

MATHEMATICS

MATH-050 Fundamental Mathematics 3 cr.

Instructs the student on basic arithmetic concepts, addition, subtraction, multiplication, and division of whole numbers and fractions as well as signed numbers. This course is a PASS/FAIL course; students are allowed only two attempts to pass the course. This course is not available to students who place in Math 095 or higher. Prerequisite: Accuplacer score of 25 or below. Semester offered: Fall, Spring.

MATH-095 Pre-Algebra (3 + 2P) 4 cr.

Instructs the student on the basic operations of arithmetic applied to whole numbers, integers, fractions and decimals. Topics include measurement, conversions, scientific notation, percents, ratio and proportions, basic geometry, formulas, and the introduction of variable expressions and linear equations. (RR option course). Prerequisite: Accuplacer score of 26-65 in Arithmetic and 0-40 in Algebra. Students with an Accuplacer score of 26-35 should also enroll in LRNS 095 as a corequisite. Semester offered: Fall, Spring and Summer.

MATH-096 Introductory Algebra (3 + 2P) 4 cr.

Instructs students in the knowledge of algebra involving linear content, equations, functions, and inequalities in one variable or two variables. This course demonstrates simplifying, and solving methods. Topics such as expressions, radicals, exponents, two and three-dimensional geometric shapes, linear systems and polynomials are also introduced. (RR option course). Prerequisite: Grade of "C" or better in MATH 095 or Accuplacer score of 66-120 in Arithmetic or 41-60 in Algebra. Semester offered: Fall, Spring and Summer.

MATH-105 SPIN: (Special Interest) 1-3 cr.

Course is designed to address a variety of subjects required to meet the needs of lifelong learning students. Not available for transfer nor applicable as an elective.

MATH-113 Applied Mathematics for Vocational Studies 3 cr.

Instructs students in the knowledge of addition, subtraction, multiplication and division of whole numbers, fractions and decimals. Topics also include ratios and proportions, percents, standard and metric measurements and conversions. Basic fundamentals of algebra, operations of rational numbers, algebraic expressions, solving equations, formulas, geometry and trigonometric concepts of sine, cosine, tangent and the Pythagorean Theorem. This course emphasizes application models required in vocational programs. Prerequisite: Grade of "C" or better in MATH 095 or Accuplacer score of 66+ (arithmetic) or 41+ (algebra). Semester offered: Fall and Spring.

MATH-114 Math for Health Careers 3 cr.

This course introduces the computational skills needed to study in health careers programs. Topics include operations on fractions, decimals, percents, as well as the use of formulas, ratio and proportion, and measurement. Students will solve word problems specific to medication orders. Prerequisite: Grade of "C" or better in MATH 095 or Accuplacer score of 66+ (arithmetic) or 41+ (algebra). Semester offered: Fall, Spring and Summer On Demand.

MATH-115 Intermediate Algebra-Applications 4 cr.

Instructs students in the knowledge of algebra involving nonlinear content, expressions, equations, functions, and inequalities. This course demonstrates simplifying, factoring, and solving methods emphasizing polynomial, quadratic, rational, radical, exponential and logarithms. Prerequisite: Grade of "C" or better in MATH 096 or Accuplacer score of 61 – 103 (algebra). Semester offered: Fall, Spring and Summer.

MATH-116 Math for High Tech Careers 3 cr.

Instructs students in the knowledge of mathematics related to the electronics field. Topics include: scientific calculations, conversions, methods of algebra leading to solving and manipulation of formulas, relations, functions including logarithmic and exponential, radicals, fundamentals of trigonometry involving angular and circular functions, vectors and phasors. Prerequisite: Grade of "C" or better in MATH 096 or Accuplacer score of 41-60 (algebra). Semester offered: Fall and Spring.

MATH-121 Mathematics for the Elementary Teacher I 3 cr.

A development of the properties, concepts, and logical reasoning of the arithmetic of whole numbers. Topics include problem solving techniques, set theory, numeration systems, algorithms of arithmetic in base ten and other bases, estimation and mental computation techniques, and number theory. Prerequisite: Grade of "C" or better in MATH 115 or Accuplacer score of 104 - 120 (Algebra). Semester offered: Fall and Spring.

MATH-122 Mathematics for the Elementary Teacher II 3 cr.

A development of the properties, concepts, and logical reasoning of (1) the arithmetic of real numbers, (2) statistics, and (3) probability. Topics include fractions, decimals, ratios, proportions, percent, integers, rational numbers, real numbers, algebra, statistics, and probability. Prerequisite: Grade of "C" or better in MATH 121. Semester offered: Fall and Spring.

MATH-130 Conceptual Mathematics 3 cr.

This course covers a variety of practical mathematical concepts for non-science majors. Topics include set theory, geometry, counting methods, probability, statistics and finance. Critical thinking and problem solving skills are stressed. Prerequisite: Grade of "C" or better in MATH 096 or Accuplacer score of 61 – 103 (algebra). Semester offered: Fall, Spring and Summer.

MATH-180 Trigonometry 3 cr.

