Mathematics

Mathematics Classes

MATH& 107: Math In Society

A survey in mathematical topics focusing on topics such as growth, finance and statistics that are essential knowledge for an educated citizen. Students will build confidence in mathematical reasoning relevant to a wide range of liberal arts and humanities applications.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Natural Science, Quantitative Skills
Prerequisites
MATH 99 with a grade of "C" (2.0) or better, or a grade of 3 or higher on the Smarter Balanced exam, "C" (2.0) or better in high school Algebra, Precalculus or Calculus within past three years or appropriate placement score.

MATH& 141: Precalculus I

Functions and their graphs (including elementary, exponential and logarithmic functions, and the conic sections) and their inverses in the context in which they are used in calculus. Work with graphing calculators will be integrated into the course.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Natural Science, Quantitative Skills
Prerequisites
MATH 99 with a "B" (3.0) or better, MATH 140, or appropriate placement score

MATH& 142: Precalculus II

Introduction to trigonometric functions as they relate to the unit circle and right triangle. Graphs of the functions, applications, problem solving, identities, inverse functions, complex numbers, vectors and analytic geometry including polar coordinates and parametric equations. The basic concepts of sequences and series will be covered.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Natural Science, Quantitative Skills
Prerequisites
MATH 140 or MATH& 141 with a grade of "C" (2.0) or better or appropriate placement score

MATH& 146: Introduction to Statistics

Fundamental concepts and applications of descriptive and inferential statistics. Includes measures of central tendency and variability, statistical graphs, probability, the normal distribution, hypothesis testing, confidence intervals, ANOVA testing and regression analysis. Graphing calculator or statistical software techniques are used throughout the course.

Credits 5
Weekly Contact Hours 5

Meets Degree Requirements For
Natural Science, Quantitative Skills
Prerequisites
MATH 99 with a "C" (2.0) or better, or a grade of 3 or higher on the Smarter Balanced exam, "C" (2.0) or better in high school Algebra, Precalculus or Calculus within past three years or appropriate placement score.

MATH& 148: Business Calculus

Differential and integral calculus designed for students majoring in business administration, social sciences and other programs requiring a short course in calculus. Work with graphing calculators will be integrated into the course.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Natural Science, Quantitative Skills
Prerequisites
MATH 140 or MATH&141 with "C" (2.0) or better, "B" or higher in a high school precalculus or calculus class within the past 3 years, a grade of 4 on the Smarter Balanced exam, or appropriate placement score

MATH& 151: Calculus I

Introduction to limits, derivatives, higher-order derivatives and implicit differentiation. Applications involving maximums and minimums, and related-rates. Analysis of graphs of functions.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Natural Science, Quantitative Skills
Prerequisites
MATH& 142 with a "C" (2.0) or better or appropriate placement score

MATH& 152: Calculus II

Focuses on definite, indefinite, and improper integrals, techniques of integration and using integration to solve area, volume, work and other application problems.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Natural Science, Quantitative Skills
Prerequisites
MATH& 151 with a grade of "C" (2.0) or better or appropriate placement score

MATH& 153: Calculus III

Calculus of parametric and polar functions. Vector operations, calculus of vector-valued functions, analysis of motion in three dimensions. Sequences, series, Taylor polynomials, and Power Series.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Natural Science, Quantitative Skills
Prerequisites

MATH& 152 with a grade of "C" (2.0) or better or appropriate placement score

MATH& 171: Math for Elementary Educators I

First of three elementary education math courses. Includes rigorous examination of topics including number theory, operations and algorithms of real numbers, place value, proportions/percents, and functions. Emphasizes mathematically precise language, mathematical fluency, problem solving, modeling, communication of mathematical ideas, analysis of difficulties in teaching/learning, and other math/educational topics for Pre-K-8.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
General Elective
Prerequisites
Appropriate assessment score, or a grade of “C” (2.0) or higher in MATH 99 or a college-level math class, or a grade of “3” of higher on the Smarter Balanced exam. Evidence of competency in MATH 99 is required for this course to transfer. Recommended prerequisite: grade of “C” (2.0) or higher for ENGL 97 or equivalent. MATH& 171, MATH& 172, MATH& 173 can be taken out of order with instructor permission.

