Mathematics (MATH) Courses

**MATH0010 Basic Mathematics**
Students are assigned to this course based on placement tests given prior to taking MATH1020 or MATH1002. The course is designed to teach students the basic mathematical concepts and methods that will prepare them for studying college-level mathematics. Topics include a review of basic arithmetic, an introduction to algebra, and problem-solving techniques. (OL)
Offered at Charlotte, Denver, Denver CE, North Miami, Online, Providence, Providence CE
4.25 Quarter Credit Hours

**MATH1002 A Survey of College Mathematics**
This course is designed to teach students the basic mathematical concepts and methods that will assist them in using mathematics in both their personal and professional lives. Topics include problem solving, sets, probability, statistics, consumer mathematics, and the rudiments of college algebra.
Prerequisite(s): MATH0010 or math placement. (HY) (OL)
Offered at Charlotte, Denver, Denver CE, North Miami, Online, Providence, Providence CE
4.5 Quarter Credit Hours

**MATH1020 Fundamentals of Algebra**
This course provides students with a working knowledge of the basic elements of algebra. Topics covered include graphing, inequalities, exponents and roots, logarithms, and factoring, and the solution of linear, quadratic, logarithmic, rational and radical equations, as well as systems of linear equations.
Prerequisite(s): MATH0010 or math placement. (OL)
Offered at Charlotte, Denver, North Miami, Online, Providence, Providence CE
4.5 Quarter Credit Hours

**MATH1030 Precalculus**
This course features the concepts and techniques essential for the study of calculus. Topics include functional notation; algebraic, trigonometric, exponential and logarithmic functions; analytic trigonometry; and matrix algebra.
Prerequisite(s): MATH1020 or math placement. (OL)
Offered at Charlotte, Denver, North Miami, Online, Providence, Providence CE
4.5 Quarter Credit Hours

**MATH1035 Quantitative Analysis I**
A continuation of Algebra, this course begins with the study of linear equations and their applications to business and economics. Matrices are covered in detail. Linear programming, quadratic models and a brief introduction to differential calculus are also presented.
Prerequisite(s): MATH1020 or math placement. (HY) (OL)
Offered at Charlotte, Denver, North Miami, Online, Providence, Providence CE
4.5 Quarter Credit Hours

**MATH1040 Calculus I**
This course provides students with an introduction to the basic elements of differential and integral calculus. Topics include functions and limits, continuity, differentiation and its applications, relative extrema, and an introduction to integration.
Prerequisite(s): MATH1030 or math placement.
Offered at Denver, North Miami, Providence, Providence CE
4.5 Quarter Credit Hours

**MATH2002 Statistics II**
This course is a continuation of Statistics I. It is designed to provide students with the statistical concepts and techniques of inferential statistics. Topics include hypothesis testing; testing the difference between two means, two proportions and two variances; correlation and regression; Chi-square tests; analysis of variance and sampling techniques.
Prerequisite(s): MATH1002 or MATH1020. (OL)
Offered at Charlotte, Denver, North Miami, Online, Providence, Providence CE
4.5 Quarter Credit Hours

**MATH2010 Introduction to Biostatistics**
This course is an introductory statistics course with a focus on applications to biomedical and related fields such as nutrition, pharmacology, ecology, genetics, health and physiology. Topics include descriptive statistics, correlation and regression, statistical studies, elementary probability theory, probability and sampling distributions, estimation theory, and hypothesis testing.
Prerequisite(s): MATH1002 or MATH1020 or math placement. (OL)
Offered at Charlotte, Denver, North Miami, Online, Providence, Providence CE
4.5 Quarter Credit Hours

**MATH2020 Discrete Mathematics**
This course is designed to give students the basic mathematical concepts and methods that are prevalent in information science. Topics include logic, sets, relations, functions, algorithms, recursion relations, elementary graph theory and trees.
Prerequisite(s): MATH1020 or math placement. (OL)
Offered at North Miami, Online, Providence, Providence CE
4.5 Quarter Credit Hours

**MATH2035 Quantitative Analysis II**
A continuation of MATH1035, this course further examines the applications of the derivative such as maxima and minima, and marginal analysis. Both indefinite and definite integration are discussed along with their application to business and economics. Partial differentiation and functions of several variables are also presented.
Prerequisite(s): MATH1035 or math placement.
Offered at Providence, Providence CE
4.5 Quarter Credit Hours

**MATH2040 Calculus II**
This course is a continuation of MATH1040. Topics include a detailed treatment of the calculus of transcendental functions, formal integration methods, improper integrals, infinite series, and further topics in analytic geometry.
Prerequisite(s): MATH1040.
Offered at Providence, Providence CE
4.5 Quarter Credit Hours

**MATH2043 Ordinary Differential Equations**
This course introduces the student to the field of ordinary differential equations. Topics include methods for solving linear differential equations and their applications, Laplace Transform Methods, and the solution of systems of linear differential equations along with their applications.
Prerequisite(s): MATH1020.
Offered at Providence, Providence CE
4.5 Quarter Credit Hours

**MATH3040 Calculus III**
This course introduces the student to calculus of functions of several variables and vectors. Topics include vector algebra, vector-valued functions, partial derivatives, vector differential calculus, and the integration of vector fields including the Divergence Theorem and Stokes' Theorem.
Prerequisite(s): MATH1020.
Offered at Providence, Providence CE
4.5 Quarter Credit Hours

**MATH3040 Calculus III**
This course is a continuation of MATH2040. It is designed to provide students with a detailed treatment of the calculus of functions of several variables and vectors. Topics include vector algebra, vector-valued functions, partial derivatives, vector differential calculus, and the integration of vector fields including the Divergence Theorem and Stokes' Theorem.
Prerequisite(s): MATH2040.
Offered at Providence, Providence CE
4.5 Quarter Credit Hours
MATH4800 Special Topics in Mathematics
This course presents a specialized area of mathematics in great detail. Each academic year, a specialized topic is chosen which is of interest to both students and faculty. Typical specialized topics which may be chosen include, but are not limited to, number theory, numerical analysis, matrix theory, mathematical logic, abstract algebra and geometry.
Prerequisite(s): MATH1002 or math placement. May vary depending on topic.
Offered at Charlotte, Denver, North Miami, Providence, Providence CE
4.5 Quarter Credit Hours

MATH5100 Statistical Methods
This course features the statistical content tested on the Chartered Financial Analyst (CFA) certification exam. Topics include descriptive statistics, probability and probability distributions, sampling and hypothesis testing.
HY (OL)
Offered at Online, Providence
3 Semester Credits