

## Math Catalog Descriptions Mott Community College

TITLE: Mathematics 021     Basic Mathematics (5)-5

**CATALOG DESCRIPTION:**

Counting, elementary theory of numbers, fundamental operations of both positive and negative numbers, fractions, decimals, percentages, measurement, metric system, and equations. Designed to meet the basic needs of students who need the basic concepts of mathematics.

TITLE: Mathematics 105     Applications-Based Mathematics (3)-4

**CATALOG DESCRIPTION:**

Course includes topics related to a mathematical foundation for college students. Topics of study to include simplifying arithmetic, exponential, and algebraic expressions, solving linear equations, representing data using mathematical models, graphs and tables, and solving application problems.

TITLE: Mathematics 110     Beginning Algebra (4)-4

**CATALOG DESCRIPTION:**

This course is intended for students who did not take one year of high school algebra or who need a review in beginning algebra. Topics covered include real numbers; solving linear equations and inequalities; ratio, proportion and percent; problem solving; polynomials; factoring; algebraic fractions; graphing linear equations; and square roots and radicals.

TITLE: Mathematics 120     Intermediate Algebra (4)-4

**CATALOG DESCRIPTION:**

This course is intended for the student who has had one year of high school algebra or Beginning Algebra (MATH-110). The topics covered in this course are linear, rational and quadratic functions; systems of equations; inequalities; polynomials; exponents, roots and radicals; logarithms.

TITLE: Mathematics 125     Introduction to Graphing Calculator (1)-1

**CATALOG DESCRIPTION:**

This course introduces students to the use of a graphing calculator in preparation for other math classes.

TITLE: Mathematics 130     College Algebra (4)-4

**CATALOG DESCRIPTION:**

This course is intended for the student who has completed Intermediate Algebra (MATH-120) or equivalent. The topics covered in this course are sets and real numbers; exponents and radicals; quadratics; the binomial theorem; progressions; inequalities; complex numbers; theory of equations; matrices; determinants; series and sequences.

TITLE: Mathematics 140 Trigonometry (3)-3

CATALOG DESCRIPTION:

This course is designed for the student who has completed MATH-120 (Intermediate Algebra) or one and one-half years of high school algebra and plane geometry. Topics studied include trigonometric functions, their graphs and identities; right and oblique triangle trigonometry; radians; trigonometric equations; linear and angular velocity.

TITLE: Mathematics 145 Pre-Calculus (5)-5

CATALOG DESCRIPTION:

This course will incorporate all of the objectives in MATH-130 and MATH-140 into one course. Students will study the algebraic techniques necessary to solve problems of polynomial, rational, radical, exponential, logarithmic and trigonometric functions. Students will also study sequences and series, and solving systems of equations. Other relations will be studied through parametric equations, polar equations, and conic sections. This course will be an effective preparation for calculus, science courses, and other advanced mathematics courses.

TITLE: Mathematics 150 Probability and Statistics (4)-4

CATALOG DESCRIPTION:

This course covers an introduction to elementary probability and statistics. It addresses these concepts as applied to the sciences, business and social science fields. Topics covered will include descriptive statistical ones such as graphs and numerical measures and inferential statistical ones on various aspects of Estimation and Hypothesis testing.

TITLE: Mathematics 165 Applied Calculus (4)-4

CATALOG DESCRIPTION:

This course is designed primarily for students in the fields of biology, medicine, ecology, business economics, and the social sciences. Many applications of calculus to these fields are included. Differential and integration are approached in an intuitive and applied manner.

TITLE: Mathematics 170 Analytic Geometry and Calculus I (5)-5

CATALOG DESCRIPTION:

First course in a calculus sequence. Topics covered to include: review of algebra and trigonometry, functions; analytic geometry; limits, derivatives and anti-derivatives of algebraic and transcendental functions. Applications involving derivatives and integrals.

TITLE: Mathematics 180 Analytic Geometry and Calculus II (5)-5

CATALOG DESCRIPTION:

Second course of the Calculus sequence. Topics covered include: analytic geometry, integration techniques, applications of integration, sequences and series, Taylor series, power series, parametric equations and polar coordinates.

TITLE: Mathematics 210     Math for Elementary Teachers I (4)-5

CATALOG DESCRIPTION:

A study of number systems, geometry, and variables and functions. Emphasis throughout on problem-solving and writing. Learning will occur via discovery-based activities done in a group work setting and skill for elementary classroom will be emphasized.

TITLE: Mathematics 220     Math for Elementary Teachers II (4)-5

CATALOG DESCRIPTION:

This course is a continuation of MATH-210. Topics include probability, statistics, and number theory. Emphasis throughout on problem-solving. Learning will occur via discovery-based activities done in a group work setting. Skills for the elementary classroom will be emphasized.

TITLE: Mathematics 250     Multivariable Calculus (5)-5

CATALOG DESCRIPTION:

This course is the third course in the Calculus sequence. Topics covered include: Vectors and the Geometry of Space, Vector-Valued Functions, Multivariable Functions, Directional Derivatives, Extrema of Multivariable functions, Multiple Integration and Vector Analysis.

TITLE: Mathematics 270     Linear Algebra (3)-3

CATALOG DESCRIPTION:

This is an introductory course in linear algebra. The course includes a study of systems of linear equations, matrix algebra, vector spaces and subspaces, linear transformations, eigenvalues and eigenvectors with applications.

TITLE: Mathematics 280     Differential Equations (4)-4

CATALOG DESCRIPTION:

An introduction to methods for solving first order differential equations with applications, higher order differential equations with applications, Laplace transforms, systems of linear differential equations, and numerical methods.