MATHEMATICS (MATH)

MATH C030   **4 Units (72 lecture hours)**
Intermediate Algebra
Prerequisite(s): MATH C010 with a grade of C or better or by Multiple Measures Assessment.

Grading Mode: Standard Letter, Pass/No Pass
Review of elementary algebra, linear and quadratic equations, curve plotting, exponents, radicals, polynomials, systems of equations/inequalities, nonlinear equations, logarithmic and exponential functions, complex numbers, and applications. Graded or Pass/No Pass option.

MATH C044   **5 Units (90 lecture hours)**
Combined Basic Mathematics and Pre-Algebra
Grading Mode: Pass/No Pass
This course prepares students with the basic math principles and foundation for Elementary Algebra (MATH C010). The course content is equivalent to that covered separately in Basic Arithmetic (MATH C005) and Pre-Algebra (MATH C008). The course develops number and operation sense with regard to whole numbers, integers, rational numbers, mixed numbers, and decimals. Also included are grouping symbols, order of operations, estimation and approximation, scientific notation, ratios, percents, proportions, geometric figures, and units of measurement with conversions. An introduction to algebraic topics, including simple linear equations, algebraic expressions and formulas, and practical applications of the material are also covered. All topics will be covered without the use of a calculating device. Pass/No Pass. (NOT DEGREE APPLICABLE.)

MATH C045   **6 Units (108 lecture hours)**
Combined Elementary and Intermediate Algebra
Prerequisite(s): MATH C008 or C044 with a passing grade or by Multiple Measures Assessment.

Grading Mode: Standard Letter, Pass/No Pass
Numerical and algebraic operations, number systems, linear and quadratic equations/inequalities, exponents, polynomials, radicals, curve plotting, systems of equations/inequalities, nonlinear equations, logarithmic and exponential functions, complex numbers, and applications. Graded or Pass/No Pass option.

MATH C046   **5 Units (90 lecture hours)**
Statistics Pathway
Grading Mode: Standard Letter, Pass/No Pass
Statistics Pathway is recommended for majors that require no mathematics beyond college-level statistics, MATH C160. The course covers requisite topics from Algebra including linear equations and inequalities, linear regression analysis, exponential functions, exponential equations, descriptive statistics, probability, sampling distributions including the Normal distribution, and the use of graphing calculators and/or computer software. Please see a counselor for more information. Graded or Pass/No Pass option. (NOT DEGREE APPLICABLE.)

MATH C091   **2 Units (36 lecture hours)**
Support for College Algebra
Co-requisite(s): MATH C115.

Grading Mode: Pass/No Pass, Standard Letter
This course covers the underlying algebra skills and concepts, along with mathematical problem solving and study skills that promote or are needed for success in College Algebra. Concurrent enrollment in specified sections of MATH C115 is required. Pass/No Pass or Graded. (NOT DEGREE APPLICABLE.)

MATH C096   **2 Units (36 lecture hours)**
Support for Introduction to Statistics
Co-requisite(s): MATH C160.

Grading Mode: Pass/No Pass, Standard Letter
This course covers the underlying algebra skills and concepts, along with mathematical problem solving and study skills, that promote or are needed for success in Introduction to Statistics. Concurrent enrollment in specified sections of MATH C160 is required. Pass/No Pass or Graded. (NOT DEGREE APPLICABLE.)

MATH C100   **3 Units (54 lecture hours)**
Liberal Arts Mathematics
Prerequisite(s): MATH C030 or C045 with a grade of C or better or by Multiple Measures Assessment.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU; UC.

Examines the mathematics involved in personal finance, environmental issues, the social sciences, politics and voting, business and economics, graph theory, fractals, art, and music. The course will also include a writing and research component. Graded or Pass/No Pass option.

MATH C103   **3 Units (54 lecture hours)**
Statistics for Elementary Teachers
Prerequisite(s): MATH C030 or C045 with a grade of C or better or by Multiple Measures Assessment.

Grading Mode: Standard Letter
Transfer Credit: CSU.

This course is designed for prospective teachers. It is an activity-based exploration of statistics aligned with the California State Mathematics Standards for K-12. Topics include data representation and analysis, randomization, and sampling, measures of central tendency, and dispersion, hypothesizing, and statistical inference. Letter Grade only.

MATH C104   **3 Units (54 lecture hours)**
Mathematics for Elementary Teachers
Prerequisite(s): MATH C030 or C045 with a grade of C or better or by Multiple Measures Assessment.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

This course will develop and reinforce conceptual understanding of mathematical topics through the use of connections, modeling, and representation and national and state curriculum standards for elementary school math, including Common Core State Standards. Instructional delivery design techniques and technological applications will be explored. The course involves using technology, participating in group work and projects, and observing and/or teaching in local elementary schools. Topics covered include whole numbers, integers, rational numbers, real numbers, number theory, ratio, proportion, percent, set theory, and elementary logic. Letter Grade only. UC Credit Limitations: MATH C104 and MATH C105 combined: maximum credit, 1 course.

MATH C106   **3 Units (54 lecture hours)**
Geometry for Elementary Teachers
Prerequisite(s): MATH C030 or C045 with a grade of C or better or by Multiple Measures Assessment.

Grading Mode: Standard Letter
Transfer Credit: CSU; UC.

This course will build fluency and understanding of basic mathematical concepts and develop reasoning, problem solving, and communicating skills. The course involves using technology, participating in group work and projects, and observing and/or teaching in local elementary schools. Topics covered include data analysis, probability, geometry, measurement, algebra, and coordinate geometry. Letter Grade only. UC Credit Limitations: MATH C104 and MATH C106 combined: maximum credit, 1 course.

