MATHEMATICS (MATH)

MATH 0996 Support for Elementary Stats 2 Credits
This course is a supplement to STAT 1401 and designated as a support to students taking Elementary Statistics concurrently. Topics covered will be prerequisites to STAT 1401 taken on an as needed basis and embedded into Elementary Statistics material. This is a non-calculus based introduction to statistics. Course content includes descriptive statistics, probability theory, confidence intervals, hypothesis testing, and other selected statistical topics.
Co-requisite(s): STAT 1401

MATH 0997 Support Quantitative Reasoning 2 Credits
This Learning Support course provides corequisite support in mathematics for students enrolled in MATH 1001– Quantitative Reasoning. Topics will parallel topics being studied in MATH 1001and the course will provide support for the essential quantitative skills needed to be successful in MATH 1001. Taken with MATH 1001, topics to be covered will include logic, basic probability, data analysis and modeling from data.
Co-requisite(s): MATH 1001

MATH 0999 Support for College Algebra 2 Credits
This Learning Support course provides corequisite support in mathematics for students enrolled in MATH 1111– College Algebra. Topics will parallel topics being studied in MATH 1111and the course will provide support for the essential quantitative skills needed to be successful in MATH 1111. Taken with MATH 1111, this course provides an in-depth study of the properties of algebraic, exponential and logarithmic functions as needed for calculus. Emphasis is on using algebraic and graphical techniques for solving problems involving linear, quadratic, piece-wise, defined, rational, polynomial, exponential and logarithmic functions.
Co-requisite(s): MATH 1111

MATH 1001 Quantitative Reasoning 3 Credits
This course emphasizes quantitative reasoning skills needed for informed citizens to understand the world around them. Topics include logic, basic probability, data analysis, and modeling from data. Registration for MATH 0997 is required each semester unless waived by satisfactory placement scores or successful completion of learning support mathematics requirements.
Notes: Students receive credit toward graduation for only one of the following courses: MATH 1001, MATH 1111, or MATH 1101.

MATH 1101 Mathematical Modeling 3 Credits
This course emphasizes quantitative reasoning skills needed for informed citizens to understand the world around them. Topics include logic, basic probability, data analysis, and modeling from data. Students receive credit toward graduation for only one of the following courses: MATH 1001, MATH 1101, MATH 1111.
Prerequisite(s): Satisfactory placement scores and two years of high school algebra/MATH 0099.
Co-requisite(s): MATH 0997

MATH 1111 College Algebra 3 Credits
This course provides an in-depth study of the properties of algebraic, exponential, and logarithmic functions as needed for calculus. Emphasis is on using algebraic and graphical techniques for solving problems involving linear, quadratic, piece-wise defined, rational, polynomial, exponential, and logarithmic functions. Students receive credit toward graduation for only one of the following courses: MATH 1001, MATH 1101, MATH 1111.
Co-requisite(s): MATH 0999

MATH 1113 Precalculus 3 Credits
This course is an intensive study of the basic functions needed for the study of calculus. Topics include algebraic, functional, and graphical techniques for solving problems with algebraic, exponential, logarithmic, and trigonometric functions and their inverses.
Prerequisite(s): MATH 1111 with a C or better or satisfactory placement scores.

MATH 1401 Elementary Statistics -eCore 3 Credits
Course content includes descriptive statistics, probability theory, confidence intervals, hypothesis testing, and other selected statistical topics.
Prerequisite(s): Satisfactory placement scores equivalent to MATH 1001 This is a non-calculus based introduction to statistics.

MATH 1501 Calculus 1 - eCore 4 Credits
Topics to include functions, limits, continuity, the derivative, antidifferentiation, the definite integral, and applications.
Prerequisite(s): MATH 1113 with a grade of C or better.

MATH 2008 Foundation of Numbers 3 Credits
This course is an Area F introductory mathematics course for students in the early childhood education pathway. This course will emphasize the understanding and use of the major concepts of numbers and operations. As a general theme, strategies of problem solving will be used and discussed in the context of various topics.
Prerequisite(s): MATH 1001, MATH 1111, or MATH 1113.

MATH 2040 Applied Calculus 3 Credits
Differential and integral calculus of algebraic, logarithmic, and exponential functions; applications to social sciences, business and economics, such as maximum-minimum problems, marginal analysis, and exponential growth models. This course is designed for those students for whom the standard Calculus sequence is not required.
Prerequisite(s): MATH 1111 with a grade of C or better.

MATH 2261 Calculus I 4 Credits
This course includes a study of functions, limits, derivatives, continuity, the chain rule, implicit differentiation, related rates, differentials, local extrema, graphing techniques, monotonicity, concavity, max-min applications, infinite limits, the mean value theorem, antiderivatives, differential equations, sigma notation, the definite integral and areas in the plane. Students receive credit toward graduation for only one of the following courses: MATH 2261, MATH 1501.
Prerequisite(s): MATH 1113 with a grade of C or better.

MATH 2262 Calculus II 4 Credits
In this course volumes of solid s, arc lengths, surface area, work, fluid force, moments, exponential functions, logarithmic functions, inverse trigonometric functions, hyperbolic functions and their inverses, techniques for integration, indeterminate forms, L'Hopital's rule, improper integrals, Taylor's approximations, error estimates, numerical integration, fixed-point methods, infinite series and power series are studied.
Prerequisite(s): MATH 2261 with a grade of C or better.

MATH 2263 Calculus III 4 Credits
Conic sections, translation and rotation of axes, polar coordinates, parametric equations, vectors in the plane and in three-space, the cross product, cylindrical and spherical coordinates, surfaces in three-space, vector fields, line and surface integrals, Stoke's theorem, Green's theorem and differential equations are studied in this course.
Prerequisite(s): MATH 2262 with a grade of C or better.

MATH 2280 Discrete Mathematics 4 Credits
Includes mathematical elements of computer science such as propositional logic, predicate logic, sets, functions and relations, algorithms, combinatorics, probability, mathematical induction, recursion, elementary graph theory, trees, and Boolean logic.
Prerequisite(s): MATH 1113 with a grade of C or better or permission of the instructor.

MATH 2285 Linear Algebra 3 Credits
An introduction to linear algebra and its applications. Includes linear systems, matrices, determinants, vector spaces and their subspaces, linear independence, linear transformations, inner products, eigenvalues and eigenvectors. Intended primarily for students pursuing degrees in mathematics, computer science, physics or engineering.
Prerequisite(s): MATH 2262 with grade of C or better or permission of instructor.

MATH 2310 Differential Equations 4 Credits
An introduction to numeric and analytic solutions of ordinary differential equations and mathematical modeling. Topics include first order differential equations, second order equations, higher order linear equations, systems of first order equations, simple non-linear equations and applications.
Prerequisite(s): MATH 2262 with a grade of C or better.