MATHEMATICS

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MATH 126E Precalculus I Expanded **3 Credits**
Precalculus I Expanded with Co-requisite support: Includes equations, relations, functions, graphing; polynomial, rational, exponential, logarithmic, and circular functions with applications; coordinate geometry of lines and conics; analytic trigonometry; matrices and determinants; and binomial theorem. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed or be enrolled in MATH 26.

MATH 116E Technical Mathematics Expanded **3-5 Credits**
Provides technical mathematical core material so that the student gains practical problem solving experience. May include arithmetic operation, integers, exponents, scientific notation, algebraic expressions, equations, metric system, trigonometry, and logarithms. This course satisfies the general education requirement for occupational/technical AAS degree. Prerequisite:

MATH 120E Fund of College Math Expanded **3 Credits**
Fundamentals of College Mathematics with Corequisite Support: Includes real numbers, consumer mathematics, variation, functions, relations, graphs, geometry, probability, and statistics. Course is broad in scope, emphasizing applications. Fulfills the lower-division mathematics requirement for a Bachelor of Arts Degree. Satisfies mathematics requirement for baccalaureate degrees. Prerequisite: Must have completed or be enrolled in MATH 20.

MATH 20 Learn Support MATH 120/120E **1-3 Credits**
Designed to be taken in the same semester as MATH 120E, this course contains a review of basic mathematics and study skills needed to be successful in college mathematics. Topics may include the real number system, fractions, exponents, simplifying algebraic expressions, solving linear and rational equations, and effective study skills. [S/U] Prerequisite: Must be enrolled in MATH 120E.

MATH 26 Learning Support MATH 126/126E **3 Credits**
This is a support course for MATH 126E and is designed to help students succeed in a college-level precalculus course. Topics may include fractions, linear equations, radical expressions, rational expressions, graphing, systems of linear equations, polynomials, as well as topics from precalculus that require further exploration. [S/U] Prerequisite: Must be enrolled in MATH 126E.

MATH 91 Basic Mathematics **3 Credits**
The fundamental operations of whole numbers, fractions and mixed numbers, decimals, percentages, measurement, and integers. Intended to provide a review of basics needed in later math courses and on the job. Prerequisite:

MATH 95 Elementary Algebra **3 Credits**
A first course in algebra for students who plan to continue in the math sequence. Topics include operations on real numbers, simplifying expressions, solving linear and quadratic equations, polynomials, factoring, radicals, and the concept of graphing. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 91 with a grade of 'C' or higher or have earned a satisfactory score on the placement test, ACT, or SAT.

MATH 96 Intermediate Algebra **3 Credits**
This is a second course in algebra for students who have completed one elementary algebra course. The topics covered include polynomials, rational functions, linear equations and inequalities, absolute value inequalities, exponents and radicals, quadratic equations, relations and functions, systems of equations, and applications. This is a developmental course. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 95 with a grade of 'C' or higher or have earned a satisfactory score on the placement test, ACT or SAT.

MATH 97 Elem & Intermediate Algeb **5 Credits**
A one-semester course equivalent to the combination of MATH 095 and MATH 096. Topics include solving linear equations in one variable, polynomials, integer exponents, factoring, rational expressions and equations, graphing linear equations in two variables, inequalities, systems of linear equations, radicals and rational exponents, and quadratic equations. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 91 with a grade of 'C' or higher or have earned a satisfactory score on the placement test, ACT, or SAT.

MATH 116 Technical Mathematics I **3 Credits**
Provides technical mathematical core material so that the student gains practical problem solving experience. May include arithmetic operation, integers, exponents, scientific notation, algebraic expressions, equations, metric system, trigonometry, and logarithms. This course satisfies the general education requirement for occupational/technical AAS degree. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 95 or MATH 97 with a grade of 'C' or higher or have earned a satisfactory score on the placement test, ACT, or SAT.

MATH 120 Fund of College Math **3 Credits**
Includes set theory, logic, consumer mathematics, measurement, geometry, probability, and statistics. Course is broad in scope, emphasizing applications. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 96 or MATH 97 with a grade of 'C' or higher or have earned a satisfactory score on the placement test, ACT, or SAT or have completed MATH 95 and (ENG 100 or ENG 101) with a grade of 'C' or higher or have completed MATH 20.

MATH 122 Num Concept for Elem Tchr **3 Credits**
A course for students preparing for elementary school teaching or those who already hold teaching certificates. Topics include the real number system and its subsystems, algorithms, primes and divisibility, algebraic thinking, and a variety of applications. The course presumes mathematical knowledge of the material and goes more in depth giving backgrounds for the real number system and preparation of students for teaching the material. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 120, MATH 120E or above, including STAT 152, with a grade of 'C' or higher.

MATH 123 Stat/Geomtl Cpt Elem Tchr **3 Credits**
A course for students preparing for elementary school teaching or for those who already hold teaching certificates. Topics include probability, statistics, geometry, constructions, similar figures, trigonometric ratios, areas and volumes, motion geometry, and a variety of applications. Backgrounds for the

concepts and preparation of students for teaching the material. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 120, MATH 120E or above, including STAT 152, with a grade of 'C' or higher.