MATH C115   **4 Units (72 lecture hours)**
College Algebra
Prerequisite(s): MATH C030 or C045 with a grade of C or better or by Multiple Measures Assessment.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU; UC.

Basic concepts of algebra, equations, and inequalities along with functions and graphs, polynomial and rational functions, exponential and logarithmic functions, systems, matrices and determinants, linear programming, conic sections, sequences, series, and combinatorics. Graded or Pass/No Pass option. UC Credit Limitations: MATH C115 and MATH C170 combined: maximum credit, 5-semester units.

MATH C120   **3 Units (54 lecture hours)**
Trigonometry
Prerequisite(s): MATH C030 or C045 with a grade of C or better or by Multiple Measures Assessment.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU.

Circular functions, trigonometric identities and graphs, inverse functions, triangles, vectors, applications, and imaginary and complex numbers. Graded or Pass/No Pass option.

MATH C140   **4 Units (72 lecture hours)**
Business Calculus
Prerequisite(s): MATH C115 or C170 with a grade of C or better or by Multiple Measures Assessment.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU; UC.

For Business, Management, and Social Science majors. Functions, graphs, limits, continuity, derivatives, and integrals of exponential and logarithmic functions, the Chain Rule, multivariable functions, differential equations, and applications. Graded or Pass/No Pass option. UC Credit Limitations: MATH C140 and MATH C180 combined: maximum credit, 1 course. **C-ID:** MATH 140.

MATH C146   **5 Units (90 lecture hours)**
Statistics Pathway 2
Prerequisite(s): MATH C046 with a grade of C or better.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU: UC.

The Statway path is a two-semester sequence recommended for majors that require no mathematics beyond freshman-level statistics. MATH C146 is the second semester of the Statway sequence. MATH C146 includes topics from intermediate algebra (radical, exponential, and logarithmic algebraic phenomena) and inferential statistics. Graded or Pass/No Pass option. UC Credit Limitations: MATH C146 and MATH C160 combined: maximum credit, 1 course.

MATH C150   **4 Units (72 lecture hours)**
Finite Mathematics With Applications
Prerequisite(s): MATH C030 or C045 with a grade of C or better or by Multiple Measures Assessment.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU; UC.

Topics include linear functions, systems of linear equations and inequalities, matrices, linear programming, mathematics of finance, sets and Venn diagrams, combinatorial techniques, and an introduction to probability. Applications in business, economics, and social sciences. Graded or Pass/No Pass option.

MATH C160   **4 Units (72 lecture hours)**
Introduction to Statistics
Prerequisite(s): MATH C030, C045, or C046 with a grade of C or better or by Multiple Measures Assessment.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU; UC.

Statistical topics covered include collecting of data, sampling, probability, hypothesis testing, analyzing of variance, correlation and regression, nonparametric testing, and correlating for application in the natural sciences, social sciences, business, and management. Use of statistical technology will be introduced. Graded or Pass/No Pass option. **C-ID:** MATH 110.

MATH C170   **5 Units (90 lecture hours)**
Precalculus
Prerequisite(s): MATH C120 with a grade of C or better or by Multiple Measures Assessment.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU; UC.

Topics include algebra review, complex numbers, sequences and series, polynomial, rational, exponential, logarithmic, and trigonometric and inverse functions, vectors, analytic geometry, linear systems, matrices, elementary theory of equations, and polar coordinates. This course is designed for those students planning to study calculus. Graded or Pass/No Pass option. UC Credit Limitations: MATH C115 and MATH C170 combined: maximum credit, 5 semester units.

MATH C180   **5 Units (90 lecture hours)**
Calculus 1
Prerequisite(s): MATH C170 with a grade of C or better; or MATH C115 and C120 with a grade of C or better; or by Multiple Measures Assessment.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU; UC.

This is the first course in the calculus sequence. It satisfies the requirement for majors in mathematics, science, or engineering. Topics include limits, derivatives of algebraic and transcendental functions, applications of derivatives, indefinite integrals, definite integrals, the Fundamental Theorem of Calculus, and applications of integration. Graded or Pass/No Pass option. UC Credit Limitations: MATH C140 and MATH C180 combined: maximum credit, 1 course. **C-ID:** MATH 210.

MATH C185   **5 Units (90 lecture hours)**
Calculus 2
Prerequisite(s): MATH C180 with a grade of C or better.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU; UC.

Second course in the calculus sequence. It satisfies the requirement for majors in mathematics, science, or engineering. Topics include techniques and applications of integration, calculus applied to parametric curves and polar curves, analytic geometry, sequences, series, and an introduction to differential equations. Graded or Pass/No Pass option.

MATH C280   **5 Units (90 lecture hours)**
Calculus 3
Prerequisite(s): MATH C185 with a grade of C or better.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU; UC.

Multivariable calculus including vectors, vector-valued functions, functions of several variables, partial derivatives, multiple integrals, calculus of vector fields, Green's Theorem, Stokes' Theorem, and the Divergence Theorem. Graded or Pass/No Pass option. **C-ID:** MATH 230.

MATH C285   **5 Units (90 lecture hours)**
Introduction to Linear Algebra and Differential Equations
Prerequisite(s): MATH C185 with a grade of C or better.

Grading Mode: Standard Letter, Pass/No Pass
Transfer Credit: CSU; UC.

Introduction to linear algebra and differential equations, matrices, determinants, eigenvectors and eigenvalues, inverse and implicit function theorems, linear methods and numerical methods, Fourier series, and Laplace transforms. Graded or Pass/No Pass option. **C-ID:** MATH 910 S.