MATH 4382: Real Analysis II

3 Credit Hours

Prerequisite: MATH 4381

This course is a continuation of the study of functions of a real variable (Real Analysis I). Topics include the Riemann/Darboux integral, differentiability, sequences and series of functions. The aim of the course is to provide the students with a deeper understanding of the notions of sequences/series, integrability, and differentiability of functions of a real variable, as well as their properties and interconnections. While developing these concepts, we will focus on understanding and writing formal proofs, as well as emphasize their applications.

MATH 4391: Complex Analysis

3 Credit Hours

Prerequisite: MATH 2203

This course is an introduction to the basic concepts of complex analysis, its beautiful theory and powerful applications. Topics covered will include: the algebra and geometry of the complex plane, properties of elementary functions of a complex variable, analytic and harmonic functions, conformal mappings, continuity, differentiation, integration (Cauchy integral theory), singularities, Taylor and Laurent series, residues and, time permitting, their applications.

MATH 4400: Directed Study

1-3 Credit Hours

Prerequisite: Approval of the instructor, major area committee, and department chair.

Special advanced topics external to regular course offerings.

MATH 4490: Special Topics in Mathematics

1-6 Credit Hours

Prerequisite: Approval of the instructor and department chair.

This course is comprised of special selected topics of interest to faculty and students.