

MATHEMATICS (MATH)

MATH 100-CN Quantitative Reasoning (1 Unit)

NPEP course.

MATH 100-DL Quantitative Reasoning (1 Unit)

Analysis of real-life problems from a quantitative perspective. Students develop skills in estimation, financial literacy, probability, and statistics. Focus on the organization of complex ideas into simple, quantifiable parts.

MATH 101-CN Algebra (1 Unit)

Overview of core mathematical concepts that permeate business, science and everyday life. Primary focus is on mathematical tools needed in a variety of degree programs. Topics include: functions and graphs, linear, polynomial and rational equations, inequalities and their applications, modeling, variation, and systems of equations. This course does not count for credit if taken after any higher mathematics course. May not be audited.

MATH 101-DL Algebra (1 Unit)

Overview of core mathematical concepts that permeate business, science and everyday life. Primary focus is on mathematical tools needed in a variety of degree programs. Topics include: functions and graphs, linear, polynomial and rational equations, inequalities and their applications, modeling, variation, and systems of equations. This course does not count for credit if taken after any higher mathematics course. May not be audited.

MATH 110-CN Introduction to Mathematics (1 Unit)

NPEP course.

MATH 113-CN Precalculus Mathematics (1 Unit)

Properties and graphs of the basic functions: polynomial, rational, exponential, logarithmic, and trigonometric. Complex numbers, theory of equations, and selected topics are also included. May not be audited.

MATH 202-CN Finite Mathematics (1 Unit)

Foundation of mathematical knowledge targeting data analysis. Topics chosen from set theory, combinatorics (the art of counting), finite probability, elementary linear algebra and its applications to linear optimization problems.

MATH 202-PP Finite Mathematics (1 Unit)

NPEP course.

MATH 211-CN Short Course in Calculus (1 Unit)

Elements of differential and integral calculus.

MATH 220-A Single-Variable Differential Calculus (1 Unit)

Limits. Differentiation. Linear approximation and related rates. Extreme value theorem, mean value theorem, and curve-sketching. Optimization.

MATH 220-A-DL Single-Variable Differential Calculus (1 Unit)

Limits, Differentiation. Linear approximation and related rates. Extreme value theorem, mean value theorem, and curve-sketching. Optimization.

MATH 220-B Single-Variable Integral Calculus (1 Unit)

Definite integrals, antiderivatives, and the fundamental theorem of calculus. Transcendental and inverse functions. Areas and volumes. Techniques of integration, numerical integration, and improper integrals. First-order linear and separable ordinary differential equations.

Prerequisite: MATH 220-A.

MATH 220-B-DL Single-Variable Integral Calculus (1 Unit)

Definite integrals, antiderivatives, and the fundamental theorem of calculus. Transcendental and inverse functions. Areas and volumes.

Techniques of integration, numerical integration, and improper integrals.

First-order linear and separable ordinary differential equations.

Prerequisite: MATH 220-A, MATH 220-A-DL.

MATH 226-CN Sequences and Series (1 Unit)

Sequences, series, and convergence tests. Power series, Taylor polynomials and error. Complex numbers. Second-order linear ordinary differential equations and power series solutions.

Prerequisite: MATH 220-B.

MATH 230-A Multivariable Differential Calculus (1 Unit)

Vectors, vector functions, partial derivatives, and optimization.

Prerequisite: MATH 220-B.

MATH 230-B Multivariable Integral Calculus (1 Unit)

Multiple integration: double integrals, triple integrals, and the change of variables theorem. Vector calculus: vector fields, line integrals, surface integrals, curl and divergence, Green's theorem, Stokes' theorem, and the divergence theorem.

Prerequisite: MATH 230-A.

MATH 240-CN Linear Algebra (1 Unit)

Elementary linear algebra: systems of linear equations, matrix algebra, subspaces, determinants, eigenvalues, eigenvectors, and orthogonality.

Prerequisite: MATH 230-A or equivalent.

MATH 250-CN Elementary Differential Equations (1 Unit)

Elementary ordinary differential equations: first-order equations, second-order linear equations, series solutions, and systems of first-order linear equations.

Prerequisite: MATH 230-A, MATH 240-CN, or equivalents.

MATH 300-CN Foundations of Higher Mathematics (1 Unit)

Introduction to fundamental mathematical structures, including sets, functions, equivalence relations, and cardinal numbers. Elementary logic and proof techniques.

Prerequisite: MATH 240-CN.

MATH 399-CN Independent Study (1 Unit)