

# MATHEMATICS (MATH)

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## **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 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  
**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  
**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 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 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.