

Math (MATH)

MATH& 107 Math in Society **5 credits | NSCI**

Quarter(s): S, F, W, Sp

Functions as a terminal course in mathematics for students whose major does not require further mathematics. The core topics of this course are logic, probability and statistics. Additional topics will be selected by the instructor. These topics could include geometry, number systems, linear programming, set theory, number theory, functions, graph theory, topology, etc.
Prerequisites: C or better in MATH 97 or MATH 98 or B or better in CCP 97 or CCP 98

MATH& 131 Math for Elementary Educators 1

5 credits | ELEC, NSCI

Quarter(s): F, W

Strengthens students' understanding of problem solving, operations on whole numbers, decimals and fractions, and number theory. First of a two-part series.
Prerequisites: C or better in MATH 97 or MATH 98 OR B or better in CCP 97 or CCP 98

MATH& 132 Math for Elementary Educators 2

5 credits | NSCI

Quarter(s): W, Sp

Strengthens students' understanding of the real number system, probability and statistics, geometry, measurement, functions and graphs. Second of two-part series.
Prerequisites: MATH& 131 (was MATH 121) with a grade of C or better.

MATH& 141 Precalculus I

6 credits | NSCI

Quarter(s): S, F, W, Sp

Reviews basic algebraic operations, equations, inequalities, and operations on functions. Provides the algebraic tools needed to analyze and graph polynomial, rational, exponential, and logarithmic functions. This is the first course in a two course sequence designed to prepare students for Calculus and future STEM coursework.

Prerequisites: C or better in MATH 098, B or better in CCP 098, or placement

MATH& 142 Precalculus II

5 credits | NSCI

Quarter(s): S, F, W, Sp

Covers concepts, properties, and algebra of trigonometric functions, including their graphs, inverses, law of sines and cosines, identities, and equations. Introduces polar coordinates, vector operations, and the concept of a limit. This is the second course in a two course sequence designed to prepare students for Calculus and future STEM coursework.

Prerequisites: C or better in MATH 141 or placement Co-requisite: None

MATH& 146 Introduction to Statistics

5 credits | ELEC, NSCI

Quarter(s): S, F, W, Sp

Introduces descriptive statistics, probability, and inferential statistical methods. Topics include probability distributions, sampling techniques, measures of central tendency and dispersion, correlation, regression, and statistical inference.

Prerequisites: C or better in MATH 97 or MATH 98 OR B or better in CCP 97 or CCP 98

MATH& 148 Business Calculus**5 credits | NSCI****Quarter(s): W, Sp**

Introduces calculus concepts needed by students of management, social science or biology, or can serve as a survey course for liberal arts majors. Course covers sets, systems of numbers, relations and functions, limits, differentiation and integration, including the definite integral, exponential and logarithmic functions and applications from various fields.

Prerequisite: MATH 125 OR MATH& 141 with a grade of C or better.

MATH& 151 Calculus I**5 credits | ELEC, NSCI****Quarter(s): F, W**

Investigates the ideas of continuity and limit, introduces the derivative as a limit, practices techniques for computing derivatives of functions, discusses the mean value theorem and its significance, utilizes these concepts to solve problems involving related rates and extreme values.

Prerequisites: MATH& 142 with a grade of C or better.

MATH& 152 Calculus II**5 credits | NSCI****Quarter(s): W, Sp**

Introduces techniques of antidifferentiation of functions including trigonometric, logarithmic, exponential, and hyperbolic functions. Applies the concept of the definite integral to solve problems involving force, work, volume, surface area, business and economics.

Prerequisite: MATH& 151 with a grade of C or better.

MATH& 153 Calculus III**5 credits | NSCI****Quarter(s): S, Sp**

Focuses on infinite series, vector calculus and their applications. Incorporates the use of polar, cylindrical and spherical coordinate systems in applications of the calculus.

Prerequisite: MATH& 152 with a grade of C or better.

MATH& 254 Calculus IV**5 credits | NSCI****Quarter(s): F**

Continuation of Calculus III. Topics include partial derivatives, multiple integrals, and vector calculus.

Prerequisites: MATH& 153 with a grade of C or better.

MATH 105 Math for Health Sciences**5 credits | REEL****Quarter(s): W, Sp**

Reviews basic arithmetic skills, including whole numbers and decimal numbers; fractions and percentages. Introduces basic algebraic concepts, including fractional equations and formulas. Covers metric and household systems of measurement and conversion between the systems and calculations needed to determine dosages. Introduces multiple approaches to solving applied math problems. Discusses various charts, graphs, and tables and their uses.

Prerequisites: MATH 79 with a C or better or CCP 79 with a grade of B or better

MATH 106 Industrial Mathematics**5 credits | REEL****Quarter(s): S, F, W, Sp**

Emphasizes basic skills in applied mathematics designed to support students entering the vocational/technical work force of tomorrow. The focus is real world problem solving that students carry to their specific careers. Although the use of math in the workplace is primary, emphasis is given to the critical and creative thinking process as students look to strengthen their use of arithmetic concepts, measurements, practical geometry, basic algebra and right angle trigonometry.

