also emphasizes investigation and development of pragmatic solutions to students' current placement questions. Offered in fall.

SPED 681: 3 s.h.**Admin and Supervision of Sped**

Current issues and practices of special education curriculum and instruction, school law, budget process, staff development, teacher supervision, family collaboration and public relations are analyzed. Discussions are geared to effecting change to meet standards, student needs and best practices for students with special needs. Offered periodically.

SPED 689: 3 s.h.**Research Sem for Accomplish SPED**

Acquaints graduate students with relevant areas of needed research in the field of special education. Attention is given to discovering relevant problem areas for investigation. Historical, descriptive and experimental methods of research are covered. The value of research based teaching practices is stressed. A main purpose is to guide the student through an experience of writing a grant proposal and a literature review. Prereq: EDFN 601

SPED 690: 3,6 s.h.**Clinical Practicum**

This experience will be utilized by students who are certified in areas of education other than special education.

SPED 691: 1-3 s.h.**Independent Study in Spec Ed**

Independent Study in Special Education

SPED 693: 1-3 s.h.**Action Research**

In-depth approach to a specially and individually structured problem. Seminars to discuss recent trends and issues in special education will be included. Students may visit and become familiar with institutions, private schools and innovative public school classes for students with disabilities.

SPED 695: 1,3 s.h.**Accomplished SPED Captone**

This course enables the student to put theory into practice as it pertains to the professional contributions of an accomplished special education teacher. In accordance with the ongoing consultation of the instructor, the student will design, implement, and reflect upon a major capstone project aligned with the objectives of the program. Capstone examples include, but are not limited to (a.) action research, (b) creation/presentation of professional development, (c.) creation/presentation of original scholarship at a professional conference, (d.) mentorship of a pre-service or new special education teacher, (e.) grant writing. The course is 3 hours (pass/fail). However, if the student is unable to complete all requirements of the course during a single semester, they may re-enroll for 1 credit up to 2 additional, consecutive semesters for a total of 5 credits. This course requires both in-class instruction and out of class application. Regular access to a special education classroom is highly recommended. Pre-requisites: Completion of all SpEd MEd coursework. Up to 6 credits (not from the Knowledge Core) may be taken concurrently.

SPED 698: 1-3 s.h.**Ind Study:**

Independent Study in Special Education.

SPED 699: 3,6 s.h.**Thesis**

An applied research project pertaining to the education of students with disabilities. Research findings must be submitted to a professional journal and papers must be orally defended to a committee.

SPED 799: 3 s.h.**Appl Supervsn: Sped**

Provides prospective supervisors with field experience and problems encountered in the schools. Emphasis on defining and identifying pupils in all areas of disability, planning and operating a comprehensive special education program, and emphasis on techniques in assisting teachers in evaluating and improving their curricula and their teaching techniques.

Student Teaching in Art (EDAR)

EDAR 461: 4.5 s.h.**Elem Stu Tch: Art**

Elementary and secondary student teaching placements in art education. Offered fall, spring. Should be combined with EDSE 471. Prereq: Art 221, 322, 325.

EDAR 462: 4.5 s.h.**Secon Stu Tch: Art**

Elementary and secondary student teaching placements in art education. Offered fall, spring. Should be combined with EDSE 471. Prereq: Art 221, 322, 325.

Student Teaching in Elem Ed (EDEL)

EDEL 461: 6 s.h.**Eled Stu Teaching**

Eled Stu Teaching

EDEL 462: 6 s.h.**Eled Stu Teaching**

Students must satisfactorily complete student teaching in order to qualify for certification. Seminar sessions are required. Students in the dual certification elementary and special education program must have one experience in an elementary classroom and one experience in a special education classroom. Offered in fall, spring.

Student Teaching in English (EDEN)

EDEN 461: 4.5-9 s.h.**Student Teaching in English**

Student Teaching in English

EDEN 462: 4.5-9 s.h.**Student Teaching in English**

Student Teaching in English

Student Teaching in For Lang (EDFL)

EDFL 461: 4.5-9 s.h.**Student Teaching Forgn Lang**

Student Teaching Forgn Lang

EDFL 462: 4.5-6 s.h.**Student Teaching Forgn Lang**

Student Teaching Forgn Lang

Student Teaching in Math (EDMA)

EDMA 461: 4.5-9 s.h.**Student Teaching in Math**

Student Teaching in Math

EDMA 462: 4.5-6 s.h.**Student Teaching in Math**

Student Teaching in Math

Student Teaching in Music (EDMU)

EDMU 461: 4.5,9 s.h.

Musi Stu Teaching

Student teachers are assigned full-time to cooperating teachers to gain experience in the total activities of the school. One and one-half hours per week are scheduled for seminar with University supervisor. Offered in fall, spring.

EDMU 462: 4.5,9 s.h.

Musi Stu Teaching

Student Teaching in Science (EDSC)

EDSC 461: 4.5,9 s.h.

Student Teaching in Science

Student Teaching in Science

EDSC 462: 4.5,6 s.h.

Student Teaching in Science

Student Teaching in Science

Student Teaching in Soc Sci (EDSS)

EDSS 461: 4.5,9 s.h.

Student Teaching in Soc Sci

Student Teaching in Soc Sci

EDSS 462: 4.5-6 s.h.

Student Teaching in Soc Sci

Student Teaching in Soc Sci

Student Teaching in Special Ed (EDSP)

EDSP 461: 4.5,6 s.h.

Stu Tch: Sped, 1st

CR. Student Teaching- Special Education: 1st Half Semester

EDSP 462: 4.5,6 s.h.

