

techniques and processes. Complex projects are made using all equipment in the shop necessary to complete projects. Prerequisites: MASH-209. Offered: Fall & Spring.

MASH-213 Basic CNC Machining 3 cr.
Fundamentals of Computer Numerically Controlled (CNC) machining are studied. Basic machine set-up, programming and machine nomenclature are covered. Corequisites: MASH-212. Offered: Fall & Spring.

MASH-216 Advanced Single Point Threading 4 cr.
Advanced single point threading covers advanced techniques in single point threading to include, internal, external, double lead, triple lead, left hand threads, and cutting threads on CNC equipment. Prerequisites: MASH-213. Offered: Fall & Spring.

MASH-217 CAD-CAM Machining 3 cr.
Study and application of CAD-CAM systems in the machine shop. Students will learn how to create CNC programs using off line software. Corequisites: MASH-216. Offered: Fall & Spring.

MATHEMATICS

MATH-050 Fundamental Mathematics 3 cr.
Basic addition, subtraction, multiplication, division of whole numbers, fractions and workshops to overcome math and test taking anxiety. S/U grading (RR Option). Students allowed two attempts to complete the course. Offered: All.

MATH-095 Pre-Algebra 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, ratios and proportions, basic geometry, formulas and the introduction of variable expressions and linear equations. (RR option course). Prerequisites: Completion of MATH-050 or appropriate Math Accuplacer score. Offered: All.

MATH-096 Introductory Algebra 4 cr.
Instructs students in the knowledge of algebra involving linear content; equations, functions and inequalities in one variable and two variables. This course demonstrates simplifying and solving methods. Topics such as expressions, equations, functions, exponents, two and three-dimensional geometric shapes, linear systems, polynomials, and factoring are also introduced. Prerequisites: Completion of MATH-095 with a minimum grade of C or appropriate Math Accuplacer score. Offered: All.

MATH-113 Applied Math 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. Prerequisites: Completion of MATH-095 with a minimum grade of C or appropriate Math Accuplacer score. Offered: All.

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. Prerequisites: Completion of MATH-095 or appropriate Math Accuplacer score. Minimum grade C. Offered: All.

MATH-115 Intermediate Algebra-Applications 4 cr.
Instructs students in the knowledge of algebra involving nonlinear content including expressions, equations, functions and inequalities. This course emphasizes simplifying and solving methods for polynomial, quadratic, rational, absolute value, radical, exponential, and logarithmic expressions and equations. Prerequisites: Completion of MATH-096 or appropriate Math Accuplacer score. Minimum Grade C. Offered: All.

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. Prerequisites: Completion of MATH-096 or appropriate Math Accuplacer score. Minimum grade C. Offered: Fall & Spring.

MATH-121 Mathematics for the Elementary Teacher 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. Prerequisites: MATH 115 or higher, minimum grade C. Offered: Fall & Spring.

MATH-122 Math for 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. Prerequisites: Complete MATH-121 with a C or better. Offered: Fall & 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. Prerequisites: Completion of MATH-096 or appropriate Math Accuplacer score. Minimum Grade C. Offered: All.

MATH-160 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. Prerequisites: Completion of MATH-115 or appropriate Math Accuplacer score. Note: MATH-160 was formerly MATH-185. Note: MATH-160 will NOT count as a prerequisite for MATH-188. Offered: All.

MATH-170 Pre-Calculus 4 cr.

An in-depth study of linear, piecewise, quadratic, polynomial, rational, exponential, and logarithmic functions and their graphs. Also includes the fundamental theorem of algebra, systems of equations and inequalities, conic sections, sequences and series, and applications in geometry. A graphing calculator is required. Prerequisites: Completion of MATH-115 or appropriate Math Accuplacer score. Note: Beginning SP 2012 MATH-170 will be a prerequisite for MATH-188. Offered: All.

MATH-180 Trigonometry 3 cr.

Instructs the student in the knowledge of triangles, radian and degree measure, trigonometric functions, trigonometric identities, inverse trigonometric functions, polar coordinates, and vectors. Prepares the student to utilize trigonometry in the analysis of Calculus. Students need both Trigonometry and Pre-Calculus before entering Calculus I. [NM Common Course Number MATH 1213, Area II: Mathematics Core]. Prerequisites: Completion of MATH-115 or appropriate Math Accuplacer score. Minimum grade C. Offered: All.

MATH-185 is now MATH-160 (College Algebra)

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. Prerequisites: Complete MATH-160 (formerly MATH-185) or MATH-170 with a C or better. Offered: Spring.

MATH-188 Calculus I 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. [NM Common Course Number MATH 1614, Area II: Mathematics Core] Prerequisites: Completed MATH-185 (prior to Fall 2011) and MATH-180 with a minimum grade of C. Note: Beginning SP 2012 the prerequisites for MATH-188 will be MATH-170 and MATH-180 with a minimum grade of C. Offered: All.

MATH-189 Calculus II 4 cr.

A continuation of Math 188; extending to topics in Techniques of Integration, Numerical Integration, Applications of Integration, Infinite Series, Power Series, Maclaurin & Taylor Series and Taylor Polynomials. [NM Common Course Number MATH 1623, Area II: Mathematics Core]. Prerequisites: Complete MATH-188 with a minimum grade of C. Offered: All.

MATH-215 Math for Elem & 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. Prerequisites: MATH-121 with a minimum grade of C or better. Offered: Fall & 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. Prerequisites: Complete MATH-188 with a minimum grade of C. Offered: Spring.

MATH-251 Statistics 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. [NM Common Course Number MATH 2113, Area II: Mathematics Core]. Prerequisites: Completion of MATH-115 or appropriate MATH Accuplacer score. Minimum grade C. Offered: All.

MATH-268 Calculus III 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. [NM Common Course Number MATH 2614, Area II: Mathematics Core]. Prerequisites: MATH-189 with a minimum grade of C. Offered: Fall & Spring.

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. Prerequisites: MATH-189 with minimum grade of C. 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. [NM Common Course Number MATH 2814, Area II: Mathematics Core]. Prerequisites: Complete MATH-268 with a minimum grade of C. Offered: Spring.

INDUSTRIAL MECHANICS

MECH-235 Mechanical Drives I 4 cr.

This course teaches the fundamentals of mechanical transmission systems used in industrial, agricultural, and