MATH 126 Precalculus I **3 Credits**
A third course in algebra that stresses polynomial, quadratic, rational, exponential, and logarithmic functions, including their graphs and applications; complex numbers; systems of equations; and basic operations with matrices and determinants, including Cramer's rule. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 96 or MATH 97 with a grade of 'C' or higher or have earned a satisfactory score on the placement test, ACT, or SAT or have completed MATH 26 with a grade of 'P'.

MATH 127 Precalculus II **3 Credits**
Topics include circular functions, their graphs, and applications; trigonometric identities and equations; conic sections; vectors; sequences and mathematical induction. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 126 or MATH 126E with a grade of 'C' or higher or have earned a satisfactory score on the placement test, ACT, or SAT.

MATH 128 Precalculus and Trigonometry **5 Credits**
Topics Include equations, relations, functions, graphing; polynomial, rational, exponential, logarithmic, and circular functions with applications; coordinate geometry of lines and conics; analytic trigonometry; matrices and determinants; and binomial theorem. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 96 or MATH 97 with a grade of 'C' or higher or have earned a satisfactory score on the placement test, ACT, or SAT.

MATH 181 Calculus I **4 Credits**
The fundamental concepts of analytic geometry and calculus functions, graphs, limits, derivatives, integrals, and certain applications. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed [(MATH 126 or MATH 126E) AND MATH 127] or MATH 128 with a grade of 'C' or better or have earned a satisfactory score on the placement test, ACT, or SAT.

MATH 182 Calculus II **4 Credits**
A continuation of MATH 181. The course covers transcendental functions, methods of integration, conic sections, infinite sequences and series, and first-order differential equations. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 181 with a grade of 'C' or higher.

MATH 251 Discrete Mathematics I **3 Credits**
Topics include set operations, Cartesian product relations and functions, equivalence relation, graphs and digraphs, propositional calculus, truth tables, mathematical induction, and elementary combinatorics. Applications are made to probability. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 182 with a grade of 'C' or higher.

MATH 283 Calculus III **4 Credits**
A continuation of MATH 182. Topics include vectors, differentiation and integration of vector-valued functions, the calculus of functions of several variables, multiple integrals and applications, line and surface integrals, Green's Theorem, Stokes' Theorem, and the Divergence Theorem. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 182 with a grade of 'C' or higher.

MATH 285 Differential Equations **3 Credits**
Theory and solving techniques for general ordinary differential equations, first order and second order linear equations, boundary value problems, power series solutions, Laplace transforms, and system of first order equations. Emphasis on real world phenomena. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 283 with a grade of 'C' or higher.

MATH 310 Intro to Analysis I **3 Credits**
A re-examination of the calculus of functions of one-variable: real numbers, convergence, continuity, differentiation, and integration. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 283 with a grade of 'C' or higher.

MATH 314 History of Mathematics **3 Credits**
Evolution of mathematics from ancient numeral systems to twentieth-century mathematics. The effects of culture on mathematics and the impact of mathematics on cultures also considered. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 330 with a grade of 'C' or higher.

MATH 330 Linear Algebra **3 Credits**
An introduction to linear algebra, including matrices and linear transformations, eigenvalues, and eigenvectors. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 182 with a grade of 'C' or higher.

MATH 331 Groups/Rings/Fields **3 Credits**
Elementary structure of groups, rings, and fields, including homeomorphisms, normal subgroups, and ideals. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 330 with a grade of 'C' or higher.

MATH 333 Number Theory for Sec Ed **3 Credits**
Examines in detail the structure of number systems and polynomials over these number systems, and teaches the careful art of mathematical reasoning. The course is designed for those who will make the transition from techniques courses to conceptual mathematics. Designed for prospective high school teachers but is open to other students. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 182 with a grade of 'C' or higher.

MATH 352 Probability & Statistics **3 Credits**
Probability experiments; sample spaces, discrete and continuous random variables and distributions; mathematical expectation, central limit theorem; hypothesis testing, and linear regression. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 182 and STAT 152 with a grade of 'C' or higher.

MATH 389 Special Topics in Mathematics **3 Credits**

Covers specialized topics in Mathematics. Course may be repeated up to six credits if topics are different. Prerequisite: Must have completed 40 or more credits and have completed (ENG 102 or ENG 333) and (MATH 120 or MATH 120E or MATH 124 or MATH 126 or MATH 126E or higher or STAT 152).

MATH 475 Euclidean/NonEuclidean Geomtry **3 Credits**

Axiom systems, models, independence, consistency; incidence, distance betweenness, congruence, convexity, inequalities, parallels, perpendiculars, the Klein model; Saccheri quadrilaterals, limit triangles, and the non-Euclidean geometry of Bolyai-Lobachevsky. It is recommended that students have completed prerequisites within two years of enrolling in this course. Prerequisite: Must have completed MATH 333 with a grade of 'C' or higher.