MATHEMATICS (MATH)

MATH 058 Pre-Algebra I (2 Credit Hours)
Type of credit: Remedial Education
Lecture hours: 2
Repeatable: 4 times
Prerequisite: Academic placement measures.
This course reviews basic operations with whole numbers, fractions, decimals, place values, rounding and estimation, conversion of fractions to decimals, prime factorization, exponential notation, greatest common factors, and least common multiples. Problem solving will be related to each topic. Techniques to reduce math and test anxiety, time management, and math test taking skills will also be emphasized. A maximum of eight (8) credit hours may be earned in this course.

MATH 059 Pre-Algebra II (2 Credit Hours)
Type of credit: Remedial Education
Lecture hours: 2
Repeatable: 4 times
Prerequisite: MATH 058 with minimum grade of C or Academic placement measures.
This course is a review of basic arithmetic operations involving ratios and proportions, percent notation, basic geometric formulas, real numbers, and an introduction to algebraic operations and solving. Problem solving will be related to each topic. A maximum of eight (8) credit hours may be earned in this course.

MATH 062 Plane Geometry (4 Credit Hours)
Type of credit: Remedial Education
Lecture hours: 4
Repeatable: 4 times
This course includes the study of angles, triangles, polygons, quadrilaterals, circles, transformations, parallel and perpendicular lines, computation of areas, and geometric proofs. This course is equivalent to a one-year high school geometry course.

MATH 066 Basic Algebra I (2 Credit Hours)
Type of credit: Remedial Education
Lecture hours: 2
Repeatable: 4 times
Prerequisite: MATH 059 with minimum grade of C or Academic placement measures.
This course includes operations with real numbers, solving linear equations and systems, and applications and graphing of linear equations. Problem solving will be related to each topic. Techniques to reduce math and test anxiety, time management, and math test taking skills will also be emphasized. A maximum of eight (8) credit hours may be earned in this course.

MATH 067 Basic Algebra II (2 Credit Hours)
Type of credit: Remedial Education
Lecture hours: 2
Repeatable: 4 times
Prerequisite: MATH 066 with minimum grade of C or Academic placement measures.
This course includes integral exponents, operations with polynomials, factoring, rational expressions, linear equations, graphing of lines, radical expressions, and solving quadratic equations. Problem solving will be related to each topic. Techniques to reduce math and test anxiety, time management, and math test taking skills will also be emphasized. A maximum of eight (8) credit hours may be earned in this course.

MATH 082 Supplementary Appl Prac Math (2 Credit Hours)
Type of credit: Remedial Education
Lecture hours: 2
Prerequisite: MATH 059 with minimum grade of C or Academic placement measures.
This course is to be taken concurrently with Math 132 Applied Practical Math. Math skills which are necessary for a student to successfully complete Applied Practical Math will be covered. Emphasis will be on operations with real numbers, inequalities and equations, evaluating formulas and strategies for academic success.

MATH 084 Supplementary Statistics (2 Credit Hours)
Type of credit: Remedial Education
Lecture hours: 2
Prerequisite: MATH 067 with minimum grade of C or Academic placement measures.
This course is to be taken concurrently with MATH 134 Statistics.
Math skills which are necessary for a student to successfully complete Statistics will be covered. Emphasis will be on operations with real numbers, inequalities and equations, graphing, and strategies for academic success.

MATH 090 Intermediate Algebra I (2 Credit Hours)
Type of credit: Remedial Education
Lecture hours: 2
Repeatable: 4 times
Prerequisite: MATH 067 with minimum grade of C or Academic placement measures.
This course includes operations with real numbers and algebraic expressions, equations, inequalities, absolute value equations and inequalities, graphs of equations and functions, systems of equations and inequalities and problem solving. Techniques to reduce math and test anxiety, time management, and math test taking skills will also be emphasized. Upon completion, students should be able to apply algebraic concepts in problem solving using appropriate technology. A maximum of eight (8) credit hours may be earned in this course.

MATH 091 Intermediate Algebra II (2 Credit Hours)
Type of credit: Remedial Education
Lecture hours: 2
Repeatable: 8 times
Prerequisite: MATH 090 with minimum grade of C or Academic placement measures.
This course includes operations with polynomials and polynomial functions, rational expressions, rational exponents, radicals, complex numbers, quadratic equations, and functions. Techniques to reduce math and test anxiety, time management, and math test taking skills will also be emphasized. Upon completion, students should be able to apply algebraic concepts in problem solving using appropriate technology. A maximum of eight (8) credit hours may be earned in this course.

MATH 096 Supplementary College Algebra (2 Credit Hours)
Type of credit: Remedial Education
Lecture hours: 2
Prerequisite: MATH 067 with minimum grade of C and MATH 062 with minimum grade of C or Academic placement measures.
This course is to be taken concurrently with MATH 166 College Algebra.
Math skills which are necessary for a student to successfully complete College Algebra will be covered. Emphasis will be on operations with algebraic expressions, solving algebraic equations, and using algebraic concepts in problem solving.