Stu Tch: Sped, 2nd

Two full-time practicum experiences where students have an opportunity to apply educational strategies and interventions for students with mild, moderate and severe disabilities. (See Academic Policies; Student Teaching, Application and Eligibility; Student Teaching, Transfer Students).

EDSP 562: 4.5 s.h.

Post-Bacc Student Teaching

Post-Bacc Student Teaching

Technology Education (EDTE)

EDTE 179: 1-4 s.h.

Experimental

Experimental

EDTE 290: 3 s.h.

Children's Engineering

The intent of this course is to teach students about fundamentals of electricity, mechanisms, fluidics (liquids and gases under pressure), computer-control, and structures. Content will be delivered through a series of hands-on activities that will allow the students to immerse themselves in the content through problem-based learning by doing. Simple knowledge and skill building activities will lead to more complex open-ended problem solving and prototyping activities to build deeper understandings of scientific, technological, engineering, and mathematical (STEM) concepts for teachers of young children. Cross-listed with ERCH 290, students may not receive credit for both courses.

EDTE 291: 3 s.h.

Foundations of Technology & Engineering Ed

An introduction to the social, historical and philosophical foundations of technology & engineering education, leading to contemporary programs. Provision is made for observation of classroom and laboratory practices in selected schools. Prereq: Sophomore standing. Must meet current university requirements for field experiences (e.g., current clearances, negative TB test results on file). Not offered during summer sessions. Must achieve a "C" or higher to register for professional block courses.

EDTE 391: 3 s.h.

Curr & Inst in Tech & Eng Ed (W)

An investigation of curriculum design, instructional planning, and lesson delivery in K-12 technology and engineering education. The focus is on engaging teacher candidates in using contemporary strategies and technologies to plan, implement, and assess a standards-based curriculum that promotes students' technological literacy, creativity, engineering problem-solving, and design thinking abilities. Emphasis is placed on meeting the needs of all learners, including English language learners and students with disabilities. Field experiences are required in technology and engineering education classrooms. Prerequisites: Grade of "C" or higher in EDTE 291, EDFN 211, EDFN 241. Grade of "C" or higher in ENGL 110. Admission to advanced professional studies (APS) required. Co-requisites: EDSE 340 and SPED 346. A minimum grade of "C" must be earned in this class in order to progress to student teaching.

EDTE 461: 9 s.h.

Edte Stu Teaching

Student teachers are assigned full-time to selected mentors in the Lancaster area. They are supervised by University faculty and gain experience in the responsibilities of the teacher. Prereq: EDTE 391 with a "C" or higher and EDTE 496. Co-requisites: EDTE 491 and EDSE 471.

EDTE 462: 4.5,6 s.h.

EDTE Stu Teaching

EDTE 490: 3 s.h.

Integrative Learning Using Experiential Strategies

The purpose of this course is to engage students in curriculum planning, design and assessment that will enable them to identify, use, and evaluate experiential and integrative teaching-learning strategies that facilitate connections between all subjects in grades Pre-K to 6 (e.g., literacy, science, mathematics, social studies, arts, technology, physical education, engineering). Prerequisites: ERCH 110, ERCH 190, EDTE/ERCH 290, and AENG 344.

EDTE 491: 1 s.h.**Seminar in Techn & Engring Ed**

A seminar dealing with professional education issues and effective teaching and learning during the technology and engineering education student teaching experience. Emphasis on planning, teaching, managing, and assessing technology and engineering education units of instruction. Attention given to legal issues, safety, professional development, and meeting the needs of all learners in the technology and engineering education environment, including English language learners and students with disabilities. Pre-Requisites: EDTE 391 and EDTE 496; Co-Requisites: EDTE 461 and EDSE 471

EDTE 495: 3 s.h.**Integrative STEM Practicum**

This clinical practicum course provides opportunities for teacher candidates to bridge theory and practice. Students will demonstrate and apply knowledge, skills, and dispositions related to the implementation of integrative science, technology, engineering and math (STEM) education at the pre-K to grade 4 level. Emphasis is placed on the planning, development, implementation and assessment of integrative STEM instructional activities and lessons that use problem-based and experiential learning techniques targeted for Pre-K to grade 4 students. Includes field experiences. Prerequisites ERCH 110, ERCH 190, EDTE/ERCH 290, ITEC 344, EDTE 490 or 690 or Permission of Instructor; Advanced Professional Studies (APS) status required. Cross-listed with ERCH 495, credit may not be received for both courses.

EDTE 496: 2 s.h.**Innovatn/Design Methodologies**

Technology education methodologies for instruction in advanced design and innovation. Teams of students develop solutions to technological problems. 1 hr. lec., 3 hrs. lab. Prereq: ITEC 110, 120, 130, 140, 344; MATH 130 or higher; and ENGL 312 or 316.

EDTE 498: 1-6 s.h.**Ind Stdy:**

Independent Study in Technology Education

EDTE 586: 1-3 s.h.**Topics in Industry & Tech**

Investigation of one or more topics of current interest in industry and technology. Topics vary according to needs and interests of students and faculty involved.

EDTE 587: 1-3 s.h.**Topics in Industry & Tech**

Investigation of one or more topics of current interest in industry and technology. Topics vary according to needs and interests of students and faculty involved.

EDTE 588: 1-3 s.h.**Sp Topics in Industry & Tech**

Investigation of one or more topics of current interest in industry and technology. Topics vary according to needs and interests of students and faculty involved.

EDTE 589: 1-3 s.h.**Sp Topics in Industry & Tech**

Investigation of one or more topics of current interest in industry and technology. Topics vary according to needs and interests of students and faculty involved.

