COURSES

MATHEMATICS COURSES

MAT 000B   Plane Geometry   4.0 UNITS
Prerequisite: MATH 903 or satisfactory score on an appropriate Mathematics Placement Exam. Basic concepts of plane geometry for lines, planes, triangles and spheres and an introduction to deductive reasoning. Pass/No Pass Option.

MAT 000C   Intermediate Algebra (5.0 Lecture)   5.0 UNITS
Prerequisite: Completion of the Mission College Placement Assistance Tool prior to registration. The student will study fundamental laws of exponents and radicals, quadratic equations, graphical representations, complex numbers, functions and inverses, logarithmic and exponential functions, conic sections, sequences and series, linear systems and inequalities, and applied problems.

MAT 000CM   Intermediate Algebra (MAPS) (5.0 Lecture)   5.0 UNITS
Prerequisite: Completion of the Mission College Placement Assistance Tool prior to registration. Co-Requisite: MAT 00CMX The MAPS program offers students a team approach to succeed in elementary and intermediate algebra. This program is designed for students who have had difficulty in their math course in the past and is the second course in the MAPS sequence. The students study fundamental laws of exponents and radicals, quadratic equations, graphical representations, complex numbers, functions and inverses, logarithmic and exponential functions, conic sections, sequences and series, linear systems and inequalities, and applied problems. Concurrent enrollment in MAT 00CMX is mandatory. Pass/No Pass Option.

MAT 000D   Trigonometry (3.0 Lecture)   3.0 UNITS
Prerequisite: MAT 000C or High School Algebra II, or equivalent OR Prerequisite: MAT 000CM or High School Algebra II, or equivalent OR Prerequisite: MAT 00CMX or High School Algebra II, or equivalent Course topics include trigonometric functions, including applications to triangles, circular functions, radian measure, graphs, polar coordinates, trigonometric identities, inverse trigonometric functions, vectors, and complex numbers. C-ID # MATH 851, MATH 955.

MAT 000G   Mathematics for the Liberal Arts Student (4.0 Lecture)   4.0 UNITS
Prerequisite: MAT 000C or High School Algebra II, or equivalent OR Prerequisite: MAT 000CM or High School Algebra II, or equivalent OR Prerequisite: MAT 00CMX or High School Algebra II, or equivalent. This course fulfills the graduation competency requirement for Associate degree and the general education requirement in mathematics for the CSU system. It introduces critical thinking techniques in areas of mathematics that include, but not limited to sequences and series, probability and statistics, countable and uncountable sets, cryptography and number theory, history of mathematics, mathematics in art and nature, the Pythagorean Theorem, and methods of proof, and game theory. There is an emphasis on general problem solving techniques as the class explores mathematics that may will be unfamiliar to most students, and communicate mathematics through class activities and write-ups.

MAT 001   College Algebra (4.0 Lecture)   4.0 UNITS
Prerequisite: MAT 000C or Prerequisite: MAT 000CM or Prerequisite: MAT 00CMX or High School Algebra II, or equivalent. This is a college-level course in preparation for the Calculus sequence. Its contents include real and complex number systems, polynomials, algebraic fractions, exponents and radicals, linear and quadratic equations, simultaneous equations, inequalities, functions, theory of equations, exponential and logarithmic equations, sequence and series, induction and the binomial theorem. C-ID # MATH 955.

MAT 002   Precalculus and Trigonometry (6.0 Lecture)   6.0 UNITS
Prerequisite: MAT 000C or Prerequisite: MAT 000CM or Prerequisite: MAT 00CMX or High School Algebra II, or equivalent. This is an intensive course covering those topics traditionally found in the separate courses of college algebra (MATH 001) and trigonometry (MATH 000D). This course is designed for the highly motivated and very well- prepared student who desires to fulfill the requirements of MATH 000D and MATH 001 in one semester. It prepares the student for the Calculus 003A/B sequence.

