MATHEMATICS (MTH)

MTH 102 Essentials of Algebra (4 Credits)
Topics include operations of real numbers, ratios, proportions, percents, order of operations, linear and quadratic equations, inequalities, graphing, operation of polynomials, roots, radicals, and system of equations. A lab component is used to reinforce

MTH 103 Mathematics in General Education (3 Credits)
Emphasis on global, unifying ideas in mathematics and the connections between contemporary mathematics and modern society. Topics are selected from elementary mathematics, logic, probability and statistics, discrete systems, geometry, measurement, and co

MTH 103H Honors Mathematics in General Education (3 Credits)
Contact the department for specific course information

MTH 105 Intermediate Algebra (3 Credits)
Preparation for the pre-calculus including linear and quadratic equations, graphing, polynomials, roots, radicals, and systems of equations. (Satisfies the minimum general education mathematics requirement.)

MTH 131 Pre-Calculus for Business Majors (3 Credits)
Transition from elementary mathematics to calculus including a review of exponents, factoring, linear and quadratic equations, inequalities, functions, graphs, system of equations, exponential and logarithmic functions.

MTH 132 Calculus for Business Majors (3 Credits)
Introduction to elementary calculus including limits, continuity, differentiation, integration, and applications in business.

MTH 141 Elements of Mathematics for Teachers I (3 Credits)
Thorough treatment of the modern mathematics curricula for prospective school teachers. Emphasis on sets and logic, number systems, number theory, algebra, geometry and measurement. Computer-based laboratory component with manipulatives included.

MTH 142 Elements of Mathematics for Teachers II (3 Credits)
Continued treatment of the modern mathematics curricula for prospective school teachers. Emphasis on geometry and measurement.

MTH 151 College Algebra (3 Credits)
Study of basic algebra stressing fundamental concepts and reasoning used in mathematics and the sciences. Emphasis on skills necessary for the calculus sequences. Topics include algebraic operations, equations and inequalities, graphs and functions, polyn

MTH 151B College Algebra for Biology Majors (3 Credits)
This course emphasizes the study of basic algebra and stresses fundamental concepts and reasoning used in mathematics, biology and chemistry. Students are expected to bring to the course knowledge of the essentials of elementary and intermediate algebra.

MTH 151H Honors College Algebra (3 Credits)
Contact the department for specific course information

MTH 153 College Algebra & Trigonometry (3 Credits)
Extension of algebra topics and a treatment of trigonometry necessary for the study of advanced subjects in mathematics and the sciences. Preparation for the calculus sequence. Topics include exponential and logarithmic functions, trigonometric functions,

MTH 153H Honors College Algebra & Trigonometry (3 Credits)
Extension of algebra topics and a treatment of trigonometry necessary for the study of advanced subjects in mathematics and the sciences. Preparation for the calculus sequence. Topics include exponential and logarithmic functions, trigonometric functions,

MTH 184 Calculus I (4 Credits)
Treatment of the essentials of calculus necessary for the study of more advanced subjects in the natural sciences and mathematics including limits, continuity, derivatives and applications, antiderivatives and the Fundamental Theorem of Calculus. Integrat

MTH 184H Honors Calclulus I (4 Credits)
Treatment of the essentials of calculus necessary for the study of more advanced subjects in the natural sciences and mathematics including limits, continuity, derivatives and applications, antiderivatives and the Fundamental Theorem of Calculus. Integrat

MTH 242 History of Mathematics (3 Credits)
Contact the department for specific course information

MTH 250 Elementary Statistics Concepts (3 Credits)
Introduction to statistics including graphical data representation, basic probability concepts, sampling and expectation, confidence interval and hypothesis testing for sample mean and proportion.

MTH 250H Honors Elementary Statistics Concepts (3 Credits)
Introduction to statistics including graphical data representation, basic probability concepts, sampling and expectation, confidence interval and hypothesis testing for sample mean and proportion.

MTH 251 Calculus II (4 Credits)
Applications of definite integrals, the calculus of transcendental functions, infinite series, and integration techniques. Some topics are integrated with computer activities.

MTH 251H Honors Calculus II (4 Credits)
Applications of definite integrals, the calculus of transcendental functions, infinite series, and integration techniques. Some topics are integrated with computer activities.

MTH 252 Calculus III (4 Credits)
Investigation of calculus concepts at the intermediate level including polar coordinates, vectors, and the calculus of several variables.

MTH 252H Honors Calculus III (4 Credits)
This course is a continuation of Calculus II, MTH, 251. The course investigates calculus concepts at, the intermediate level designed for mathematics, and science majors. Topics include polar, coordinates, vector analysis, and the calculus of, several variables on an honors level.

MTH 273 Mathematical Foundations (3 Credits)
This course looks at fundamental topics to further study in mathematics. These include: basic concepts of set theory; basic concepts of logic; basic concepts of algebra; methods of mathematical proof; relations and functions; the concept of limit and con

MTH 300 Linear Algebra (3 Credits)
Introduction to the basic concepts, techniques, and elementary applications of linear algebra including matrices, linear systems, gaussian elimination, vector spaces, linear independence, linear transformations, eigenvalues and eigenvectors.

MTH 300H Honors Linear Algebra (3 Credits)
This course is an introduction to basic concepts,, techniques, and elementary applications of linear, algebra. Topics to be covered are matrices, linear, systems, Gaussian elimination, vector and vector, spaces, linear independence, linear, transformations, eigenvalues and eigenvectors,, finite-dimensional spectrum theory on an honors, level.

MTH 310 Discrete Mathematics (3 Credits)
Introduction to discrete math including topics in graph theory, management science, the mathematics of social change, and statistics. Use of manipulatives and other learning tools included.