EDTE 603: 3 s.h.**Fostering Creativity by Design**

This course will expose students to the concept of how creativity, within the context of the technological world, is manifested through design. Whether it is during the ideation, development, use, modification and updating, or disposal of the artifact or system of technology, design is the overarching force that is present through each stage. Students will also explore the latest theories on creativity as well as the ways that a designer uses creativity and design thinking toward solving problems in an increasingly technologically complex world. Design-based thinking skills such as problem solving, decision making, researching, designing and creating, will be emphasized. The course is appropriate for all graduate students especially those in education, technological fields, and entrepreneurship.

EDTE 604: 3 s.h.**Engineering Principles and Concepts for the Non-Engineer**

The innovations and inventions of engineering design are vital toward enhancing the standards of living for humanity. In this course, which is intended for the non-engineer, students will learn what engineers do and how they do it. The connections between the engineering profession and society will be examined. This will include a review of engineering organizations and their standards, problem solving techniques and the methods of modeling systems.

EDTE 605: 3 s.h.**Applying Critical Thinking and Decision Making**

An exploration of the nature and application of critical thinking toward acts of decision making. Students will learn how to understand, facilitate, and practice the techniques of disciplined critical thinking and decision-making while avoiding the pitfalls of thinking traps such as biases and irrational tendencies. The course has been designed to address a variety of audiences including all teachers at all levels as well as entrepreneurs and individuals from business and industry, the sciences and the technological fields.

EDTE 646: 3 s.h.**Writing the Professional Paper**

Development of competencies for identifying and developing graduate research topics and for publishing in professional literature. Emphasis on research methods, organization and effective writing. The satisfactory completion of this course is required before pursuit of EDTE 698 Research and Development in Technical Areas or EDTE 699 Thesis.

EDTE 679: 1-3 s.h.**Experimental****EDTE 690: 3 s.h.****Integrve Lrning Exprntl Strgy**

The purpose of this course is to engage students in curriculum planning, design, and assessment that will enable them to identify, use, and evaluate experiential and integrative teaching-learning strategies that facilitate connections between all subjects in grades Pre-K to grade 6 (e.g., literacy, science, mathematics, social studies, arts, technology, physical education, engineering).

EDTE 691: 1-6 s.h.**Independent Study**

Pursuit of a topic of special interest and of potential application in technology education. Written proposal must be approved by an appropriate faculty sponsor, the graduate program coordinator and the department chairperson prior to the semester of formal registration in this course. Completion of an approved independent study includes a written research report, which partially determines the grade received.

EDTE 698: 6 s.h.**Research and Development Technical Project**

Design, execution and communication of applied research in technology education. Emphasis on recent technological advances and experimentation with contemporary processes, materials and techniques. Three types of applied research may be pursued: technical project, innovative instruction or technical research. Study is guided by a faculty adviser. Research and development results and applications are recorded as a research report.

EDTE 699: 6 s.h.**Thesis:**

Planning, conducting and recording basic research in technology education. Includes application of an experimental, descriptive, historical or other pertinent educational research method. Study is guided by research adviser and faculty committee. Research results and interpretation are recorded as a thesis.

Theatre (THEA)

THEA 120: 3 s.h.**Stagecraft (G1)**

An introduction to technical theatre. Topics include the construction and handling of scenery, scenic painting, stage lighting, and the proper, safe use of tools and equipment. Offered annually.

THEA 130: 3 s.h.**Acting 1 (G1)**

Training in the art and craft of acting. Emphasis on developing basic skills and exploring the creative process. Elementary scene and monologue work. Offered in fall.

THEA 179: 3 s.h.**Experimental**

Experimental

THEA 208: 1-3 s.h.**Theatre Practicum**

Experiential learning through performance and practice in a mainstage production. A practical course for student actors, performers, directors, choreographers, writers, and stage managers. Open to all majors. 1, 2, & 3 credit sections offered regularly. Pre-req: Permission of instructor through audition or interview.

THEA 217: 3 s.h.**Theatre Appreciation (G1)**

A discussion of the theatre experience for the student with an interest in theatre, including audience perspective, historical influences, and contemporary performance and technical theatre practices. Offered in annually.

THEA 230: 3 s.h.**Acting 2 (G1)**

Further explores the purpose of acting and underlying principles, as well as training voice and body to project characterization. Offered biannually in spring. Prereq: THEA 130 or permission of instructor.

THEA 240: 3 s.h.**Script Analysis (G1)**

The techniques and methodology of script analysis with an emphasis on those aspects useful to the production staff in preparation of plays for production. Offered biannually in the spring.

THEA 279: 3 s.h.**Experimental**

Experimental

THEA 300: 3-12 s.h.**Co-Op Ed Experience in Thea**

Co-Op Experience in Theatre

THEA 310: 3 s.h.**Costume for Stage & Media**

A survey of the process and techniques of designing and accomplishing costuming for theatre and other media. Script and character analysis, costume period styles, and basic construction techniques will be studied. The course is valuable for Actors and Directors as well as Designers and Technicians. Previous experience in art and sewing are not required.

THEA 312: 3 s.h.**Hist/Princpls of Stage Design (G1)**

Scenic, costume and lighting design aesthetics throughout history and as they apply to today's theatre. Art experience is not required. Offered infrequently.

THEA 315: 3 s.h.**Directing**

Practical experience in both directing and coaching actors. An overview of directing process and directing style. Offered biannually in spring. Prereq: THEA 130 or permission of instructor.

THEA 317: 3 s.h.**London Theatre Tour (P)**

Theatre as it developed in London, England. The course, in conjunction with the London Metropolitan University, requires attendance at four contrasting professional theatre performances in London as well as backstage tours of the Globe Theatre, the National Theatre and the Royal Theatre Drury Lane. Offered in summer of even years. Prereq: junior status, COMM 100, ENGL 110.

