

MATHEMATICS (MATH/MATH&)

Course updates located on corrections page (<https://catalog.clark.edu/corrections/course-corrections/>). Updated 8/19/24.

Support for Finite Math
MATH 4 3 Credits/Units

3.0 hours of lecture

Designed to help successfully learn the course material in Finite Math with Support (MATH 104). Includes prerequisite topics, success skills, and course content support. Meets for three hours a week. Must be enrolled with the linked section of Finite Math with Support (MATH 104) to take this course.

Support for Introduction to Statistics
MATH 6 2 Credits/Units

2.0 hours of lecture

Prerequisite: MATH 92 or PTCS 110 (grade of "C" or higher) or placement into Math level 30

Develops vocabulary and numeration skills to support student success in MATH& 146. College success strategies are integrated throughout the course. Students must be enrolled with the linked section of Introduction to Statistics (MATH& 146) in order to take this course.

Support for Math in Society
MATH 7 2 Credits/Units

2.0 hours of lecture

Prerequisite: MATH 92 or PTCS 110 (grade of "C" or higher) or placement into Math level 30

Develops numeration and algebra skills to support student success in MATH& 107. College success strategies are integrated throughout the course. Students must be enrolled with the linked section of Math in Society (MATH& 107) in order to take this course.

Support for College Algebra
MATH 10 3 Credits/Units

3.0 hours of lecture

Prerequisite: MATH 96 (grade of "C" or higher), or placement into Math level 45.

Designed to help successfully learn the course material in College Algebra with Support (MATH 110). Includes prerequisite topics, success skills, and course content support. Meets for three hours a week. Must be enrolled with the linked section of College Algebra with Support (MATH 110) to take this course.

Elementary Algebra
MATH 90 5 Credits/Units

5.0 hours of lecture

Prerequisite: CAP 42 (grade of "C" or higher), or placement into Math level 20.

Primarily intended for STEM and Business programs requiring college-level coursework such as College Algebra, College Trigonometry, or Finite Mathematics. Also suitable as a program prerequisite. Provides a foundation in elementary algebra skills and preparation for Intermediate Algebra (MATH 95). Topics include: Numeric and algebraic expressions, linear equations and inequalities in one variable, the coordinate plane, lines, systems of linear equations in two variables, functions, integer exponents, polynomials.

Applied Elementary Algebra
MATH 92 5 Credits/Units

5.0 hours of lecture

Prerequisite: CAP 42 (grade of "C" or higher) or placement into Math level 10

Primarily intended for programs that require college-level coursework such as Math in Society, Statistics, or Mathematics for Elementary Teachers. Also suitable as a program prerequisite. Provides a foundation in elementary algebra skills & applications and preparation for Applied Intermediate Algebra (Math 096). Topics include: numeracy; mathematical thinking; proportional reasoning; algebraic expressions; linear equations and inequalities in one variable; the coordinate plane; linear equations in two variables and graphing; systems of linear equations; and dimensional analysis. College success strategies are integrated throughout the course. [CP]

Intermediate Algebra
MATH 95 5 Credits/Units

5.0 hours of lecture

Prerequisite: MATH 90 (grade of "C" or higher), or placement into Math level 40.

A continuation of Math 090. Primarily intended for STEM and Business programs that require college-level coursework such as College Algebra, College Trigonometry, or Finite Mathematics. Also suitable as a program prerequisite. Provides a foundation in intermediate algebra skills and preparation for college-level coursework. Topics include: Factoring, rational expressions, radical expressions, rational exponents, quadratic equations, exponential and logarithmic functions. [CP]

Applied Intermediate Algebra
MATH 96 5 Credits/Units

5.0 hours of lecture

Prerequisite: MATH 92 or PTCS 110 (grade of "C" or higher) or placement into Math level 30

A continuation of Math 092. Primarily intended for programs that require college-level coursework such as Math in Society, Statistics, or Mathematics for Elementary Teachers. Also suitable as a program prerequisite. Covers intermediate algebra skills & applications and prepares students for college-level mathematics. Topics include: functions; exponent rules; polynomial operations and basic factoring; defining and solving quadratic, rational and radical equations; and basic exponential and logarithmic equations and functions. Applications of these techniques to modeling and solving real-world problems are emphasized. College success strategies are integrated throughout the course. [CP]

College Trigonometry
MATH 103 5 Credits/Units

5.0 hours of lecture

Prerequisite: MATH 95 (grade of "C" or higher) or placement into Math level 60.

