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 GaussBonnet theorem. Rigid motions and isometries. Riemannian metrics, parallelism, non-Euclidean geometries and applications. Offered periodically.

Prereq: C- or higher in MATH 310, 311, 322.