THEA 340: 3 s.h.**History of Theatre 1 (G1, W)**

Detailed study of development of all phases of theatre art and dramatic literature from its origin to 1850. Offered in rotation with THEA 341. Prereq: ENGL 110, COMM 100.

THEA 341: 3 s.h.**History of Theatre 2 (G1, W)**

Survey of European and American drama from the time of Ibsen to the present, tracing development of dramatic literature from the rise of realism to contemporary experimentalism; emphasis on plays illustrating significant trends and movements. Offered in rotation with THEA 340. Prereq: ENGL 110, COMM 100.

THEA 350: 3 s.h.**Theatre Management**

Introductory survey of theatre management, which addresses concerns related to theatre. An overview of the theatre manager's role, focus on strategic planning, organizational design, economics and the theatre, unions; and financial concerns which affect the success of theatre organizations. Offered infrequently. Prereq: COMM 100 and ENGL 110.

THEA 400: 3-12 s.h.**Co-Op Ed Experience in Thea**

Co-Op Ed Experience in Thea

THEA 412: 3 s.h.**Topics in Theatre**

Advanced work in the area of theatre production. May be taken more than one semester for credit as topic varies. Topics include stage management, costume and make-up, scenic painting, stage voice, careers in theatre. Offered annually with different topics. Prereq: THEA 120.

THEA 479: 3 s.h.

Experimental
Experimental

THEA 498: 1-3 s.h.**Independent Study**

For further information on independent study, see the Special Academic Opportunities section.

THEA 499: 1-4 s.h.**Departmental Honors**

Departmental Honors

THEA 500: 3-12 s.h.**Co-Op Ed Experience in Thea**

Co-Op Ed Experience in Thea

University (UNIV)

UNIV 001: 0 s.h.**MU Transitions****UNIV 002: 0 s.h.****MU 180 Degree Seminar****UNIV 003: 0 s.h.****MU Seminar****UNIV 101: 1 s.h.****Freshman Seminar**

Freshman Seminar

UNIV 103: 3 s.h.**First Yr:**

Each First Year Inquiry (FYI) Seminar section focuses on a different topic of strong interest to faculty and students. Seminars jump-start the process of intellectual inquiry through a free exchange of ideas during and outside of class. FYI instructors mentor and assist students in developing a meaningful and purposeful approach to their college experiences. The FYI Seminar counts in the Connections and Exploration area of the General Education curriculum.

UNIV 179: 1-3 s.h.**Experimental**

Experimental

UNIV 900: 0 s.h.**MED SPED PLACEMENT**

Wellness & Sport Sciences (WSSD)

WSSD 103: 3 s.h.**Foundations for Success**

"Obstacles don't have to stop you. If you run into a wall, don't turn around and give up. Figure out how to climb it, go through it, or work around it." This mantra by Michael Jordan, Hall of Fame professional basketball player, serves as a foundation for success. This course explores the power of caring mentors to shape an individual's future. In this course we explore how education improves humanity. Amazing people don't just happen! Students will learn how to develop a growth mindset and through a process called critical inquiry, reflect on themselves and learn how to secure good mentors in their lives to partner in their future success. Using teaching and coaching as a framework, students will also recognize the pedagogical techniques used in their classes and how all students can best respond to those techniques to be successful in college. The course is open to all students and not intended as an introduction to a major course.

WSSD 110: 1 s.h.**Medical Terminology**

The study of medical terminology introduces students to the language of medicine. Students will gain an understanding of basic elements, rules of building and analyzing medical words, and medical terms associated with the body as a whole.

WSSD 279: 1-3 s.h.**Experimental**

Experimental

WSSD 300: 3-12 s.h.**Co-Op Ed Experience in Wssd**

Co-Op Ed Experience in Wssd

WSSD 310: 3 s.h.**PE for Elementary Schools**

Methods, materials, facilities and equipment for programs of health and physical education in elementary schools. Opportunities for observation of children at play, making equipment, program planning and teaching. Offered in fall, spring.

WSSD 311: 3 s.h.**Resp to Emergen: First Aid CPR**

Preparation of students to develop skill and knowledge enabling them to administer first aid in the case of an accident or sudden illness. Certification in CPR and standard first aid according to American Red Cross standards.

WSSD 350: 3 s.h.**Sport in North America (D, W)**

Examines major issues in North America sport both in the past and at the present. It emphasizes developing a historical and environmental perspective of the evolution in modern North America sports. Students will study various social and cultural issues that have significantly influenced the development of sport – race and ethnicity, nationality, occupation, gender and sexual orientation, religion, economics, education, social class, and politics. It explores the implications of the continuous evolution of sports in North American society.

WSSD 358: 3 s.h.**Sport Fundraising & Devel Prin**

Introduces students to the unique nature of sport fundraising at both the professional and amateur levels. Principles and practices of fundraising and donor development specific to the sport business environment combining theory and practical advice.

WSSD 360: 3 s.h.**International Sport Management (D)**

Students will be introduced to a wide range of issues concerning international sport management, such as globalized sport industry, emerging trends in international sport, governance in international sport, international sport business strategies, and frontiers in international sport management. They will examine specific issues, challenges, as well as opportunities within the domain of international sport management. The course will cover many professional sporting events in every continents and regions of the world regarding their backgrounds, the participants in terms of athletes and spectators, the governance and management of the events, and the economic impacts.

WSSD 375: 3 s.h.**Prevention and Care of Athletic Injuries**

Basics of prevention, recognition, care, assessment, treatment and rehabilitation of injuries to physically-active populations. Survey of the musculoskeletal anatomy; tissue response to injury; protective equipment; emergency procedures in sport; environmental concerns; mechanisms of sport injury; injury prevention, assessment and management; and abnormalities and disabilities as they apply to athletic participation. Prereq: WSSD 311.