MAT 003A   Analytic Geometry and Calculus I (5.0 Lecture)   5.0 UNITS
Prerequisite: MAT 002 or placement into the course by the Mission College Mathematics Placement Exam. ; or Prerequisite: MAT 000D or higher or satisfactory score on an appropriate Mathematics Placement Exam. and Prerequisite: MAT 001 or placement into the course by the Mission College Mathematics Placement Exam. This is the first part of the three-semester calculus sequence. Topics include functions,limits, continuity, differentiation and integration, and applications for polynomial and transcendental functions. C-ID # MATH 210.

MAT 003AH   Analytic Geometry and Calculus I - Honors (5.0 Lecture)   5.0 UNITS
Prerequisite: MAT 002 or placement into the course by the Mission College Mathematics Placement Exam. ; or Prerequisite: MAT 000D or placement into the course by the Mission College Mathematics Placement Exam. and Prerequisite: MAT 001 or placement into the course by the Mission College Mathematics Placement Exam. This course is the honors version of the Calculus I course and is the first part of the three-semester calculus sequence for math, physics and engineering majors. Course topics include functions, limits, continuity, differentiation and integration, maxima, minima, and other applications, and the relationship between calculus and analytic geometry for polynomial and transcendental functions. Students may not receive credit for both MATH 003A and MATH 003AH. Enrollment in the Honors Transfer Project is required.

MAT 003B   Analytic Geometry and Calculus II (5.0 Lecture)   5.0 UNITS
Prerequisite: MAT 003A or Prerequisite: MAT 003AH This is the second part of the three-semester calculus sequence. Topics include infinite series, vectors in the plane, parametric equations, conic sections, polar coordinates and integration techniques with applications. C-ID # MATH 220.

MAT 004A   Multivariable Calculus (5.0 Lecture)   5.0 UNITS
Prerequisite: MAT 003B This course is the third part of the three-semester calculus sequence for math, physics, and engineering majors. Students study and demonstrate knowledge and understanding of vectors in two-and three-dimensional space, vector-valued functions, calculus of functions for several variables, differentials, gradients, Lagrange Multipliers, multiple integrals, line integrals, and an introduction to Green's Theorem, Divergence Theorem, and Stokes' Theorem. C-ID # MATH 230.

MAT 004B   Differential Equations (4.0 Lecture)   4.0 UNITS
Prerequisite: MAT 003B Topics include ordinary differential equations, with emphasis on linear equations, and partial differential equations. Methods include Laplace Transforms, power series, Fourier series, numerical solutions and applications. C-ID # MATH 240.

MAT 004C   Linear Algebra (4.0 Lecture)   4.0 UNITS
Prerequisite: MAT 003B Advisory: MAT 004A This course covers basic linear algebra including systems of linear equations, Gaussian elimination, determinants, matrices, vector spaces, transformations, eigenvalues, and eigenvectors. C-ID # MATH 250.

MAT 005   Programming and Problem-Solving in MATLAB (2.0 Lecture/1.0 Lab)   3.0 UNITS
Prerequisite: MAT 003A or Prerequisite: MAT 003AH or higher. This course utilizes the MATLAB environment to provide students with a working knowledge of computer-based problem-solving methods relevant to mathematics, science and engineering. Topics include procedural and object-oriented programming, two- and three-dimensional graphing, data import and export, curve fitting, recursion and applications in engineering, physics, and mathematics. C-ID # ENGR 220.

MAT 009   Integrated Statistics II (5.0 Lecture)   5.0 UNITS
Prerequisite: MAT 909 This is the second of two courses in the Statway sequence. Students study probability, descriptive and inferential statistics including probability distribution, hypothesis testing, linear regression and applications. Current statistical technology packages are used. This sequence is recommended for students with majors that require no mathematics beyond freshman-level statistics. Successful completion of both Math 909 and Math 009 is required to satisfy CSU and UC transferability.

MAT 00CMX   Intermediate Algebra MAPS Extra (3.0 Lecture)   3.0 UNITS
Prerequisite: Completion of the Mission College Placement Assistance Tool prior to registration. Co-Requisite: MAT 000CM This lecture course is a corequisite for MAT 000CM. It is part of the MAPS program and provides additional time to help students succeed by participating in enhanced and innovative learning strategies and activities.

