

Mathematics

Coordinator: Michael Bowling, Ph.D.

The mathematics curriculum serves the College by offering courses which help meet general education requirements, or are required/recommended by major programs; and by offering a minor in mathematics. The mathematics minor may be included as part of the liberal studies major.

Requirements for a Minor in Mathematics

(15 semester hours)

MAT211: Calculus I (3 hrs.)

MAT212: Calculus II (3 hrs.)

MAT213: Calculus III (3 hrs.)

Plus 6 hours of additional MAT courses numbered 300 or above.

Mathematics Courses

MAT 105: Mathematics for Elementary Teachers I

(3 hrs.)

(Prerequisite: one year of high school algebra)

Course designed to provide prospective elementary teachers with an understanding of the foundations of elementary mathematics. Topics include whole numbers and place value, fractions and integers.

MAT 106: Mathematics for Elementary Teachers II

(3 hrs.)

(Prerequisite: MAT 105 or one year of high school algebra)

Course designed to provide prospective elementary teachers with an understanding of the foundations of elementary mathematics. Topics include geometry, measurement and elementary statistics.

MAT 111: College Algebra

(3 hrs.)

(Prerequisite: two years of high school algebra)

Study of functions, equations and graphs with emphasis on linear, quadratic and exponential functions.

MAT 207: Introduction to Statistics

(3 hrs.)

(Prerequisite: two years high school algebra)

Introductory course in statistical methods used in business, psychology, education and natural or social sciences. Topics include data organization, descriptive statistics, elementary probability, binomial and normal distributions, sampling distributions, statistical inference, chi-square, correlation and linear regression.

MAT 211, MAT 212, MAT 213: Calculus I, II, III

(3 hrs. each)

(Prerequisites: for MAT 211: three years of high school mathematics; for MAT 212: MAT 211; for MAT 213: MAT 212)
Study of the concepts and applications of derivatives and integrals, developed numerically, graphically and algebraically.

MAT 305: Multivariate Calculus

(3 hrs.)

(Prerequisite: MAT 213)

The calculus of functions of more than one variable, including vector geometry, partial differentiation, multiple integration and applications.

MAT 311: History of Mathematics

(3 hrs.)

(Prerequisites: a grade of "B" or better in MAT 111; or "C" or better in MAT 211; or three years high school mathematics with a "B" average, and junior standing or permission of instructor.)

An introduction to the growth and development of mathematics through the centuries with emphases on the pre-18th century cultures involved, the contributions of women, and the evolution of problem-solving techniques. Writing Intensive.

MAT 326: Linear Algebra

(3 hrs.)

(Prerequisite: MAT 213)

A study of fundamental concepts and techniques of linear algebra, including vector spaces, matrices, and linear transformations.

MAT 338: Differential Equations

(3 hrs.)

(Prerequisite: MAT 213)

Mathematical modeling applications with differential equations. Topics include first-order equations, second-order linear equations and systems of equations.

MAT 380: Topics in Mathematics

(1-3 hrs.)

(Prerequisite: dependent on topic)

Taught to meet special interests of faculty and students. Offered at irregular intervals.

MAT 410: Abstract Algebra

(3 hrs.)

(Prerequisite: MAT 213 or permission of program)

An introduction to the fundamental concepts of modern abstract algebra, including groups, rings and fields.