WSSD 384: 3 s.h.**Contemporary Issues in Sport (W)**

Students will be introduced to a wide range of sporting issues, such as violence, cheating, doping, and corruption as well as broad themes that can be examined using sport as a lens to view society. The course will cover sport at the youth, intercollegiate, and professional levels considering how sport at these levels is differently experienced by individuals, communities, organizations, and broadly by society.

WSSD 390: 4 s.h.**Athlct Trng Tech w/ Surf Anatm**

This course introduces students to the fundamental principles and basic techniques used by Certified Athletic Trainers (ATCs). Topics will include appropriate taping, wrapping and bracing procedures commonly prescribed for athletic injuries, selected therapeutic modalities, and an understanding of basic anatomy and functions of the musculoskeletal system, including an orientation to the major anatomical landmarks and underlying body structures. Pre-Athletic Training majors only. Offered in summer.

WSSD 395: 3 s.h.**Leisure Activies for the Aged**

CR. Leisure Activities for the Aged

WSSD 400: 3-12 s.h.**Co-Op Ed Experience in Wssd**

Co-Op Ed Experience in Wssd

WSSD 410: 3 s.h.**Intl. Sport Issues & Industry (P)**

The purposes of this course are to introduce students to global sport-related issues and industries and to obtain firsthand experience in international sport events or organizations through a study abroad opportunity.

WSSD 410H: 3 s.h.**Hon: Intl. Sprt. Issues/Indust (P)****WSSD 450: 3 s.h.****Kinesiology and Phys Found of Sport**

The study of movement, specifically dealing with movement of the human body, including mechanics, laws of motion, anatomy and the detailed analysis of coaching activities. The functions of the various systems of the human body under stress of muscular activity that are basic for the development and maintenance of physical fitness and sport.

WSSD 452: 3 s.h.**Nutrition for Performance Enhancement**

This course will provide a comprehensive overview of the nutritional needs of athletes and how proper nutrition may lead to better overall personal health and performance. Course restricted to Junior/Senior status and students in the Allied Health Technology, Sport Administration, Athletic Coaching, Pre-Athletic Training and Sports Medicine majors minors or concentrations only.

WSSD 454: 3 s.h.**Leadership Development in Sports**

This course is designed for students involved in the athletic coaching minor program as well as any student who wants to learn more about leadership in sports. To be a successful coach, it is essential to understand key leadership concepts such as motivation, integrity, team building and influencing people. The program content of this class will reflect these key leadership issues as well as other areas like vision, problem solving, building effective relationships, group dynamics and diversity. In addition, all participants will complete a "Leadership Project." The "Leadership Project" will be a well-conceived vision and plan for action for the participants to implement upon completion of the class.

WSSD 479: 3 s.h.**Experimental**

Experimental

WSSD 480: 3 s.h.**Theory & Tech of Coach & Sprt**

Theory and techniques of the function, organization and administration of athletics in the total education program. Certification in Coaching Principles and Sport First Aid is available through the American Sport Education Program. Offered annually.

WSSD 482: 3 s.h.**Coaching Effectiveness**

Course introduces students to the fundamental principles and basic techniques used by athletic coaches. Topics include skill acquisition, competitive sport strategies, practice planning and game tactics to assist athletic coaches in designing successful athletic programs.

WSSD 483: 3 s.h.**Legal Aspects of Sport**

Instruction in prevention, treatment and care of athletic injuries. Legal and moral responsibilities in supervising elementary and secondary student athletes are discussed. Certification in sport law is available through the American Sport Education Program. Offered in fall, spring.

WSSD 484: 3 s.h.**Psyc-Soc Foundation Coaching**

The psychosocial factors affecting human behavior in modern society as applied to coaching situations and the historical development of sports programs. Offered periodically.

WSSD 485: 3 s.h.**Perf Enhance:Mntl Trng in Sprt**

This course will help students understand how psychological factors affect an individual's physical performance and understand how participation in sport and exercise affects a person's psychological development, health and well-being. By the end of this course, students will view sport and physical activity as agents for personal and social change. Offered periodically. Prereq: PSYC 100 for the B.S. BIOL/PATHL; WSSD 480 for athletic coaching minor.

WSSD 486: 1-3 s.h.**Topics**

Detailed investigations of a topic of current interest. Topic to be announced each time course is offered.

WSSD 489: 1-4 s.h.**Honors Course**

WSSD 491: 3 s.h.**Exercise Physiology**

Theory and laboratory experiences relating to the mechanisms by which the body adapts physiologically to selected conditions of muscular performance within the context of physical activity and sports. Laboratory experiments will include circulatory and respiratory response to exercise, respiratory metabolic measurements, identification of the ventilatory threshold, assessment of maximal oxygen uptake, energy cost of physical activity and assessment of body composition.

WSSD 492: 1-3 s.h.**Seminar in Sport Science**

Group discussions. General theme to be determined by professor. Prereq: senior standing and 15 s.h. of WSSD courses.

WSSD 498: 1-3 s.h.**Ind Study:****WSSD 499: 1-4 s.h.****Dept Hnrs:****WSSD 500: 3-12 s.h.****Co-Op Ed Experience in Wssd**

Co-Op Ed Experience in Wssd

WSSD 525: 3 s.h.**Growth, Maturation & Phys Act**

Introduction to the anatomical, physiological and psychosocial issues related to exercise and physical activity in children and adolescents such as effects of maturation, growth and puberty on physical performance.

WSSD 551: 3 s.h.**Coaching of Sport**

Designed to develop the major area of knowledge pertinent to the profession of coaching. The American Sport Education Program (ASEP), dealing with sport philosophy, sport psychology, sport pedagogy, sport physiology, sport first aid and sport management, will be presented. Students may take the certification exam. Offered periodically.