MAT 00CP   Prep Trig/Bus Math   2.0 UNITS
Prerequisite: MATH 000C or satisfactory score on an appropriate Mathematics Placement Exam. This is an accelerated review of all the material from Intermediate Algebra. The course will concentrate on those areas of Intermediate Algebra which require additional work. Pass/No Pass Only.

MAT 010   Elementary Statistics (4.0 Lecture)   4.0 UNITS
Prerequisite: MAT 000C or Prerequisite: MAT 000CM or Prerequisite: MAT 00CMX or High School Algebra II, or equivalent. Students study and demonstrate knowledge and understanding of descriptive and inferential statistics including data analysis, correlation and linear regression, probability, probability distributions and assorted hypothesis testing. Particular emphasis is placed on applications. Current statistical computer packages are used. C-ID # MATH 110.

MAT 010H   Elementary Statistics - Honors (4.0 Lecture)   4.0 UNITS
Prerequisite: MAT 000C or Prerequisite: MAT 000CM or Prerequisite: MAT 00CMX or High School Algebra II, or equivalent. This course is the honors version of the Elementary Statistics course. The course provides students with a comprehensive introduction to statistical methods and research. Topics include descriptive and inferential statistics, correlation and linear regression, probability, probability distributions and assorted hypothesis testing. Particular emphasis is placed on applications and data analysis. Current statistical computer packages are used. Students may not receive credit for both MAT 010 and MAT 010H. Enrollment in the Honors Transfer Project is required. C-ID # MATH 110.

MAT 010X   Elementary Statistics with Additional Support (6.0 Lecture)   6.0 UNITS
Students study and demonstrate knowledge and understanding of descriptive and inferential statistics including data analysis, correlation and linear regression, probability, probability distributions and assorted hypothesis testing. Particular emphasis is placed on applications. Current technology is used. Areas of support will include review of arithmetic and algebra topics that underlie statistical procedures and concepts, hands-on activities that promote a deeper understanding of statistical ideas, and study skills that promote success in statistics.

MAT 012   Calculus for Business (4.0 Lecture)   4.0 UNITS
Prerequisite: MAT 000C or Prerequisite: MAT 000CM or Prerequisite: MAT 00CMX or High School Algebra II, or equivalent. Course topics include the intuitive concept of a limit, and simple techniques of differential and integral calculus and their most common applications in business. This course is not equivalent to MAT 003A. C-ID # MATH 140.

MAT 014   Math for Elementary School Teachers (Number Systems)   3.0 UNITS
Prerequisite: MATH 000C or MATH 000CM or successful placement into the course based on the Mission College Mathematics Placement Exam. Advisory: MATH 000B. This course covers systems of numbers, emphasizes patterns and relationships, presents mathematical models and real-word applications, and provides algorithms for estimating and finding exact answers when doing calculations. Appropriate problem solving, critical thinking, and communication are included. The course is designed for students who intend to become elementary school teachers. Pass/No Pass Option.

MAT 019   Discrete Mathematics (4.0 Lecture)   4.0 UNITS
Prerequisite: MAT 001 or MAT 002 The student studies and demonstrates knowledge and understanding of the discrete mathematics appropriate for computer applications. Topics may include graphs, sets, logic, mathematical induction, functions and relations, sequences and series, matrices, combinatorics, Boolean algebra and algebraic structures such as groups, rings and fields. Computer implementations of these mathematical techniques are incorporated throughout the course. C-ID # MATH 160.

MAT 900DX   Math Skills for Success in Trigonometry (2.0 Lecture)   2.0 UNITS
Prerequisite: MAT 000C or MAT 000CM or High School Algebra II, or equivalent. Corequisite: MAT 000D Math Skills for Success in Trigonometry is for students concurrently enrolled in MAT 000D. In this course students will review algebraic and basic geometric topics that underlie Trigonometry concepts and practice reading skills and other study skills that promote success in MAT 000D. Concurrent enrollment in MAT 000D is required.

