Mathematics

MATH 100 Nature of Modern Mathematics
3.0 units
Acceptable for credit: Transfer CSU
C-ID Course Number: N/A
Prerequisite: MATH 331 - Algebra 2 ; or Placement according to AHC placement policy
A study of contemporary topics in mathematics including statistics, social choice, management science, and geometric and algebraic patterns. (Fall, Spring) (Letter Grade or Pass/No Pass)

MATH 105 Mathematics for Teachers
4.0 units
Acceptable for credit: Transfer to UC, CSU
C-ID Course Number: Math 120
Prerequisite: MATH 331 - Algebra 2 ; or prior completion of Math 334 Algebra 2: Part 2
A study of basic concepts of mathematics required for the liberal studies major and the multiple subject teaching credential. It is recommended for current elementary and junior high school teachers. It is also recommended for the career technical single subject education credential candidate. Topics include development of critical thinking, set theory, logic, numeration systems, the set of integers, elementary number theory, the set of rational numbers, the set of real numbers, and measurement of geometric figures. (Fall, Spring) (Letter Grade Only)

MATH 121 Trigonometry
3.0 units
Acceptable for credit: Transfer CSU
Prerequisite: MATH 331 - Algebra 2 ; or Placement according to AHC placement policy.
The study of directed angles, degree/radian measures of angles, trigonometric functions of angles and of numbers, solutions of right and oblique triangles, identities, functions of composite angles, graphs, equations, inverse functions, vectors and complex numbers. (Fall, Spring) (Letter Grade Only)

MATH 123 Elementary Statistics
4.0 units
Acceptable for credit: *Transfer to CSU, limited to UC/see counselor
C-ID Course Number: MATH 110
Prerequisite: MATH 331 - Algebra 2 ; or Placement according to AHC placement policy.
A study of descriptive and inferential statistics including applications in the behavioral and natural sciences. Topics include classification and analysis of data, probability, distributions, sampling, the binomial, normal, t, F, and chi-square distributions, confidence intervals, hypothesis testing, regression analysis, analysis of variance and non-parametric methods. Calculators and/or computers will be used throughout. (Fall, Spring, Summer) (Letter Grade Only)

MATH 123S Support For Math 123: Elementary Statistics
1.0 unit
Acceptable for credit: Transfer CSU
Corequisite: MATH 123 - Elementary Statistics
This course is offered as a supplement for students enrolled in Math 123, Elementary Statistics. It is intended for students for whom support has been recommended or required. The course reviews prerequisite topics and strategies to be a more successful math student. (Fall, Spring, Summer) (Pass/No Pass)

MATH 131 College Algebra
3.0 units
Acceptable for credit: Transfer to UC, CSU
Prerequisite: MATH 331 - Algebra 2 ; or Placement according to AHC placement policy.
College level course in algebra for majors in science, technology, engineering, and mathematics: polynomial, rational, radical, exponential, absolute value, and logarithmic functions; systems of equations; theory of polynomial equations; analytic geometry. (Fall, Spring, Summer) (Letter Grade Only)

MATH 131S Support For Math 131: College Algebra
1.5 units
Acceptable for credit: Transfer CSU
Corequisite: MATH 131 - College Algebra
This course is offered as a supplement for students enrolled in Math 131; College Algebra. It is intended for students for whom support has been recommended or required. The course reviews prerequisite topics and strategies to be a more successful math student. (Fall, Spring, Summer) (Pass/No Pass)

MATH 135 Calculus with Applications
4.0 units
Acceptable for credit: Transfer to UC, CSU
C-ID Course Number: Math 140
Prerequisite: MATH 331 - Algebra 2 ; or Placement according to AHC placement policy.
Techniques of calculus as applied to problem-solving in business and social, behavioral, and natural sciences, including limits, continuity, differentiation and integration in one and several dimensions, optimization, transcendental functions, and the use of computing technology. (Fall, Spring) (Letter Grade Only)

MATH 135S Support For Math 135: Calculus with Applications
1.5 units
Acceptable for credit: Transfer CSU
Corequisite: MATH 135 - Calculus with Applications
This course is offered as a supplement for students enrolled in Math 135, Calculus with Applications. It is intended for students for whom support has been recommended or required. The course reviews prerequisite topics and strategies to be a more successful math student. (Fall, Spring) (Pass/No Pass)

MATH 141 Precalculus
6.0 units
Acceptable for credit: Transfer to UC, CSU
C-ID Course Number: MATH 955
Prerequisite: MATH 331 - Algebra 2 ; or Placement according to AHC placement policy.