MATH& 172: Math for Elementary Educators II

Second of three elementary education math courses. Topics include properties of two/three dimensional figures, measurement, angles, area, perimeter, volume, surface area, constructions, similarity/congruence, Pythagorean Theorem, trigonometry, and transformations. Emphasizes mathematically precise language, problem solving, communication of mathematical ideas, analysis of difficulties in teaching/learning, and other math/educational topics for Pre-K-8.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
General Elective
Prerequisites
MATH& 171 with a grade of “C” (2.0) or better. Recommended: grade of “C” (2.0) or higher for ENGL 97 or equivalent. MATH& 171, MATH& 172, MATH& 173 can be taken out of order with instructor permission.

MATH& 173: Math for Elementary Educators III

Third of three elementary education math courses. Reviews operations on real numbers and algebraic modeling. Topics include applications of proportions/percents, probability, counting, and descriptive statistics. Emphasizes mathematically precise language, mathematical fluency, problem solving, communication of mathematical ideas, analysis of difficulties in tteaching/learning, and other math/educational topics for Pre-K-8.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Quantitative Skills
Prerequisites
MATH& 171 with a grade of “C” (2.0) or better. Recommended: grade of “C” (2.0) or higher for ENGL 97 or equivalent. MATH& 171, MATH& 172, MATH& 173 can be taken out of order with instructor permission.

MATH& 254: Calculus IV

Focuses on multivariable and vector calculus, including: vector fields, gradients, curl, divergence, optimization, double and triple integrals in rectangular, polar, cylindrical, and spherical coordinate systems, line and surface integrals, Green's Theorem, Divergence Theorem, Stokes' Theorem.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Natural Science, Quantitative Skills
Prerequisites
MATH&153 with a grade of "C" (2.0) or better or appropriate assessment score

MATH 90: Basic Mathematics

Topics include: Adding, subtracting, multiplying and dividing real numbers including positive and negative integers, decimals, and fractions; applications involving geometry, ratios, proportions, percents and dimensional analysis; computation of powers; and introduction of roots. Calculators are not allowed.
Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Not Intended for Transfer, Typically Numbered Below 100.
Prerequisites
Appropriate ABE or placement score

MATH 92: Introduction to Applied Math

An introductory course intended to prepare students for MATH 93 or MATH 100. Emphasizes arithmetic operations with signed numbers, fractions and decimals, measuring methodology and unit conversion, basic algebra concepts up through solving linear equations, and applied mathematics as found in Industrial and Technical Programs.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Not Intended for Transfer, Typically Numbered Below 100.

MATH 93: Beginning Algebra

Students will work with polynomials, solve linear equations, graph linear equations in two dimensions, calculate slopes and intercepts for lines, solve systems of linear equations, and use unit analysis to solve applications. This course prepares students for MATH 99. Concurrent enrollment in SDS 103 is recommended.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Not Intended for Transfer, Typically Numbered Below 100.
Prerequisites
MATH 90 or MATH 92 or higher with a grade of "C" (2.0) or better or ABE 40 with a "B-" (2.7) or better, or appropriate placement score.

MATH 98: Elementary Algebra

Topics include solving linear, quadratic (by factoring) and rational equations; solving a linear system of equations; manipulating polynomials (adding, subtracting, multiplying and dividing); and using exponent properties to simplify expressions. Students will also graph linear equations in two variables, calculate slopes, and find linear functions.
Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Not Intended for Transfer, Typically Numbered Below 100.
Prerequisites
MATH 93 or higher with a grade of C (2.0) or better, ABE 41 with a B- (2.7) or better, or appropriate placement recommendation

MATH 99: Intermediate Algebra

Topics include: Solving quadratic, rational, radical, exponential and logarithmic equations including applications; Evaluating and graphing common functions with and without shifts and reflections; Determining vertex of quadratic functions; Manipulating expressions using exponent and logarithmic properties. Successful completion of this course will prepare a student for a non-STEM college-level math course. (Math&107, Math& 146, Math& 200, Math& 171).

