

MATHEMATICS (MATH)

MATH 500 INDEPENDENT STUDY OR RESEARCH1-3 Credits

Study or research in an area of special interest. The number of credit hours is determined by the topic and the amount of work required. Permission of instructor, department chair and academic dean required.
Add Consent: Instructor Consent

MATH 526 OPERATIONS RESEARCH3 Credits

Game theory, linear programming, simplex method, duality, transportation and assignment problems, introduction to dynamic programming, and queuing theory. Applications of business and industrial perspectives.
Prerequisites: MATH 138 or MATH 151 and MATH 232 or MATH 331
Dual-listed: MATH 426

MATH 527 NUMBER THEORY3 Credits

Introduction to the Ring of integers, Euclidean Rings, Chinese Remainder Theorem, divisibility, primes, primitive roots, indices, congruencies, Diophantine equations, quadratic reciprocity, number-theoretic functions, and cryptography, with an emphasis on applications.
Prerequisites: MATH 237 or permission of the instructor
Dual-listed: MATH 427

MATH 530 TOPICS IN MATHEMATICS1-3 Credits

Topics to meet the needs of students who have completed the regular course of study.
Add Consent: Instructor Consent
Notes: Can be repeated with different emphasis for a maximum of six (6) credit hours.

MATH 533 STATISTICAL METHODS AND DATA ANALYSIS3 Credits

Statistical research methods and modeling of statistical problems. Chi-square tests, analysis of variance, one-way and multi-factorial designs, multiple regression and correlation. Nonparametric methods. Use of calculators and personal computer software.
Prerequisites: MATH 232 or MATH 331
Dual-listed: MATH 433

MATH 534 INTRODUCTORY ANALYSIS3 Credits

Structure and topology of the real number line. Completeness, compactness, connectedness. Rigorous treatment of limits, sequences, series, convergence, functions and continuity, derivatives, and selected topics on measure and integration theory.
Prerequisites: MATH 237
Dual-listed: MATH 434

MATH 535 SAMPLING TECHNIQUES3 Credits

Statistical survey methods, sampling techniques, point and interval estimation of population parameters, population size determination, and communication of sample survey results. Applications from business, the natural sciences, and the social sciences.
Prerequisites: MATH 232 or MATH 331
Dual-listed: MATH 435

MATH 537 MODERN ALGEBRA3 Credits

Axiomatic approach to rings, integral domains, polynomials, fields, ideals and factor rings, selected topics in abstract algebra, and an introduction to vector spaces and algebraic coding theory.
Prerequisites: MATH 429
Dual-listed: MATH 437

MATH 538 NUMERICAL ANALYSIS3 Credits

Numerical modeling of phenomena using interpolation and approximation, systems of linear equations, integration, and numerical solutions of differential equations.
Prerequisites: MATH 252 and MATH 330
Dual-listed: MATH 438

MATH 539 THEORY OF STATISTICS3 Credits

Joint distribution concepts, conditional expectations, method of distribution functions, transformation, method of moment-generating functions, order statistics, sampling distributions, central limit theorem, continuous and discrete random variables.
Prerequisites: MATH 151 and MATH 232 or MATH 331
Dual-listed: MATH 439

MATH 540 MATHEMATICS EDUCATION STANDARDS3 Credits

An integrated content/pedagogy course on mathematics teaching, assessment, and curriculum standards, based on major content areas of the K-12 curriculum.
Dual-listed: MATH 440
Requirements: Fifty percent of endorsement completed.

MATH 541 COMBINATORICS3 Credits

Basic Counting Rules, Graph Theory, Generating Functions, Recurrence Relations, Inclusion and Exclusion with prime numbers, Polya's Theory of Counting, the Pigeonhole Principle and Latin Squares
Prerequisites: MATH 151 or MATH 138
Dual-listed: MATH 441

MATH 600 INDEPENDENT STUDY OR RESEARCH1-3 Credits

Study or research in an area of special interest. The number of credit hours is determined by the topic and the amount of work required.
Add Consent: Instructor Consent
Requirements: Permission of instructor and academic dean required.

MATH 630 MATHEMATICS TOPICS FOR TEACHERS1-3 Credits

Mathematics topics of interest to classroom teachers at all grade levels. Credit variable with topic.
Notes: Can be repeated with different emphasis for a maximum of six (6) credit hours.

MATH 631 MATHEMATICS FOR MANAGEMENT3 Credits

Quantitative methods for managerial, educational administration and public policy applications. Topics from discrete math, data analysis and operations research areas.

MATH 634 MATHEMATICS CURRICULUM3 Credits

Mathematics curriculum in elementary and secondary schools, with emphasis on current trends and issues in mathematics education.
Add Consent: Instructor Consent

MATH 655 SCHOLARLY PROJECT3 Credits

For students selecting Plan II, as listed under Program Requirements. Scholarly project pertaining to a field of specialization. Designed in consultation with the student's graduate committee and includes an extensive paper summarizing the project.
Add Consent: Instructor Consent
Notes: Must complete three (3) credit hours.

MATH 660 THESIS RESEARCH1-6 Credits

For students selecting Plan I, as listed under Program Requirements. Original investigations in mathematics leading to the master's thesis.
Add Consent: Instructor Consent
Requirements: Must complete six (6) credit hours; prior to registration, the proposal must be approved by the student's committee and Dean of Graduate Studies.