WSSD 581: 3 s.h.**Performance In Sport**

Provides a clear understanding of factors to be considered when analyzing human movement pertaining to sport and athletic competition. Offered periodically.

WSSD 582: 3 s.h.**Sport Psychology**

Focuses on the latest psychological skills training techniques for both coaches and athletes. The latest techniques in neurolinguistic programming and its implications for coaches and athletes will be utilized. Students will be introduced to and learn the latest mental-training techniques of Olympic and professional athletes. Offered periodically.

WSSD 590: 3 s.h.**Drug and Alcohol Symposium**

CR. Drug and Alcohol Symposium

WSSD 601: 3 s.h.**Organization and Administration of Sport Programs**

Includes regulations of sport-governing bodies, federal law, academic integrity, institutional control, financial effectiveness and welfare of sport personnel and participants. Offered periodically.

WSSD 602: 3 s.h.**Sport in American Culture**

An examination of 20th-century American culture and the role played in it by sports. Areas which will come under scrutiny include, but are not limited to, the family, labor, industry, schools, churches, race relations and democracy as they relate to sport in American culture. Offered periodically.

WSSD 603: 3 s.h.**Moral and Ethical Issues in Sports**

An inquiry into ethics and morality as these apply to sport management. Competition, violence, rules, drugs and athletic scholarships are some of the concepts examined. Various ethical approaches are considered. Offered periodically.

WSSD 604: 3 s.h.**Event Management**

Principles of financing, operating and managing public-assembly facilities. Emphasis on event management in arenas. Lectures, projects, papers and practical experience emphasized. Offered periodically.

WSSD 605: 3 s.h.**Sport and the Law**

U.S. legal system; negligence law; intentional torts and criminal acts, including assault and battery, hazing, and violence in sport; and risk identification and management. Constitutional law issues, including state action, due process, equal protection, search and seizure/privacy issues and drug testing. Federal statutes, including Title IX, Title VII of the Civil Rights Act of 1964, Title I of the Americans with Disabilities Act, and contract law. Offered periodically.

WSSD 610: 3 s.h.**Women in Sport**

Examines the history of female participation, women's relationships to changing female roles and ideals, and the attitudes of society toward competition for women. Includes an overview of women's sport organizations, federal laws and the motivations of female athletes. Offered periodically.

WSSD 612: 3 s.h.**Research Methods in Sport**

Overview of the nature of research in sport sciences. Topics include different types of research methods in sport, research design, skills in data collection and assessment, and application of research to the management of sport.

WSSD 615: 3 s.h.**Campus Recreation Program**

Overview includes budgets, personnel, facilities, legal concerns, gender issues, planning and evaluation, publicity and evaluation. Programming areas include intramurals, extramurals, informal sports, club sports and outdoor pursuits. Offered periodically.

WSSD 616: 3 s.h.**Internship for Athletic Management**

Practical experience related to athletic management. Students will coordinate their course work with specific field experience. Program supervised by a member of the Department of Wellness and Sport Sciences. Students must contact the graduate coordinator of sport management one semester prior to enrolling to complete the Internship Application packet. Prereq: WSSD 601, 602, 603, 604 and 605

WSSD 617: 3 s.h.**Sport Conditioning**

The physiological principles underlying the process of physical conditioning. The student will also learn how to apply these principles to individuals training for sport and physical fitness. Offered periodically.

WSSD 618: 3 s.h.**Athletic Injuries**

The basic principles of sports medicine. Emphasis on injury prevention, management and rehabilitation. Current topics and methods in athletic training are also discussed. Offered periodically.

WSSD 619: 3 s.h.**Internship for Athletic Coaching**

Practical experience related to athletic coaching. Students will coordinate their coursework with specific field experience. Program supervised by a member of the Department of Wellness and Sport Sciences. Students must contact the graduate coordinator of sport management one semester prior to enrolling to complete the Internship Application packet. Prereq: WSSD 601, 602, 603, 604 and 605.

WSSD 621: 3 s.h.**Nutrition for Exercise and Sport**

Complete study of nutrition and its effects upon exercise and sport. Offered periodically.

WSSD 622: 3 s.h.**Sport Finance**

Provides students with an improved understanding of sports-related finance issues and expands their skills in financial analysis and planning. Develops an appreciation for the financial decision-making process in sports business. Using a number of case studies and selected readings, the course will include the following topics: organization, accountability, financial planning, purchasing, revenue streams, sponsorship, licensing, franchises, box office operations, retail operations, customer retention, fundraising, grant writing, booster clubs, working with volunteers, financial risk management and payroll procedures.

WSSD 686: 1-3 s.h.**Sp Topics:**

In-depth investigation and development of an area of current sport management interest. Offered periodically.

WSSD 687: 1-3 s.h.**Sp Topics:**

In-depth investigation and development of an area of current sport management interest. Offered periodically.

WSSD 688: 1-3 s.h.**Sp Topics:**

In-depth investigation and development of an area of current sport management interest. Offered periodically.

WSSD 689: 1-3 s.h.**Sp Topics:**

In-depth investigation and development of an area of current sport management interest. Offered periodically.

WSSD 691: 1-3 s.h.**Ind Study:**

Intensive study of a particular field or problem in sport management not normally covered in a regular course. Offered as needed.

WSSD 698: 3 s.h.**Research Proposal**

To fulfill the requirements of the course, students must satisfactorily complete an introduction, a review of literature and provide a written research design. APA format will be used for the research proposal. Offered as needed.

WSSD 699: 3 s.h.**Thesis**

Each student writes and orally defends a study of some significance in the field of sport management demonstrated by (1) an individual bound thesis or (2) by condensing his/her findings and submitting them to a professional journal. APA format will be used for the thesis. Offered periodically.

