

305. Statistical Methods (3) S or As Needed

Prerequisite: MAT 208.

Parametric and non-parametric statistical methods with an emphasis on applications. Topics include correlation and regression, analysis of variance, Chi-square distribution, contingency tables, and applications to the social sciences, life sciences, and business.

310. History of Mathematics (3) As Needed

Prerequisite: MAT 212.

A survey of the major developments in the history of mathematics with special emphasis to the areas usually discussed in high school and undergraduate mathematics courses: geometry, algebra, trigonometry, and calculus.

314. Differential Equations (3) S or As Needed

Prerequisite: MAT 213.

Topics include linear first-order differential equations and applications, higher-order differential equations, and applications.

315. Linear Algebra (3) S or As Needed

Prerequisite: MAT 212.

Topics include systems of linear equations, matrices, determinants, linear transformations, diagonalization of matrices, and major applications to business and the sciences.

320. Introduction to Complex Variables (3) As Needed

Prerequisite: MAT 213.

Algebraic properties of the complex number system, complex transformations, analytic functions, complex integration, residues, and series representations of functions.

360. Numerical Analysis (3) As Needed

Prerequisite: CSC 115 or 255, MAT 207 and 213.

Numerical computations, roots of equations, simultaneous nonlinear and linear simultaneous equations, numerical integration and differentiation, and power series calculations.

400. SOA Exam P Preparation (1) As Needed

Prerequisite: MAT 213 and 305.

Application of calculus and statistics to risk management problems relevant to the Society of Actuaries first exam. Sitting for the SOA Exam P is required for successful completion of the course. Pass/Fail.

401. Actuarial Mathematics I (3) As Needed

Prerequisite: MAT 400

Measures of interest, annuities-certain, amortization schedules, sinking funds and bonds. Introduction to life tables, life annuities and life insurance.

402. Actuarial Mathematics II (3) As Needed

Prerequisite: 401.

Actuarial models, including survival models, stochastic processes, and loss models. Applications to insurance and annuity contracts.

405. Mathematical Statistics (3) As Needed

Prerequisites: MAT 305 and 212.

A calculus-based introduction to the theory of probability and statistics. Topics include conditional probability and independence, random variables, mathematical expectations, discrete and continuous distributions, central limit theorem, and sampling theory.

411. Introduction to Analysis (3) F—Odd Years or

independent development

360. 4T26(MathAbs.)Tj Algebrad F—Odd YEvenears or Prerequisite

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