

MATHEMATICS (MATH)

MATH G010 4 Units (72 lecture hours; 18 lab hours)

Elementary Algebra

Grading Mode: Standard Letter
Not Transferable.

Properties of real numbers; simplifying polynomial, rational, and radical expressions; solving linear, quadratic, rational, and radical equations in one variable; the rectangular coordinate system; graphing linear equations in two variables; and solving systems of linear equations in two variables. Applications of mathematical concepts. Equivalent to a first-year high school algebra course. Taught in a combined large lecture and laboratory format. Software used requires access to a computer with Windows operating system. Graded. NOT DEGREE APPLICABLE.

MATH G030 4 Units (72 lecture hours; 18 lab hours)

Intermediate Algebra

Prerequisite(s): MATH G010 or achieve qualifying score on Math Placement.

Grading Mode: Standard Letter
Not Transferable.

This course is equivalent to the second year of high school algebra. It is taught using large group lectures in conjunction with computer assignments and laboratory work. Topics include absolute value, rational exponents, radicals, linear equations and inequalities, quadratic equations and inequalities, functional notation, linear and quadratic functions, conic sections, logarithms, exponential and logarithmic functions, linear systems in two and three variables, sequences, and series. A scientific calculator will be required. Software used requires access to a computer. Graded.

MATH G040 5 Units (90 lecture hours; 18 lab hours)

Accelerated Elementary and Intermediate Algebra

Grading Mode: Standard Letter
Not Transferable.

This course is equivalent to a first and second year high school algebra course accelerated into one semester. Taught in a combined large lecture and laboratory format. Software used requires access to a computer. It is taught using group lectures in conjunction with computer assignments and laboratory work. Topics include: properties of real numbers; simplifying polynomial, rational, and radical expressions; solving linear, quadratic, rational, and radical equations in one variable; graphing and solving systems of linear equations in two variables, absolute value, rational exponents, quadratic equations and inequalities, linear and quadratic functions, conic sections, exponential and logarithmic functions, sequences, and series. A scientific calculator will be required. Graded.

MATH G080 5 Units (90 lecture hours; 18 lab hours)

Pre-Statistics

Prerequisite(s): MATH G010.

Grading Mode: Standard Letter
Not Transferable.

This course is designed for students whose education plan calls for MATH G160: Introduction to Statistics. It may not be suitable for students on a STEM degree pathway. Please see a counselor for more information. The course covers requisite topics from Intermediate 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. Graded.

MATH G091 2 Units (36 lecture hours)

Support for College Algebra

Co-requisite(s): MATH G115.

Grading Mode: Pass/No Pass
Not Transferable.

This co-requisite course is intended for students that enroll into College Algebra, MATH G115. It provides supplemental instruction in basic algebra skills and concepts needed for success in College Algebra computations and applications. Success in this course will be based on attendance and satisfactory completion of in-class assignments. Requires concurrent enrollment in specified sections of College Algebra, MATH G115. Pass/No Pass. NOT DEGREE APPLICABLE.

MATH G092 2 Units (36 lecture hours)

Support for Trigonometry

Co-requisite(s): MATH G120.

Grading Mode: Pass/No Pass
Not Transferable.

This co-requisite course is intended for students that enroll into Trigonometry, MATH G120. It provides supplemental instruction in basic algebra skills and concepts needed for success in Trigonometry computations and applications. Success in this course will be based on attendance and satisfactory completion of in-class assignments. Requires concurrent enrollment in specified sections of Trigonometry, MATH G120. Pass/No Pass. NOT DEGREE APPLICABLE.

MATH G096 2 Units (36 lecture hours)

Support for Introduction to Statistics

Co-requisite(s): MATH G160.

Grading Mode: Pass/No Pass
Not Transferable.

This co-requisite course is intended for students that enroll into MATH G160. It provides supplemental instruction in basic algebra skills and concepts needed for success in Introduction to Statistics computations and applications. Success in this course will be based on attendance and satisfactory completion of in-class assignments. Requires concurrent enrollment in specified sections of MATH G160. Pass/No Pass. NOT DEGREE APPLICABLE.