Trigonometric ratios, right angle trigonometry, law of sines, law of cosines, radian measure, trigonometric identities, inverse trigonometric functions, trigonometric equations, graphs of trigonometric functions, polar coordinates, and two-dimensional vectors. This is a challenging and technical course primarily intended for those majoring in Mathematics, Physical Science or Engineering. It is a preparatory class for the four-term Calculus series. The Mathematics Division highly recommends that students who need BOTH College Algebra (MATH 111 or MATH 110) AND College Trigonometry (MATH 103) complete College Algebra first. [CP, GE, Q, SE]

Finite Math with Support
MATH 104
5 Credits/Units
5.0 hours of lecture

Prerequisite: MATH 96 (grade of "C" or higher) or placement into Math level 50 and concurrent enrollment in MATH 4.

Covers the same topics as Finite Mathematics (MATH 105), paired with a linked support course (MATH 4). This course allows students who are placed near but not at college readiness to take Finite Math, and provides support for students who complete MATH 96 and choose to change majors. Topics include; lines; linear systems; matrices; linear programming using geometric and simplex methods; mathematics of finance; polynomial, rational, exponential and logarithmic functions and models. [CP, GE, Q, SE]

Finite Mathematics
MATH 105
5 Credits/Units
5.0 hours of lecture

Prerequisite: MATH 95 (grade of "C" or higher) or placement into Math level 60.

Lines; linear systems; matrices; linear programming using geometric and simplex methods; mathematics of finance; polynomial, rational, exponential and logarithmic functions and models. [CP, GE, Q, SE]

College Algebra With Support
MATH 110
5 Credits/Units
5.0 hours of lecture

Prerequisite: MATH 96 (grade of "C" or higher) or placement into Math level 50.

Covers the same topics as college algebra (MATH 111), paired with a linked course (MATH 10). This allows students who are placed near but not at college readiness to take College Algebra, and provides support for students who complete MATH 96 and choose to change majors. An introduction to functions from symbolic, numerical, and graphical points of view. Topics include linear, polynomial, rational, radical, logarithmic, and exponential functions, systems of equations, conic sections, and mathematical modeling. This is a challenging and technical course primarily intended for those majoring in Mathematics, Physical Science or Engineering. It is a preparatory class for the four-term Calculus series. [CP, GE, Q, SE]

College Algebra
MATH 111
5 Credits/Units
5.0 hours of lecture

Prerequisite: MATH 95 (grade of "C" or higher) or placement into Math level 60.

An introduction to functions from symbolic, numerical, and graphical points of view. Topics include polynomial; logarithmic, and exponential functions; inequalities, absolute value equations and inequalities, systems of equations, conic sections, and mathematical modeling. This is a challenging and technical course primarily intended for those majoring in Mathematics, Physical Science or Engineering. It is a preparatory class for the four-term Calculus series. The Mathematics Division highly recommends that students who need BOTH College Algebra (MATH 111 or MATH 110) AND College Trigonometry (MATH 103) complete College Algebra first. [CP, GE, Q, SE]

Math for Elementary Teachers
MATH 122
5 Credits/Units
5.0 hours of lecture

Prerequisite: MATH 96 (grade of "C" or higher) or placement into Math level 50.

The first of a three-term sequence of courses designed for prospective elementary school teachers. Focus on problem solving, set theory, numeration systems, whole number arithmetic, and fractions. [CP, GE, Q, SE]

Math for Elementary Teachers
MATH 123
5 Credits/Units
5.0 hours of lecture

Prerequisite: MATH 122 (grade of "C" or higher)

The second of a three-term sequence of courses designed for prospective elementary school teachers. Focus on geometric shapes, measurement, triangle congruence and similarity, coordinate geometry, transformations, trigonometry and geometric problem solving. May be taken concurrently with MATH 124, the third course in the sequence. [CP, GE, Q, SE]

Math for Elementary Teachers
MATH 124
5 Credits/Units
5.0 hours of lecture

Prerequisite: MATH 122 (grade of "C" or higher)

The third of a three-term sequence of courses designed for prospective elementary school teachers. Focus on integers, decimals, number theory; elementary statistics, combinatorics and probability; functions and their graphs. Study of data analysis and probability including problem solving techniques and concepts in algebra. May be taken concurrently with MATH 123, the second course in the sequence. [CP, GE, Q, SE]

Calculus for Life Sciences
MATH 140
6 Credits/Units
6.0 hours of lecture

Prerequisite: MATH 110 or MATH 111 and MATH 103 (grades of "C" or higher) or placement into Math level 80.