Instructs the student in the knowledge of triangles, radian and degree measure, trigonometric functions, trigonometric identities, properties, inverse trigonometric functions, polar coordinates, vectors. Prepares the student to utilize trigonometry in the analysis of calculus. Prerequisite: Grade of "C" or better in MATH 115 or Accuplacer score of 104-120. Semester offered: Fall, Spring and Summer.[NM Common Course Number MATH 1213, Area II: Mathematics Core]

MATH-185 College Algebra 3 cr.

Instructs students in the knowledge of linear, piecewise, quadratic, polynomial, rational, inverse, exponential and logarithmic functions; function topics include finding the average rate of change, analyzing graphs, graphing using transformations, finding roots in the real and complex number systems, and constructing functions to model real-world applications. Other topics include systems of linear equations and inequalities, matrices, linear programming, sequences and series. Prerequisite: Grade of "C" or better in MATH 115 or Accuplacer score of 104-120. Semester offered: Fall, Spring and Summer.[NM Common Course Number MATH 1113, Area II: Mathematics Core]

MATH-187 Applications of Calculus 4 cr.

An introduction to the methods of differential and integral calculus. Polynomial, rational, exponential and logarithmic functions are used in topics such as rates of change, limits, derivatives, continuity, extrema, graphing, antiderivatives, definite integrals and techniques of integration. Applications involving optimization, related rates, growth and decay models and marginality will be studied primarily in context of business related topics. Prerequisite: Grade of "C" or better in MATH 185. Semester offered: Spring.

MATH-188 Calculus I (3 + 2P) 4 cr.

Instructs the student in the methods of differential calculus. Topics include elementary algebraic and transcendental functions, limits, continuity, differentiation and optimization. Other topics include L'hospital's rule, Newton's method, Riemann sums, indefinite and definite integration, and the fundamental theorem of calculus. Mathematical software will be utilized throughout the course to expose students to computer algebra systems. Prerequisite: Grade of "C" or better in MATH 185 and MATH 180. Semester offered: Fall, Spring, and Summer.[NM Common Course Number MATH 1614, Area II: Mathematics Core]

MATH-189 Calculus II (3 + 2P) 4 cr.

A continuation of MATH 188; extending to topics in Techniques of Integration, Numerical Integration, Infinite Series, Power Series, Maclaurin & Taylor Series and Taylor Polynomials. Prerequisite: Grade of "C" or better in MATH 188. Semester offered: Fall, Spring, and Summer. [NM Common Course Number MATH 1623, Area II: Mathematics Core]

MATH-215 Mathematics for Elementary and Middle School Teachers 3 cr.

A development of the properties, concepts, and logical reasoning of geometry. Topics include analysis of geometric shapes, measurement, triangle congruence and similarity, basic Euclidean constructions, coordinate geometry, transformations, and tessellations. Prerequisite: Grade of "C" or better in MATH 121. Semester offered: Fall and Spring

MATH-231 Discrete Mathematics 3 cr.

An introductory course encompassing set theory, logic, induction and recursion, number theory, matrices, combinatorics, graph theory, trees, boolean algebra, and models of computation. Prerequisite: Grade of "C" or better in MATH 188. Semester offered: Fall.

MATH-251 Statistics (3 + 2P) 4 cr.

Instructs the student in the knowledge of an introduction to descriptive and inferential statistics, which includes the following topics: sampling theory, experimental design, probability, probability distributions, confidence intervals, correlation and regression, tests of hypotheses (using the normal, student-t, chi-square, and F-distributions) and ANOVA. Lab time is provided for data analysis using statistical software. Prerequisites: Grade of "C" or better in MATH 115, MATH 130, or higher or Accuplacer score: 104-120. Semester offered: Fall, Spring and Summer. [NM Common Course Number MATH 2113, Area II: Mathematics Core]

MATH-268 Calculus III (3 + 2P) 4 cr.

Instructs the student in the techniques of multivariable calculus. Topics include partial differentiation, linear and quadratic approximations, optimization, multiple integration, vector fields, line and flux integrals, curl, divergence, and the three fundamental theorems. Prerequisite: Grade of "C" or better in MATH 189. Semester offered: Fall and Spring. [NM Common Course Number MATH 2614, Area II: Mathematics Core]

MATH-275 Linear Algebra 3 cr.

An applications approach to introductory linear algebra. Covers systems of linear equations, matrices, linear independence, vector spaces, inner product spaces, linear transformations, eigenvalues, eigenvectors and applications. Prerequisite: Grade of "C" or better in Math 189. Semester offered: On Demand.

MATH-282 Differential Equations 4 cr.

A course which gives an in-depth introduction to ordinary differential equations. Theoretical questions such as existence and uniqueness will be addressed but emphasis will be on concepts and applications. Topics include first order techniques and applications, second order techniques and applications, Laplace Transform methods, Cauchy-Euler equations, infinite series techniques, systems, numerical techniques and qualitative aspects. Prerequisite: Grade of "C" or better in MATH 268. Semester offered: Spring or On Demand. [NM Common Course Number MATH 2814, Area II: Mathematics Core]

MATH-295 SPTO: (Special Topics) 1-4 cr.

Special or specific topic course to meet the needs of students. Topics and credits are announced in the Schedule of Classes. These courses may be used as electives for Associate degree requirements. May be repeated one or more times for additional credit. No more than 6 credits of special topic courses can be used toward a degree.