MAT 901X   Math Skills for Success in College Algebra (2.0 Lecture)   2.0 UNITS
Prerequisite: MAT 000C or MAT 000CM or High School Algebra II, or equivalent. Corequisite: MAT 001 Math Skills for Success in College Algebra is for students concurrently enrolled in MAT 001. In this course students will review algebraic and basic geometric topics that underlie College Algebra concepts and practice reading skills and other study skills that promote success in MAT 001. Concurrent enrollment in MAT 001 is required.

MAT 902   Pre-Algebra (4.0 Lecture)   4.0 UNITS
Prerequisite: Completion of the Mission College Placement Assistance Tool prior to registration. This course is designed for those students who have a solid foundation in arithmetic skills but need to develop those skills further before taking Algebra.

MAT 903   Elementary Algebra (5.0 Lecture)   5.0 UNITS
Prerequisite: Appropriate placement by Multiple Measures. Course topics include operations with real numbers; properties of real numbers and signed exponents; solving and graphing linear equations; solving linear inequalities; functions; factoring polynomials; solving quadratic equations by factoring; simplifying rational expressions; solving rational equations; applications of linear, quadratic, and rational equations; and working with scientific notation.

MAT 903M   Elementary Algebra (MAPS) (5.0 Lecture)   5.0 UNITS
Prerequisite: Completion of the Mission College Placement Assistance Tool prior to registration. Co-Requisite: MAT 903MX The MAPS program offers students a team approach to succeed in elementary and intermediate algebra. This program is designed for students who have had difficulty in their math course in the past. Students study operations of signed numbers, exponents, polynomials and rational expressions; properties of real numbers, equations and exponents; solving and graphing linear equations; applications of linear equations; and factoring of polynomials. Pass/No Pass Option. Concurrent enrollment in MAT 903MX is mandatory.

MAT 903MX   Elementary Algebra MAPS Extra (3.0 Lecture)   3.0 UNITS
Prerequisite: Completion of the Mission College Placement Assistance Tool prior to registration. Co-Requisite: MAT 903M This lecture course is a co-requisite for MAT 903M. It is part of the MAPS program and provides additional time to help students succeed by participating in enhanced and innovative learning strategies and activities.

MAT 909   Integrated Statistics I (5.0 Lecture)   5.0 UNITS
Prerequisite: completion of Mission College Placement Assistance Tool prior to registration. This is the first of two courses in the Statway sequence. Students study probability, descriptive statistics, linear regression and applications. Current statistical technology packages are used. This sequence is recommended for students with majors that require no mathematics beyond freshman-level statistics. Successful completion of both MAT 909 and MAT 009 is required to satisfy CSU and UC transferability.

MAT 910X   Math Skills for Success in Statistics (2.0 Lecture)   2.0 UNITS
Prerequisite: MAT 000C or MAT 000CM or High School Algebra II, or equivalent. Corequisite: MAT 010 Math Skills for Success in Statistics is for students concurrently enrolled in MAT 010. In this course students will review arithmetic and algebraic topics that underlie statistical procedures and concepts, do hands-on activities that promote a deeper understanding of statistical ideas, and practice reading skills and other study skills that promote success in MAT 010. Concurrent enrollment in MAT 010 is required.

MAT 912X   Math Skills for Success in Calculus for Business (2.0 Lecture)   2.0 UNITS
Prerequisite: Appropriate Placement; or Prerequisite: MAT 000C; or MAT 000CM and MAT 00CMX Math Skills for Success in Calculus for Business is for students concurrently enrolled in MAT 012. In this course students

will review algebraic and basic geometric topics that underlie Calculus for Business concepts and practice reading skills and other study skills that promote success in MAT 012. Concurrent enrollment in MAT 012 is required.

MAT 970   Problem Solving in Mathematics (1.0 Lecture)   1.0 UNIT
This course introduces the student to various problem solving techniques, and develops mathematical and critical thinking skills.