Survey of differentiation and integration with applications to problems in Biology and Environmental Science. [CP, GE, Q, SE]

Statistics II
MATH 147
3 Credits/Units
3.0 hours of lecture

Prerequisite: MATH& 146 (grade of "C" or higher)

Inference techniques involving two or more populations; regression inference, analysis of variance (ANOVA), and Chi-square tests are included among other statistical topics with applications to fields of nursing, science, engineering, and social science. [CP, GE, Q, SE]

Cooperative Work Experience
MATH 199
1-5 Credits/Units
15.0 hours of clinical

Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. [GE]

Linear Algebra
MATH 215
5 Credits/Units
5.0 hours of lecture

Prerequisite: MATH& 152 (grade of "C" or higher) or placement into Math Level 100

An introduction to Linear Algebra. This course is intended primarily for students of Mathematics, the Physical Sciences, or Engineering. Topics include systems of linear equations, matrices, linear transformations, vectors, vector spaces, eigenvalues, and orthogonality. Applications will also be explored. [CP, GE, Q, SE]

Differential Equations
 MATH 221 5 Credits/Units
 5.0 hours of lecture

Prerequisite: Concurrent enrollment in, or completion of MATH& 254 (grade of "C" or higher)
 Elementary theory and applications of ordinary differential equations. Linear equations, linear systems, Laplace transforms, boundary value problems, series and iterative methods. [CP, GE, Q, SE]

Selected Topics
 MATH 280 1-5 Credits/Units
 5.0 hours of lecture

Selected topics in mathematics. Topics vary and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit. Individual topics are listed in the term class schedules. [GE, SE]

Special Projects
 MATH 290 1-5 Credits/Units
 5.0 hours of lecture
 Opportunity to plan, organize and complete special projects approved by the department. [GE]

Math In Society
 MATH& 107 5 Credits/Units
 5.0 hours of lecture

Prerequisite: CAP 46 or MATH 96 (grade of "C" or higher), placement into Math level 45, or concurrent enrollment in MATH 7
 A study of a variety of mathematical topics including mathematical models, finance, statistics, and probability. Additional topics may include number theory, geometry, voting theory, networks, apportionment and other topics. For students who do not plan to take additional mathematics. [CP, GE, Q, SE]

Introduction to Stat
 MATH& 146 5 Credits/Units
 5.0 hours of lecture

Prerequisite: MATH 96 (grade of "C" or higher), placement into Math level 45, or concurrent enrollment in MATH 6.
 Descriptive statistical methods, probability, binomial and normal probability distributions, estimation of parameters, tests of hypotheses, and regression analysis are included among other statistical topics with applications to fields of nursing, science, engineering, and social science. [CP, GE, Q, SE]

Business Calculus
 MATH& 148 5 Credits/Units
 5.0 hours of lecture

Prerequisite: MATH 104, MATH 105, MATH 110, or MATH 111 (grade of "C" or higher) or placement into Math level 70.
 Introductory calculus with applications for business, life sciences, and social sciences. Differential, integral, and elementary multivariate calculus. [CP, GE, Q, SE]

Calculus I
 MATH& 151 5 Credits/Units
 5.0 hours of lecture

Prerequisite: MATH 110 or MATH 111 and MATH 103 (grades of "C" or higher) or placement into Math level 80.
 First course in the four term calculus sequence intended primarily for students of mathematics, the physical sciences, or engineering. Covers the foundations of calculus of a single variable. Topics include limits, differentiation, applications of differentiation to properties of functions and their graphs, solving real-world problems, and the basics of integration. [CP, GE, Q, SE]

Calculus II
 MATH& 152 5 Credits/Units
 5.0 hours of lecture

Prerequisite: MATH& 151 (grade of "C" or higher) or placement into Math Level 90
 Second course in the four term calculus sequence intended primarily for students of mathematics, the physical sciences, or engineering. Topics include techniques of integration, applications of integration, conics, parametric equations, polar coordinates, and polar equations. [CP, GE, Q, SE]

Calculus III
 MATH& 153 5 Credits/Units
 5.0 hours of lecture

Prerequisite: MATH& 152 (grade of "C" or higher) or placement into Math Level 100
 Third course in the four term calculus sequence intended for students of mathematics, the physical sciences, or engineering. Topics include sequences and series, three-dimensional vectors and lines, planes, cylindrical and spherical coordinates; and vector valued functions and their derivatives, integrals, and applications. [CP, GE, Q, SE]

Calculus IV
 MATH& 254 5 Credits/Units
 5.0 hours of lecture

Prerequisite: MATH& 153 (grade of "C" or higher) or placement into Math Level 110
 Fourth course in the four term calculus sequence intended primarily for students of mathematics, the physical sciences, or engineering. Covers the calculus of functions of several variables. Topics include limits; partial derivatives, iterated integrals, and their applications, vector fields; gradient; divergence and curl; line and surface integrals; and classic vector calculus theorems. [CP, GE, Q, SE]