

Math (MATH)

MATH& 107 Math in Society

5 credits , ELEC , 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: Placement OR MATH 106 minimum grade "C" OR CCP 97 minimum grade "B" OR MATH 7 minimum grade "C" OR concurrent enrollment in MATH 7. Co-requisites: None

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, integers, and fractions, and ratios, proportions, and percentages. First of a two-part series. Lab hours are required for this course.

Prerequisites: Placement OR CCP 97 minimum grade "B" OR MATH 31 minimum grade "C" OR concurrent enrollment in MATH 31. Co-requisites: None

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. Lab hours are required for this course.

Prerequisites: MATH& 131 (was MATH 121) with a grade of C or better.

MATH& 141 Precalculus I

5 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. Lab hours are required for this course.

Prerequisites: Placement OR MATH 088 minimum grade "C" OR CCP 098 minimum grade "B" OR MATH 41 minimum grade "C" OR concurrent enrollment in MATH 41. Co-requisites: None.

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: Placement OR MATH 105 minimum grade "C" OR CCP 97 minimum grade "B" OR MATH 46 minimum grade "C" OR concurrent enrollment in MATH 46. Co-requisite: None.

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, decimal numbers, fractions and percentages. Covers problem solving in the context of health sciences, which involves using formulas, solving and graphing linear equations, conversion between the metric and household systems of measurement as well as calculations needed to determine dosages. Discusses various tools and measurements used in statistics, including charts, graphs, tables, and correlation.

Prerequisites: MATH 79, 'C' or better.

MATH 106 Industrial Mathematics

5 credits , REEL

Quarter(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 and numerical literacy 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: C or better in MATH 079, B or better in CCP 79, or placement

MATH 125 Applied College Algebra
5 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: Placement OR CCP 98 minimum grade "B" OR MATH 41 minimum grade "C" OR concurrent enrollment in MATH 41. Co-requisites: None.

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 31 Support Course for Math for Elementary Educators 1
3 credits
Quarter(s): F, W

Develops vocabulary and numeracy skills to support student success in MATH& 131. Topics include problem solving, communication, algorithmic calculations with different number sets, conversions

between numerical representations, ratios, proportions, percentages, and student success skills. Students taking this course must also be enrolled in MATH& 131 concurrently.

Prerequisites: Appropriate placement test score OR MATH 79, minimum grade 'C' OR CCP 79, minimum grade 'B' Co-requisites: MATH& 131

MATH 41 Support Course for Precalculus I and Applied College Algebra

3 credits

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

Taken concurrently with MATH& 141 or MATH 125. Content includes holistic work with linear and quadratic functions, and as well as exponential, logarithmic, radical, and rational equations and their applications in business and STEM contexts. Additional attention to metacognition and student success skills.

Prerequisites: Appropriate placement test score OR MATH 88 with minimum grade 'C' OR CCP 088 with minimum grade 'B'. Co-requisites: MATH 125 or MATH& 141

MATH 46 Support Course for Introduction to Statistics

3 credits

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

Develops vocabulary and numeracy skills to support student success in MATH& 146. Topics include order of operations, formulas, applications, and number sense. College success strategies are also integrated throughout the course. Students must be enrolled in a section of Introduction to Statistics (MATH& 146) during the same quarter in order to enroll for this course.

Prerequisites: C or better in MATH 79, B or better in CCP 79, or placement Co-requisites: MATH& 146

MATH 7 Support Course for Math in Society

3 credits

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

Develops vocabulary and numeracy skills to support student success in MATH& 107. Topics include mathematical communication and critical reading of quantitative information, problem solving, linear equations, and student success skills.

Prerequisite: Appropriate placement test score OR MATH 079 minimum grade 'C' OR CCP 079 with minimum grade of 'B'. Co-requisites: MATH& 107

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. Lab hours are required for this course.

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

MATH 79 Pre-College Math

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. Lab hours are required for this course.

Prerequisites: Appropriate placement

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. Lab hours are required for this course.

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

MATH 88 Introduction to Algebra for STEM & Business

3 credits

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

Covers foundational math concepts necessary to be successful in precalculus. Includes proportional reasoning, linear functions, and their use in business and STEM applications. Additional attention to metacognition, problem solving, and student success skills. Lab hours are required.

Prerequisite: Placement OR MATH 79 minimum grade "C" OR CCP 79 minimum grade "B"

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. Lab hours are required for this course.

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. Lab hours are required for this course.

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