MATHEMATICS (MATH)

MATH-020
Foundations for Quantitative Reasoning **1 UNITS**
Corequisite: MATH 120
1.0 hours lecture
This support course focuses on the skills and concepts needed for success in Quantitative Reasoning (QR). This course is for students concurrently enrolled in Math 120. Students will receive extra support in arithmetic, algebra, geometry, problem solving, technology, and study skills. Pass/No Pass only. Non-degree applicable.

MATH-060
Foundations for Elementary Statistics **2 UNITS**
Prerequisite: Appropriate placement
Corequisite: MATH 160
2.0 hours lecture
This support course focuses on the skills and concepts needed for success in transfer-level statistics. This course is for students concurrently enrolled in statistics at Cuyamaca College. Students will receive extra support in arithmetic, algebra, problem solving, technology, and study skills. Pass/No Pass only. Non-degree applicable.

MATH-076
Foundations for PreCalculus **2 UNITS**
Prerequisite: Appropriate placement
Corequisite: MATH 176
2.0 hours lecture
Support for this course focuses on the skills and concepts needed for success in PreCalculus. This course is for students concurrently enrolled in PreCalculus (Math 176) at Cuyamaca College. Students will receive extra support in algebra, geometry, problem solving, technology, and study skills. Pass/No Pass only. Non-degree applicable.

MATH-078
Foundations for Calculus for Business Social & Behavioral Sciences **2 UNITS**
Prerequisite: Appropriate placement
Corequisite: MATH 178
2.0 hours lecture
Support for this course focuses on the skills and concepts needed for success in Calculus for Business, Social & Behavioral Sciences (Math 178). This course is for students concurrently enrolled in Math 178 at Cuyamaca College. Students will receive extra support in algebra, geometry, problem solving, technology, and study skills. Pass/No Pass only. Non-degree applicable.

MATH-080
Foundations for Calculus & Analytic Geometry I **2 UNITS**
Prerequisite: Appropriate placement
Corequisite: Concurrent enrollment in MATH 180
2.0 hours lecture
Support for this course focuses on the skills and concepts needed for success in Calculus and Analytic Geometry I. This course is for students concurrently enrolled in Calculus I (Math 180) at Cuyamaca College. Students will receive extra support in algebra, analytic geometry, trigonometry, technology, and study skills. Pass/No Pass only. Non-degree applicable.

MATH-120
Quantitative Reasoning **3 UNITS**
Prerequisite: Appropriate mathematics placement
3.0 hours lecture
The students will survey the historical development of mathematics and apply topics such as logic, geometry, probability, statistics, problem solving, sequences and patterns, numeration systems, and personal finance to develop quantitative reasoning skills. Designed for students who do not intend to prepare for a career in science or business. (CSU/UC) (AA/AS-A2, CSU-B4, IGETC-2A)

MATH-121
Quantitative Reasoning for Career Education **3 UNITS**
3.0 hours lecture
A mathematics course designed to develop the computational skills needed in many Career Education (CE) programs. Topics include geometry, measurement, number sense, estimation, basic statistics, trigonometric functions, and critical thinking skills. (CSU) (AA/AS-A2)

MATH-125
Structure and Concepts of Elementary Mathematics I **3 UNITS**
Prerequisite: Appropriate Placement or Intermediate Algebra
3.0 hours lecture, 1.0 hours laboratory
In blending the mathematical topics of sets, whole numbers, numeration, number theory, integers, rational and irrational numbers, measurement, relations, functions and logic, the course will investigate the interrelationships of these topics using a problem-solving approach and appropriate use of technology. (C-ID MATH 120) (CSU/UC) (AA/AS-A2, CSU-B4, IGETC-2A)

MATH-126
Structure and Concepts of Elementary Mathematics II **3 UNITS**
Prerequisite: "C" grade or higher or "Pass" in MATH 125 or equivalent
3.0 hours lecture, 1.0 hours laboratory
In blending the mathematical topics of statistics, probability, measurement, coordinate geometry, plane geometry, solid geometry, logic, relations and functions, the course will investigate the interrelationships of these topics using a problem-solving approach and appropriate use of technology. (CSU/UC) (CSU-B4, IGETC-2A)

MATH-128
Children's Mathematical Thinking **2 UNITS**
Prerequisite: MATH 125 or equivalent or concurrent enrollment in MATH 125
2.0 hours lecture
Children's mathematical thinking and in-depth analyses of children's understanding of operations (addition, subtraction, multiplication, division) and place value. Students will observe individual children solving mathematics problems. (CSU)

MATH-160
Elementary Statistics **4 UNITS**
Prerequisite: Appropriate Placement or Intermediate Algebra
4.0 hours lecture
The use of probability techniques, hypothesis testing, and predictive techniques to facilitate decision-making. Topics include descriptive statistics; probability and sampling distributions; statistical inference; correlation and linear regression; analysis of variance, chi-square and t-tests; and application of technology for statistical analysis including the interpretation of the relevance of the statistical findings. Applications using data from disciplines including business, social sciences, psychology, life science, health science, and education. (C-ID MATH 110) (CSU/UC) (AA/AS-A2, CSU-B4, IGETC-2A)