MATH G100 **3 Units (54 lecture hours)****Liberal Arts Mathematics**

Prerequisite(s): MATH G030 or MATH G040 or MATH G080 or achieve qualifying score on Math Placement.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

Using and expanding upon a student's current algebraic skills set, this course offers the liberal arts student an applications-oriented, problem-solving exploration into a variety of mathematical fields including geometry, statistics, and business mathematics. This course is designed not only to meet college general education requirements but to help generate a positive attitude toward and an interest in mathematics. Graded.

MATH G103 **3 Units (54 lecture hours; 18 lab hours)****Statistics For Elementary Teachers**

Prerequisite(s): MATH G030 or MATH G040 or MATH G080 or achieve qualifying score on Math Placement.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

Formerly: Elem. Teachers Math: 3-Probability and Statistics. This course is designed for prospective teachers. This course is an activity-based exploration of statistics aligned with the California State Mathematics Standards. Topics include data representation and analysis, randomization and sampling, measures of central tendency and variability, hypothesizing and statistical inference. Graded. UC credit limitations: MATH G103, MATH G160, BIOL G260 and PSYC G140 combined – maximum credit, 1 course.

MATH G104 **3 Units (54 lecture hours)****Mathematics For Elementary Teachers**

Prerequisite(s): MATH G030 or MATH G040 or MATH G080 or achieve qualifying score on Math Placement.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

Formerly: Mathematics for Elementary Teachers 1. This course is designed for the prospective elementary school teacher. Topics include problem-solving, structure and arithmetic of the real numbers and other numerical systems, set theory, and manipulatives. This course is designed to develop and reinforce conceptual understanding of the national and state curriculum standards for elementary school mathematics, including the common core. Graded. **C-ID:** MATH 120.

MATH G115 **4 Units (72 lecture hours)****College Algebra**

Prerequisite(s): MATH G030 or MATH G040 or achieve qualifying score on Math Placement.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

This course is designed for students planning to enroll in MATH G140, G150, or G160. Topics include matrices and determinants, theory of equations and systems, graphing equations and functions, logarithmic and exponential functions and their graphs, polynomial and rational functions, conics sections, sequences and series, counting and probability. A scientific calculator is recommended. Graded. UC credit limitations: MATH G115 and MATH G170 combined – maximum credit, 1 course.

MATH G120 **3 Units (54 lecture hours)****Trigonometry**

Prerequisite(s): MATH G030 or MATH G040 or achieve qualifying score on Math Placement.

Grading Mode: Standard Letter

Transfer Credit: CSU.

This course is a study of the circular and trigonometric functions. The topics include inverses, graphs, solutions of triangles, conditional equations, identities, vectors, complex numbers, polar coordinates, parametric equations, and applications of these concepts. A scientific calculator is recommended. Graded. **C-ID:** MATH 851.

MATH G140 **4 Units (72 lecture hours)****Business Calculus**

Prerequisite(s): MATH G115 or MATH G170 or achieve qualifying score on Math Placement.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

This course is designed for students of business, management, and social science who need only one semester of calculus that covers a variety of topics that usually span parts of three semesters of calculus. Topics include functions, limits and continuity, differentiation, integration, graphing, the calculus of two variables and applications of the derivative and integral. This course does not prepare a student to enter MATH G180 or G185. Graded. UC credit limitations: MATH G140 and MATH G180 combined – maximum credit, 1 course. **C-ID:** MATH 140.

MATH G160 **4 Units (72 lecture hours)****Introduction To Statistics**

Prerequisite(s): MATH G030 or MATH G040 or MATH G080 or achieve qualifying score on Math Placement.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

This course includes concepts and procedures of descriptive and inferential statistics; collecting, classifying, tabulating, graphing univariate and bivariate data; measures of central tendencies, variation, percentiles, probability, binomial, normal, T, Chi-square and F distributions; making inferences, decisions and predictions. This course develops statistical thinking through the study of and applications to data sets in the social and behavioral sciences, business, and other disciplines. The use of a graphing calculator and/or statistical analysis computer programs is integrated into the course. Graded. UC credit limitations: MATH G103, MATH G160, BIOL G260 and PSYC G140 combined – maximum credit, 1 course. **C-ID:** MATH 110, SOCI 125.