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Not Intended for Transfer, Typically Numbered Below 100.
Prerequisites
MATH 93 or higher with a "C" (2.0) or better, ABE 42 with a "B-" (2.7) or better, or appropriate placement recommendation.

MATH 100: Tech Math for Industrial Field

This is an applied course in mathematics for industrial fields. Topics include fundamentals of algebra, geometry and basic trigonometry and their applications to industry. Not intended for students planning to transfer to a four-year college.
Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Restricted Elective
Prerequisites
MATH 92 or higher with a grade of C (2.0) or better or a MATH 98 placement score.

MATH 102: Foundations for Precalculus

This course is a prerequisite or corequisite for Pre-Calculus I, Math& 141. It is designed to strengthen the mathematical foundation necessary for success in STEM math, specifically Pre-Calculus I, Pre-Calculus II, and Calculus. Emphasis on science related application problems and mathematical modeling throughout the course. Successful completion of this course will prepare students for success in college-level STEM math courses, Math& 141 and beyond.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Restricted Elective
Prerequisites
MATH 99 or higher with a C (2.0) or better, or concurrent enrollment in Math& 141, Math& 142, or Math& 151, or appropriate placement recommendation

MATH 140: Precalculus for Business and Social Sciences

Functions in context of business, social science and economics. Applications are emphasized including marginal analysis of cost, profit, revenue; break-even; supply and demand; present and future values of annuities; quantities that grow or decay exponentially; and data analysis to determine and use appropriate linear, polynomial, exponential and quadratic mathematical models.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Natural Science, Quantitative Skills
Prerequisites
MATH 99 with a grade of "C" or better, or a grade of 3 or higher on the Smarter Balanced exam, or appropriate placement score/criteria.

MATH 195: Mathematical Computing

Students will learn and use mathematical technology to investigate and solve in-depth and real-world problems. The technology and topics will be appropriate for the concurrent math course. Technologies will include Maple, R, Octave, Matlab, Excel, Fathom, and Desmos.

Credits 1
Weekly Contact Hours 1
Meets Degree Requirements For
General Elective
Prerequisites
Concurrent Enrollment in one of the following: MATH& 141, MATH& 142, MATH& 146, MATH& 151, MATH& 152, MATH& 153, MATH 211, MATH 238, or MATH& 254

MATH 200: Finite Mathematics

Survey of the essential quantitative ideas and mathematical techniques used in decision making in a diversity of disciplines. Includes systems of equations and matrices, linear programming, finance, probability and its uses. Additional topics may be included. Graphing calculators will be integrated into the course.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Natural Science, Quantitative Skills
Prerequisites
MATH 140 or MATH&141 with "C" or better, "B" or higher in a high school precalculus or calculus class within the past 3 years, a grade of 4 on the Smarter Balanced exam, appropriate placement score, or instructor approval.

MATH 211: Linear Algebra

Focuses on matrices, determinants, systems of equations, vector spaces including the four fundamental subspaces, orthogonality, inner product spaces, least square solutions, eigenvalues/eigenvectors, transformation matrices, dynamical systems and diagonalization. Geometrical understanding will be emphasized. Applications in business, computer science and engineering. Introduction to mathematical proofs.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Natural Science, Quantitative Skills

Prerequisites
MATH& 152 or Instructor Permission

MATH 238: Differential Equations

Modeling with and solving of first- and higher-order ordinary differential equations, systems of linear equations, Laplace Transforms and series solutions of linear differential equations. Methods include numerical, qualitative and analytic approaches. The course will include modeling applications in engineering, chemistry and population studies.

Credits 5
Weekly Contact Hours 5
Meets Degree Requirements For
Natural Science, Quantitative Skills
Prerequisites
MATH& 152 or Instructor Permission