Wellness (WELL)

WELL 175: 3 s.h.**Wellness**

This course offers a comprehensive discussion of the dimensions of wellness including such topics as physical fitness, nutrition, psychological well-being, time- and stress-management, STI prevention, sexual violence risk reduction, active bystander interventions, addictive behaviors related to alcohol and other drugs, cultural responsiveness, as well as chronic diseases. The course includes useful and practical advice for adopting a wellness lifestyle that considers individual interests, goals, and life situations.

WELL 240: 3 s.h.**Health, Safety, Nutr for Child**

This course is designed to address the essential components of children's wellness. The course will present ways to promote children's health through awareness, effective practices and knowledge of health issues; address the creation and maintenance of safe environments for young children; and meet children's essential nutritional needs through nutrition education and planning. Emphasis will be placed on preventive health practices, the promotion of lifelong physical activity, and on the collaborative effort of families and teachers in the promotion of these wellness issues in the face of current health issues for children, especially obesity. Offered in fall, spring.

Women's, Gender and Sexuality Studies (WSTU)

WSTU 220: 3 s.h.**Introduction to Women's & Gender Studies (G3)**

Interdisciplinary and multicultural study of women's roles and relationships and the ways they differ among women by race, ethnicity, class and sexual orientation. Overview of theoretical perspectives on gender and examination of contemporary issues facing women.

WSTU 300: 3-12 s.h.**Co-Op Ed Experience in Wstu**

Co-Op Ed Experience in Wstu

WSTU 330: 3 s.h.**Feminist Theory (P)**

This course explores diverse strains of feminist theory, including liberal, radical, black, global, socialist/Marxist and lesbian feminisms. This is a required course for all women's studies minors. Prereq: COMM 110, ENGL 110, WSTU 220, junior status or instructor permission.

WSTU 330H: 3 s.h.**Hon: Feminist Theory (P)**

WSTU 379: 3 s.h.

Experimental
Experimental

WSTU 400: 3-12 s.h.

Co-Op Ed Experience in Wstu
Co-Op Ed Experience in Wstu

WSTU 488: 3 s.h.

Senior Seminar (G3, W)

Interdisciplinary and multicultural examination of how feminist perspectives and a focus on women can restructure social institutions, ways of thinking and academic disciplines. Prereq: ENGL 110, junior or senior status, and WSTU 220 or another approved women's studies course or permission of instructor.

WSTU 489: 1-4 s.h.

Honors Course
Honors Course

WSTU 491: 1-3 s.h.

Topics Women's & Gender Study

Investigates topics related to women's and gender studies in history, literature, music, art, anthropology, sociology, communications, business, science or other field.

WSTU 498: 1-6 s.h.

Ind Study:

Allows students to pursue an academic area of interest not available through an established course, with faculty supervision and guidance. For further information, see the Special Academic Opportunities section of the catalog, and consult with the director of women's studies.

WSTU 500: 3-12 s.h.

Co-Op Ed Experience in Wstu
Co-Op Ed Experience in Wstu

Writing (WRIT)

WRIT 272: 3 s.h.

Introduction to Writing Studies (G1, W)

Focuses on some of the major areas of scholarship related to the practice of writing: literacy practices; historical accounts of writing instruction; the relationship of classical rhetoric to contemporary writing; writing across the curriculum; studies of professional and workplace writing; computers and writing; social, political and economic dimensions of writing; and others. Prereq: ENGL 110.

WRIT 273: 3 s.h.

Writing in the Disciplines (G1, W)

Examines writing across three major academic domains: sciences, social sciences and humanities. Explores how disciplinary conventions and rhetorical contexts call for different writing strategies, particularly different choices in purpose, content, language, style, voice, tone and organization.

WRIT 274: 3 s.h.

The Craft of Writing (G1, W)

Explores writing as a varied set of deliberate, artful choices in regard to designing and stylizing diverse persuasive texts, all crafted for specific audiences-emphasizing a mindful focus upon language for students at all levels of preparation. The course invites students to experience, in texts of all kinds, the interplay of argumentative structure and style that impacts readers: both rhetorical awareness and stylistic agility. As a topics course, ENGL 274 will permit instructors to select various genres of writing and styles to challenge students' practice. Prereq ENGL 110, repeatable up to 6 credits.

WRIT 280: 3 s.h.

Intro to Rhetoric for Writers (G1, W)

Introduces students to rhetorical theory and concepts useful to their lives as writers broadly defined. We will explore how people argue, persuade and identify with one another by analyzing texts across genres and historical periods. Prereq: ENGL 110, 30 credit hours

WRIT 311: 3 s.h.

Advanced Composition (AW)

Exploration, evaluation and writing across diverse and dynamic writing contexts to create rhetorically sophisticated texts, such as memoirs, socially expressive essays or other varieties of creative nonfiction; Classical and/or Rogerian arguments; ethnographic studies; varieties of public discourses; innovative, multigenre researched writing; summaries, abstracts and literature reviews; and texts designed for websites, wikis and blogs. Prereq: ENGL 110 or equivalent, 60 s.h.

WRIT 312: 3 s.h.

Technical Writing (AW)

Writing of scientific and technical reports, manuals, technical articles and correspondence. Emphasis on data collection and analysis. Prereq: ENGL 110 or equivalent, 60 s.h.

WRIT 316: 3 s.h.

Business Writing (AW)

Informative and persuasive writing in business and industry. Extensive practice in writing letters, memorandums, proposals and reports. Emphasis on business writing strategies and processes. Prereq: ENGL 110 or equivalent, 60 s.h.

WRIT 317: 3 s.h.