Preparation for calculus: the study of polynomial, absolute value, radical, rational, exponential, and logarithmic functions, analytic geometry, and polar coordinates. The study of trigonometric functions, their inverses and their graphs, identities and proofs related to trigonometric expressions, trigonometric equations, solving right triangles, solving triangles using the Law of Cosines and the Law of Sines, and introduction to vectors. This is an accelerated one semester alternative to the two semesters of trigonometry (Math 121) and College Algebra (Math 131). (Fall, Spring, Summer) (Letter Grade Only)

MATH 141S Support For Math 141: Precalculus
1.5 units
Acceptable for credit: Transfer CSU
Corequisite: MATH 141 - Precalculus
This course is offered as a supplement for students enrolled in Math 141, Precalculus. It is intended for students for whom support has been recommended or required. The course reviews prerequisite topics and strategies to be a more successful math student. (Fall, Spring, Summer) (Pass/No Pass)

MATH 179A Support for Math 123: Elementary Statistics
1.0 unit
Acceptable for credit: D - Credit - Degree Applicable
This course is offered as a supplement for students enrolled in Math 123, Elementary Statistics. It is intended for students for whom support has been recommended or required. The course reviews prerequisite topics and strategies to be a more successful math student. (Fall, Spring) (Pass/No Pass)

MATH 181 Calculus 1
4.0 units
Acceptable for credit: *Transfer to CSU, limited to UC/see counselor
C-ID Course Number: MATH 210, MATH 900S
Prerequisite: MATH 141 - Precalculus ; or MATH 121 - Trigonometry ; and MATH 131 - College Algebra
The first in a two-semester sequence comprising first-year calculus. Topics include functions, limits, continuity, the derivative, differentiation of algebraic, trigonometric and transcendental functions, applications of differentiation, the definite integral, and the use of technology to solve calculus problems. (Fall, Spring, Summer) (Letter Grade Only)

MATH 181S Support for Math 181: Calculus 1
2.0 units
Acceptable for credit: Transfer CSU
Corequisite: MATH 181 - Calculus 1
This course is offered as a supplement for students enrolled in Math 181, Calculus 1. It is intended for students for whom support has been recommended or required. The course reviews prerequisite topics and strategies to be a more successful math student. (Pass/No Pass)

MATH 182 Calculus 2
4.0 units
Acceptable for credit: Transfer to UC, CSU
C-ID Course Number: MATH 220, MATH 900S

Prerequisite: MATH 181 - Calculus 1
The second in a two-semester sequence comprising first-year calculus. Topics include methods and applications of integration, sequences and series, Taylor series, an introduction to differential equations, and the use of technology to solve calculus problems. (Fall, Spring) (Letter Grade Only)

MATH 183 Multivariable Calculus
4.0 units
Acceptable for credit: Transfer to UC, CSU
C-ID Course Number: MATH 230
Prerequisite: MATH 182 - Calculus 2
Topics include vectors, functions of several variables; differentiation and integration in several dimensions; change of variables; parameterized curves and vector fields, line and surface integrals; Green's, Stokes', and divergence theorems. (Fall, Spring) (Letter Grade Only)

MATH 184 Linear Algebra/Differential Equations
5.0 units
Acceptable for credit: Transfer to UC, CSU
C-ID Course Number: MATH 910S
Prerequisite: MATH 182 - Calculus 2
First order ordinary differential equations, including separable, linear, homogeneous of degree zero, Bernoulli and exact with applications and numerical methods. Solutions to higher order differential equations using undetermined coefficients, variation of parameters, and power series, with applications. Solutions to linear and non-linear systems of differential equations, including numerical solutions. Matrix algebra, solutions of linear systems of equations, and determinants. Vector spaces, linear independence, basis and dimension, subspace and inner product space, including the Gram-Schmidt procedure. Linear transformations, kernel and range, eigenvalues, eigenvectors, diagonalization and symmetric matrices. (Fall, Spring) (Letter Grade Only)