Prerequisite: MATH 79 with a grade of C or better or CCP 79 with a grade of B or better or instructor permission

MATH 125 Applied College Algebra**6 credits | NSCI****Quarter(s): F, W**

Covers equations and inequalities; systems of equations and inequalities; graphing linear, quadratic, polynomial, rational, exponential, and logarithmic functions; matrix operations; linear programming and simplex method; and mathematics of finance.

Prerequisites: C or better in MATH 98 OR B or better in CCP 98 OR appropriate placement test score.

MATH 215 Discrete Mathematics**5 credits | ELEC, NSCI****Quarter(s): W**

Acquaints students with mathematical concepts used in computer science. Topics may include logic, induction, combinatorics, recursion, analysis of algorithms and graph theory.

Prerequisite: MATH& 142 with a grade of C or better.

MATH 220 Linear Algebra**5 credits | NSCI****Quarter(s): Sp**

Presents the theory and properties of matrices, determinants and linear transformations. Introduces vector space and the Gram-Schmidt orthonormalization process. Deals with the calculation and application of eigenvalues and eigenvectors.

Prerequisite: MATH& 152 with a grade of C or better

MATH 240 Differential Equations**5 credits | NSCI****Quarter(s): W**

Introduces techniques of solving ordinary differential equations including the elementary methods used for first order differential equations, method of undetermined coefficients and variation of parameters for higher order equations. Includes techniques of solving systems of differential equations, the method of La Place transforms and series solutions to differential equations. This may be offered as a Capstone course.

Prerequisite: MATH& 254, "C" or better.

MATH 246 Probability and Statistics**5 credits | ELEC, NSCI****Quarter(s): F, Sp**

Covers collecting and summarizing data, probability distributions, confidence intervals, testing hypotheses for one and two samples, chi-square tests, ANOVA, and regression. Emphasis will be placed on data analysis through spreadsheet applications.

Prerequisites: MATH 125 or MATH& 141 with a grade of C or better or placement.

MATH 288 Cooperative Work Experience**1-15 credits****Quarter(s): F, W, Sp**

Provides work-based learning experience in a specific program of study. Individualized student outcomes are developed, focusing on behaviors that contribute to workplace success. Prerequisites: Instructor or Cooperative Education Coordinator permission
 Concurrent requirements: COLL 289 or BUS 294 must be taken prior to or concurrent with this course.

MATH 299 Independent Study**1-10 credits**

Offers individualized learning opportunities for knowledge or skill development. Content and expectations are established between the student and instructor, and documented in an Independent Study contract. Prerequisites: By instructor permission only.

MATH 78 Pre-College Math I**3 credits****Quarter(s): S, F, W, Sp**

Covers operations on the real numbers (fractions, decimals, integers, etc.) and introduces the concepts of ratios, proportions, and percents with an emphasis on contextual learning. This is the first 3 credits of a 6 credit course designed to prepare students for either a non-STEM pathway or an algebra intensive pathway.

Prerequisites: B or higher in CCP 32 Math Level B or placement test

MATH 79 Pre-College Math I**3 credits****Quarter(s): S, F, W, Sp**

Covers operations on and applications of ratios, proportions, and percents. Also includes topics in geometry and measurement with an introduction to algebraic expressions. Emphasis is placed on contextual learning. This is the second 3 credits of a 6 credit course designed to prepare students for either a non-STEM pathway or an algebra intensive pathway.

Prerequisites: C or better in MATH 078 or placement test

MATH 87 Essentials of Pre-College Math II**3 credits****Quarter(s): F, W, Sp**

Provides an introduction to algebraic concepts such as algebraic expressions, linear equations, and linear functions with an emphasis on contextual learning. This is the first 3 credits of a 6 credit course designed for students who are not planning on taking a course in calculus.

Prerequisites: C or better in MATH 79 or B or better in CCP 79, Placement Exam, or Instructor Permission

MATH 88 Pre-College Math II**3 credits****Quarter(s): S, F, W, Sp**

Covers solving linear equations and inequalities, an introduction to graphing, and solving systems of linear equations. Techniques and strategies for problem solving are emphasized. This is the first 3 credits of a 6 credit course designed to prepare students for algebra intensive college-level math pathways.

Prerequisite: C or better in MATH 79, B or better in CCP 79, or placement Co-requisite: None

MATH 97 Essentials of Pre-College**Math III****3 credits****Quarter(s): F, W, Sp**

Provides further exploration of algebraic concepts such as linear equations, exponential functions, and an introduction to statistical concepts with an emphasis on contextual learning. This is the last 3 credits of a 6 credit course designed for students who are not planning on taking a course in calculus. Prerequisites: C or better in MATH 087 or MATH 089

MATH 98 Pre-College Math III**3 credits****Quarter(s): S, F, W, Sp**

Covers factoring, operations on polynomials and radicals, and an introduction to exponential, logarithmic, and quadratic functions. Techniques and strategies for problem solving are emphasized. This is the second 3 credits of a 6 credit course designed to prepare students for algebra intensive college-level math pathways.

Prerequisites: C or better in MATH 88, C or better in MATH 87, B or better in CCP 88, or placement Co-requisite: None