MATH-170
Analytic Trigonometry **3 UNITS**
Prerequisite: Appropriate Placement or Intermediate Algebra
3.0 hours lecture
Theoretical approach to the study of the trigonometric functions with emphasis on circular functions, trigonometric identities, trigonometric equations, graphical methods, vectors and applications, complex numbers, and solving triangles with applications. Successful completion of MATH 170 and 175 is equivalent to the successful completion of MATH 176. Maximum of 7 units can be earned for successfully completing any combination of MATH 170, 175, 176. (CSU) (AA/AS-A2, CSU-B4)

MATH-175
College Algebra **4 UNITS**
Prerequisite: Appropriate Placement or Intermediate Algebra
4.0 hours lecture
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; and analytic geometry. Successful completion of MATH 170 and 175 is equivalent to the successful completion of MATH 176. Maximum of 7 units can be earned for successfully completing any combination of MATH 170, 175, 176. (C-ID MATH 151) (CSU/UC) (AA/AS-A2, CSU-B4, IGETC-2A)

MATH-176
PreCalculus: Functions and Graphs **6 UNITS**
Prerequisite: Appropriate placement or Intermediate Algebra
6.0 hours lecture
Preparation for calculus: polynomial, absolute value, radical, rational, exponential, logarithmic, and trigonometric functions and their graphs; analytic geometry, polar coordinates. Successful completion of MATH 176 is equivalent to the successful completion of MATH 170 and 175. Maximum of 7 units can be earned for successfully completing any combination of MATH 170, 175, 176. (CSU/UC) (AA/AS-A2, CSU-B4, IGETC-2A)

MATH-178
Calculus for Business, Social and Behavioral Sciences **4 UNITS**
Prerequisite: Appropriate Placement or Intermediate Algebra
4.0 hours lecture
Presents a study of the techniques of calculus with emphasis placed on the application of these concepts to business and management related problems. The applications of derivatives and integrals of functions including polynomials, rational, exponential and logarithmic functions are studied. Not open to students with credit in MATH 180. (C-ID MATH 140) (CSU/UC) (AA/AS-A2, CSU-B4, IGETC-2A)

MATH-180
Analytic Geometry and Calculus I **5 UNITS**
Prerequisite: "C" grade or higher or "Pass" in MATH 170 and 175, or MATH 176 or equivalent
5.0 hours lecture
Graphic, numeric and analytic approaches to the study of analytic geometry, limits and continuity of functions, and introductory differential and integral calculus. Applications involving analysis of algebraic, exponential, logarithmic, trigonometric and hyperbolic functions from a variety of disciplines including science, business and engineering. First of three courses designed to provide math, science, and engineering students with a solid introduction to the theory and techniques of analysis. (C-ID MATH 210, 900S [with MATH 280]) (CSU/UC) (AA/AS-A2, CSU-B4, IGETC-2A)

MATH-245
Discrete Mathematics **3 UNITS**
Prerequisite: "C" grade or higher or "Pass" in MATH 280 or equivalent
3.0 hours lecture
Introduction to discrete mathematics. Includes basic logic, methods of proof, sequences, elementary number theory, basic set theory, elementary counting techniques, relations, and recurrence relations. (C-ID MATH 160) (CSU/UC) (AA/AS-A2, CSU-B4, IGETC-2A)

MATH-280
Analytic Geometry and Calculus II **4 UNITS**
Prerequisite: "C" grade or higher or "Pass" in MATH 180 or equivalent
4.0 hours lecture
A second course in differential and integral calculus of a single variable: integration; techniques of integration; infinite sequences and series; polar and parametric equations; applications of integration. Primarily for science, technology, engineering and math majors. (C-ID MATH 220, 900S [with MATH 180]) (CSU/UC) (AA/AS-A2, CSU-B4, IGETC-2A)

MATH-281
Multivariable Calculus **4 UNITS**
Prerequisite: "C" grade or higher or "Pass" in MATH 280 or equivalent
4.0 hours lecture
The third of a three-course sequence in calculus. Topics include vector valued functions, calculus of functions of more than one variable, partial derivatives, multiple integration, Green's Theorem, Stokes' Theorem, and divergence theorem. (C-ID MATH 230) (CSU/UC) (AA/AS-A2, CSU-B4, IGETC-2A)

MATH-284
Linear Algebra **3 UNITS**
Prerequisite: "C" grade or higher or "Pass" in MATH 280 or equivalent
3.0 hours lecture
This course develops the techniques and theory needed to solve and classify systems of linear equations. Solution techniques include row operations, Gaussian elimination, and matrix algebra. Investigates the properties of vectors in two and three dimensions, leading to the notion of an abstract vector space. Vector space and matrix theory are presented including topics such as inner products, norms, orthogonality, eigenvalues, eigenspaces, and linear transformations. Selected applications of linear algebra are included. (C-ID MATH 250, 910S [with MATH 285]) (CSU/UC) (AA/AS-A2, CSU-B4, IGETC-2A)

MATH-285
Differential Equations **3 UNITS**
Prerequisite: "C" grade or higher or "Pass" in MATH 280 or equivalent
3.0 hours lecture
This course is an introduction to ordinary differential equations including both quantitative and qualitative methods as well as applications from a variety of disciplines. Introduces the theoretical aspects of differential equations, including establishing when solution(s) exist, and techniques for obtaining solutions, including series solutions, singular points, Laplace transforms and linear systems. (C-ID MATH 240, 910S [with MATH 284]) (CSU/UC) (CSU-B4, IGETC-2A)