MATH G170 **5 Units (90 lecture hours)****Precalculus**

Prerequisite(s): MATH G120 or achieve qualifying score on Math Placement.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

This course will cover topics required for studying calculus. Particular emphasis will be placed on the analysis of polynomial, rational, exponential, logarithmic, trigonometric and inverse functions. Other topics include vectors, analytic geometry, linear systems, matrices, elementary theory of equations, polar coordinates, sequences, series, and complex numbers. This course is essential for those students planning to study MATH G180 – Calculus 1. Graded. UC credit limitations: MATH G115 and MATH G170 combined – maximum credit, 1 course.

MATH G180 **5 Units (90 lecture hours)****Calculus I**

Prerequisite(s): MATH G170, or MATH G115 and MATH G120, or achieve qualifying score on Math Placement.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

This is the first course in a three-course sequence designed for mathematics, science and engineering majors. The topics covered in this course include limits and continuity, derivatives of algebraic and transcendental functions, applications of derivatives, indefinite integrals, definite integrals, the Fundamental Theorem of Calculus and applications of integration. Graded. UC credit limitations: MATH G140 and MATH G180 combined – maximum credit, 1 course. **C-ID:** MATH 211, MATH 900S.

MATH G185 **5 Units (90 lecture hours)****Calculus 2**

Prerequisite(s): MATH G180 or MATH G180H.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

This is the second course in a three-course sequence designed for mathematics, science and engineering majors. The topics covered in this course include methods of integration, applications of the definite integral, polar and parametric functions, improper integrals, convergence and divergence of sequences and series including power series, and conic sections. The student should plan to complete the first three semesters of calculus at Golden West College to maintain continuity. Graded. **C-ID:** MATH 221, 900S.

MATH G235 **4 Units (72 lecture hours)****Applied Linear Algebra**

Prerequisite(s): MATH G185.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

Formerly: MATH G290. Introduction to linear algebra, classical linear algebra problems, and applications to computer science and related technologies including matrices, determinants, linear spaces, linear transformations, and eigenvalues. Graded. **C-ID:** MATH 250.

MATH G280 **5 Units (90 lecture hours)****Calculus 3**

Prerequisite(s): MATH G185.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

This is the third course in a three-course sequence, designed for mathematics, science and engineering majors. Topics include vectors in three-dimensional space, curves and surfaces, functions of several variables, partial differentiation, the gradient, the curl, the divergence, multiple integration, Green's Theorem, Gauss' (Divergence) Theorem and Stokes' Theorem. The student should plan to complete the first three semesters of calculus at Golden West College to maintain continuity. Graded. **C-ID:** MATH 230.

MATH G282 **4 Units (72 lecture hours)****Ordinary Differential Equations**

Prerequisite(s): MATH G185.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

This course provides students with an introduction to the theory, techniques and applications of ordinary differential equations. The topics covered include first-order differential equations, higher-order differential equations, power series solutions, Laplace transforms, systems of differential equations and numerical methods. Graded. **C-ID:** MATH 240.

MATH G285 **5 Units (90 lecture hours)**

Introduction to Linear Algebra and Differential Equations

Prerequisite(s): MATH G185.

Grading Mode: Standard Letter

Transfer Credit: CSU; UC.

Formerly: Ordinary Differential Equations. This course is designed to introduce students to the fields of Linear Algebra and Differential Equations. Topics include matrices, determinants, vector spaces, linear systems of equations, inner product spaces, first and second order differential equations, systems of differential equations, and Laplace transforms. Graded. **C-ID:** MATH 910S, MATH 240.