MTH 311 Modern Geometry I (3 Credits)
Re-examination of Euclidean plane geometry as a postulational system. Emphasis on formulating definitions and constructing valid proofs including mathematical reasoning, postulational method, finite geometries, congruence, similarity, parallelism, and con

MTH 331 Algebraic Structures (3 Credits)
An introduction to modern algebra, which deals with selected algebraic structures (groups, rings, fields, etc.). The course stresses the axiomatic approach and the logic and method of proof.

MTH 351 Probability & Statistics I (3 Credits)
First of a two-semester sequence of probability and mathematical statistics, primarily for majors. Introduction to probability, univariate and multivariate probability distributions and their properties, distributions of functions of random variables, ran

MTH 351H Honors Probability & Statistics I (3 Credits)
First of a two-semester sequence of probability and mathematical statistics, primarily for majors. Introduction to probability, univariate and multivariate probability distributions and their properties, distributions of functions of random variables, ran

MTH 352 Probability & Statistics II (3 Credits)
Second of a two-semester sequence of probability and mathematical statistics, primarily for majors. Topics include applications of probability, descriptive statistics, random samples, point estimators and their properties, tests of hypotheses, confidence

MTH 355 Introduction to Regression Analysis (3 Credits)
This course uses regression analysis as a flexible, statistical, problem-solving methodology. Topics include matrix review; variable selection; prediction; multicolinearity; model diagnostics; dummy variables; logistic and non- linear regression. Emphasizes use of computer.

MTH 371 Discrete Mathematical Structures (4 Credits)
An introduction to the area of discrete mathematics that is important to computer science. Topics include logic, sets, functions and relations, algorithms, counting principles, and graph theory.

MTH 372 Differential Equations (3 Credits)
A first course in ordinary differential equations. Topics include first-order equations, higher order linear differential equations, and the Laplace transform. Applications include growth/decay models, electric circuits, and the vibrational models.

MTH 373 Advanced Vector Calculus (3 Credits)
A one-semester course in the calculus of functions of several variables and vector analysis. Topics include derivatives and integrals of functions of several variables, vector fields, divergence, curl, Green's Theorem, and Lagrange Multipliers. Course inc

MTH 382 Introduction to Applied Mathematics (3 Credits)
A junior-level introduction to applications of mathematics designed for mathematics, computer science, and engineering majors. Topics include Fourier Series, Laplace transforms, Sturm-Liouville problems, and Bessel functions.

MTH 384 Mathematical Modeling in the Sciences (3 Credits)
A one-semester interdisciplinary course integrating mathematics and science investigations in a mathematical model setting. Students, working in cooperative groups, investigate real-world science problems, formulate model solutions to the problems, and th

MTH 401 Numeric Analysis I (3 Credits)
Introduction to numerical techniques for problem solving involving the use of the computer. Topics include error analysis, solutions of one variable equations, solutions of linear and nonlinear systems of equations, iterative techniques in matrix algebra,

MTH 402 Numeric Analysis II (3 Credits)
Continuation of MTH 401. Topics include polynomial interpolation and approximation, numerical differentiation and integration, approximation theory, and numerical approaches to ordinary and partial differential equations.

MTH 431 Abstract Algebra (3 Credits)
Continuation of MTH 331. Topics include a more advanced discussion of groups, rings, fields, homomorphism, isomorphism, and automorphism.

MTH 451 Statistical Theory I (3 Credits)
Senior level course in applied statistics, designed especially for majors seeking an emphasis in statistics. Probability tools for statistics include description of discrete and absolutely continuous distributions, expected values, moments, moment generating functions, transformations of random variables, marginal and conditional distributions, independence, order statistics, multivariate distributions, concepts of random sample, derivation of many sampling distributions.

MTH 454 Experimental Designs (3 Credits)
Topics to be covered include single factor experiments, residuals, randomized block designs, general factorials, blocking, regression models, unbalanced data, confounding blocks, and Taguchi experiments.

MTH 472 Advanced Calculus II (3 Credits)
Contact the department for specific course information

MTH 473 Real Analysis (3 Credits)
A rigorous introduction to the analysis of real-valued functions of a real variable. Topics include types of proofs, real numbers, theory of sequences and limits of functions, continuity, differentiability, sequences and series of functions, uniform conve

MTH 474 Complex Variables (3 Credits)
Treats the fundamentals of analytic function theory. Topics include algebra and geometry of the complex numbers, limits, derivatives, Cauchy-Riemann equations, Cauchy's Theorem, Taylor and Laurent series, and contour integration

MTH 484 Topics in Applied Mathematics (3 Credits)
A senior level course containing advanced topics in mathematical and scientific applications. Topics vary, but may include partial differential equations, Fourier analysis and boundary value problems, with selected applications in mathematical physics and

MTH 484H Honors Topics in Applied Mathematics (3 Credits)
A senior level course containing advanced topics in mathematical and scientific applications. Topics vary, but may include partial differential equations, Fourier analysis and boundary value problems, with selected applications in mathematical physics and

MTH 492 Independent Study (3 Credits)
Contact the department for specific course information.

MTH 496 Mathematics Seminar I (2 Credits)
Culminating sequence designed to review and fortify knowledge of essential mathematics concepts and to synthes mathematical knowledge and experience through the completion of an approved research project. Reesults of the research ar presented to peers and

MTH 497 Mathematics Seminar II (2 Credits)
Culminating sequence designed to review and fortify knowledge of essential mathematics concepts and to synthesize mathematical knowledge and experience through the completion of an approved research project. Results of the research are presented to peers