MATH 189 Independent Projects
1.0 - 3.0 units
Acceptable for credit: Transfer CSU
C-ID Course Number: N/A
Courses for students capable of independent work who demonstrate the need or desire for additional study beyond the regular curriculum. Enrollment allows students to pursue activities such as directed field experience, research, or development of skills and competencies under faculty advisement and supervision. Independent projects may be earned in most disciplines. Students wishing to enroll in Independent Projects should contact the appropriate instructor identified in the class schedule. If the project proposed is acceptable to that instructor, a contract will be developed. All contracts for these classes must be completed and submitted to the Records Office no later than the end of the second week of the semester. Students may enroll for any combination (unit value) of Independent Projects 189 and/or 389 for a total of four semesters in a specific discipline. Units are awarded depending upon satisfactory performance and the amount of time committed by the student to the course. Allowable units vary according to discipline, and are based on the following formula: 1 unit - 48 hours per semester 2 units - 96 hours per semester 3 units - 144 hours per semester (Letter Grade or Pass/No Pass)

MATH 309 Algebra and Math Literacy
4.0 units
Acceptable for credit: D - Credit - Degree Applicable
Prerequisite: MATH 521 - Foundations of Mathematics or MATH 531
This course will focus on mathematical modeling, including linear equations, quadratic equations and exponential equations. Fundamentals of algebra, geometry, statistics and measurement will be discussed. Numeracy, graphing and problem solving strategies will be incorporated throughout the course. (Fall, Spring, Summer) (Letter Grade or Pass/No Pass)

MATH 311 Algebra 1
4.0 units
Acceptable for credit: D - Credit - Degree Applicable
Prerequisite: MATH 521 - Foundations of Mathematics ; or MATH 579A
A study of the fundamental ideas and methods used to simplify expressions and solve equations and inequalities, including applications. Topics covered include the real numbers, linear equations and inequalities, graphing, polynomials, factoring, rational expressions, introduction to square roots, and quadratic equations. This course is not open to students who are enrolled in or have received credit for MATH 313 or 314. (Fall, Spring, Summer) (Letter Grade or Pass/No Pass)

MATH 321 First Year Geometry
3.0 units
Acceptable for credit: C - Credit - Not Degree Applicable
Prerequisite: MATH 309 - Algebra and Math Literacy ; or MATH 311 - Algebra 1 ; or completion of Math 313 and 314
A study of basic geometry principles including constructions, congruence, parallels, right triangles, similarity, circles, and proofs. (Fall, Spring, Summer) (Letter Grade or Pass/No Pass)

MATH 331 Algebra 2
4.0 units
Acceptable for credit: D - Credit - Degree Applicable
Advisories: MATH 321 - First Year Geometry
Prerequisite: MATH 309 - Algebra and Math Literacy ; or MATH 311 - Algebra 1 ; or MATH 313 and MATH 314
A continuation of the study of methods used to simplify expressions and solve equations and inequalities, including applications. Topics covered include exponents and radicals, rational and radical expressions, complex numbers, nonlinear equations and inequalities, functions and their graphs, systems of equations, exponential expressions, and logarithms. (Fall, Spring, Summer) (Letter Grade or Pass/No Pass)

MATH 331S Support For Math 331: Algebra 2
1.0 unit
Acceptable for credit: D - Credit - Degree Applicable
Corequisite: MATH 331 - Algebra 2
This course is offered as a supplement for students enrolled in Math 331; Algebra 2. It is intended for students for whom support has been recommended. or required. The course reviews prerequisite topics and strategies to be a more successful math student. (Fall, Spring, Summer) (Pass/No Pass)

MATH 521 Foundations of Mathematics
5.0 units
Acceptable for credit: C - Credit - Not Degree Applicable
Prepares students for the algebra sequence and updates mathematical skills for personal, career, or academic advancement. Topics include: fractions, decimals, percents, measurement, signed numbers, simple equations and modeling. The course emphasizes problem solving techniques that are useful in practical situations. Students should have knowledge of multiplication tables, division, subtraction, number operations and number sense, measurement, basic geometry, and patterns. The course is not open to students who have passed MATH 511. (Fall, Spring) (Letter Grade or Pass/No Pass)