Editing for Publication (G1, W)

Focuses on the role of the editor in publishing. Developing skills to improve copy for publication, designing content for websites and blogs as well as creating photographic, audio and video material for use on the web. Prereq: ENGL 110 or equivalent

WRIT 318: 3 s.h.

Web Writing (AW)

Explores concepts, techniques and strategies for authoring, managing and publishing reusable web content. Covers content strategy frameworks and writing techniques used in interactive experience projects. Prerequisite: ENGL 110, 60 credit hours.

WRIT 318H: 3 s.h.

Hon: Web Writing (AW)

WRIT 319: 3 s.h.**Science Writing (AW)**

This course will teach aspiring science writers and/ or scientists to effectively write about research for audiences both inside and outside of the sciences. The course will establish the premise that science is a social enterprise that, in addition to research acumen, requires rhetorical skill. Focusing on rhetorical skill, this class will analyze the communication strategies scientists and science writers use to argue for research findings, advocate public policy positions, and communicate risk. Students will consider how scientific texts address audiences, use key terms, and argue for their validity with quantitative and visual evidence. Students will also investigate how such specialized knowledge can be effectively and ethically accommodated for non-specialist audiences. Students will be encouraged to bring their own research interests into class projects to draw from and develop their voice as an expert. Students will engage these topical interests in assignments in which they write for disciplinary and interdisciplinary audiences as well as for non-academic audiences. Each context will require careful analysis and strategy to effectively meet audience expectations, which this course will cultivate through readings, sample analyses, and Writing exercises. In this class, students will develop a rhetorical approach to planning and producing scientific writing. This means that students will learn to analyze an audience, the purpose of the document, and the context of the document. Students will use those insights to plan, create, and revise documents that effectively communicate your message. This course will emphasize precision of language necessary to effectively communicate science from the sentence-level up to the whole document. Students will develop skills in inventing ideas, drafting, revising and in peer review. Peer review will be an especially important skill in this class as it models the professional behavior of scientists. Prereq: ENGL 110 and 60 credit hours (Jr Status)

WRIT 319H: 3 s.h.**Hon: Science Writing (AW)****WRIT 340: 3 s.h.****Rhetorical Analysis (G1, W)**

Analyze the rhetorical strategies of public writing, argument, and textual production. Students will apply theories of rhetoric and use rhetorical analysis to investigate genres of writing.

WRIT 342: 3 s.h.**Reading/Writing for Civic Change (W)**

An introduction to the theory and practice of public discourse, with emphasis on civic discourse. Focuses on exploring the nature and function of being a citizen within a community and developing discourse skills to effect change in communities. Prereq: ENGL 311 or 312 or 313 or 316 or 318 or 319.

WRIT 343: 3 s.h.**Theories of Rhetoric**

Principal figures, theories, and movements in rhetoric from the classical period to the present. The relationships between rhetoric and political, social and personal decisions are explored. Prereq: COMM 100.

WRIT 466: 3 s.h.**Sp Top Writing: (W)**

In-depth investigation of topics in writing studies theory. May be taken more than once for credit with varied topic. Prereq: ENGL 311 or 312 or 313 or 316 or 318 or 319 or WRIT 311 or 312 or 316 or 318 or 319.

WRIT 471: 3 s.h.**Creative Writing**

Extensive practice in writing fiction and poetry. Inquiry into the social functions and purposes of fictional and poetic writing. Prereq: ENGL 110.

WRIT 472: 3 s.h.**Digital Portfolio**

Extensive written work focused on the creation of a professional, digital portfolio to showcase interests, experience and accomplishments to be used for application to graduate school or future employment. Critiques and considerable discussion of other student papers. Prereq: ENGL 311 or permission of instructor.

WRIT 671: 3 s.h.**Special Topics in Rhetoric**

Explores the context and effect of persuasive strategies as seen through the lens of a particular topic or period of history. Provides advanced examination of rhetorical principles relevant to the topic.

WRIT 672: 3 s.h.**Sem: Rhetoric/Composition**

Classical and modern theories of rhetoric and their application to the teaching of writing. Effective instructional methods and materials will be examined. Offered periodically.

WRIT 673: 3 s.h.**Professional Writing Workshop**

Focus upon the rhetoric(s) of professional communication within the contexts of students' own on-the-job writing: how to thoughtfully select language, visual and audio texts, and deliberately designed formats to accommodate writers' intentions as creative problem-solvers and to meet the needs of diverse audiences. This course is designed for both practicing professionals and working people aspiring to new professional positions. In a workshop format and, at times, working in teams, students will compose modes of discourse typical of professional writing, including but not limited to electronic and/or print ad copy, web content, brochures, non-profit pamphlets, letters, informal reports, formal reports, promotional campaigns, and/or recommendations; social media writing for websites, wikis and blogs; students' own websites, wikis, and blogs.

WRIT 674: 3 s.h.**New Media Rhetoric**

Gain a rhetorical and theoretical understanding of how texts operate in our increasingly sophisticated online media culture. Examine these new media texts as they appear on the Internet with a particular emphasis on social media as well as old media that is being transformed by/in/to the digital. Learn to follow these processes of text (re)mediation as they take place through perceptual and temporal processes, movement, and memory.

WRIT 675: 3 s.h.**Community Writing**

Focuses on the theory and practice of community literacy and citizen engagement in the community. Emphasizes research on community literacy and action-oriented projects meeting community literacy needs.

WRIT 682: 3 s.h.**Genres in Nonfiction Writing**

Exploration of theories and practices of creative non-fiction, including but not limited to memoirs, profiles, histories, biographies, travel literature, blogging, and nature writing in diverse modes (print, digital, & visual) for diverse audiences and purposes.

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