MATH 111 Technical Math (3 Credit Hours)
Type of credit: Vocational Skills
Lecture hours: 3
Prerequisite: MATH 067 with minimum grade of C or Academic placement measures.
Includes a study of numbers, measurements, algebra, geometry and trigonometry as it relates to mechanical devices and equipment. This is a specially designed course for students in fields such as CNC Machining, Welding, and Mechanics.

MATH 132 Applied Practical Math (4 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 4
Prerequisite: MATH 067 with minimum grade of C or MATH 082 as Corequisite or Academic placement measures.
Applied Practical Math is designed primarily as a terminal course in mathematics for students who do not plan to pursue a science curriculum. The course satisfies the General Educational Math requirement. The topics selected for the course include counting techniques, probability and statistics, and personal finance. The computer and graphing calculator will be used as a problem-solving tool. IAI Code: M1 904. Typical offering schedule: fall, spring

MATH 134 Statistics (4 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 4
Prerequisite: MATH 091 with minimum grade of C or MATH 084 as Corequisite or Academic placement measures.
Provides the background necessary for the student to understand the wide range of statistical concepts encountered and of use in daily life. Topics covered include: data collection processes, organizing and displaying data, descriptive statistics, probability theory and distributions, confidence intervals, hypothesis testing, linear regression, and correlation. IAI Code: M1 902. Typical offering schedule: fall, spring, summer

MATH 140 Math/Elem Teachers I (4 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 4
Prerequisite: MATH 091 with minimum grade of C or Academic placement measures. And MATH 062 with minimum grade of C or Academic placement measures.
Provides the basic theory that underlies the mathematical topics in elementary math curricula and emphasizes mathematical reasoning and problem solving. Topics covered include problem solving, set theory, number systems, number theory, operations in the various number systems, ratios, percents, and variation. Typical offering schedule: fall

MATH 141 Math/Elementary Teachers II (3 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 3
Prerequisite: MATH 140 with minimum grade of C.
The second semester of the two-semester sequence for prospective elementary teachers. Topics covered include an introduction to probability and statistics, geometry, measurement of plane and space figures, constructions, congruence and similarity mappings, and measurement including perimeter, area, volume, and surface area. IAI Code: M1 903. Typical offering schedule: spring

MATH 166 College Algebra (4 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 4
Prerequisite: MATH 091 with minimum grade of C or MATH 096 as Corequisite or Academic placement measures. And MATH 062 with minimum grade of C or Academic placement measures.
This course reviews the fundamental operations of algebra followed by a study of equations and applications involving quadratics, complex numbers, relations, functions and transformations, matrices, determinants, exponential and logarithmic functions. Applications involving Linear Programming will also be explored. Typical offering schedule: fall, spring, summer

MATH 167 Plane Trigonometry (3 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 3
Prerequisite: MATH 166 with minimum grade of C or Academic placement measures.
Plane Trigonometry includes the study of trigonometric functions, right triangle applications, functions of multiple angles, trigonometric equations and identities, radian measure, inverse functions, the oblique triangle, graphs of trigonometric functions, and the trigonometric form of the complex number. Typical offering schedule: fall, spring

MATH 170 Precalculus (5 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 5
Prerequisite: MATH 091 with minimum grade of C or Academic placement measures. And MATH 062 with minimum grade of C or Academic placement measures.
This is an accelerated course designed for Engineering majors or Chemistry majors who need to attain quickly the background necessary to enroll in the Calculus sequence. This course includes a study of equations involving quadratics, complex numbers, relations, functions and their transformations, rational functions, exponential and logarithmic functions and series and sequences. Also included is the study of trigonometric functions, functions of multiple angles, trigonometric equations and identities, radian measure, inverse functions, and graphs. Typical offering schedule: as needed

MATH 171 Finite Math (4 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 4
Prerequisite: MATH 166 or MATH 170 with minimum grade of C or Academic placement measures.
Introduces finite mathematics for the student in business or social science. Topics covered include: properties of real numbers, functions, their graphs, systems of equations, basic matrix theory, matrix operations, determinants, Gaussian elimination, linear programming, tableaux transformation, simplex (max-min) algorithms, counting methods, probability and Bayes' theorem. Business and social science applications are emphasized. IAI Code: M1 906. Typical offering schedule: fall

MATH 172 Calculus for Bus/Soc Science (4 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 4
Prerequisite: MATH 166 or MATH 170 with minimum grade of C or Academic placement measures.
Introduces calculus to the student in business or social science. Topics covered include: functions, limits, differential calculus, differentiation rules, continuity, logarithmic and exponential differentiation, maxima and minima of functions, integral calculus, techniques of integration including substitution and integration by parts, definite integrals, multivariable functions, and partial derivatives. Business and Social Science applications are emphasized. IAI Code: M1 900-B. Typical offering schedule: spring

MATH 250 Analytic Geometry/Calculus I (5 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 5
Prerequisite: MATH 166 and 167, or MATH 170 with minimum grade of C or Academic placement measures.
Analytic Geometry and Calculus I is the first of a three- semester sequence giving an integrated treatment of analytic geometry, and differential and integral calculus. The first semester includes (but is not limited to) conic sections, limits of functions, the theory of limits, continuity, the definition of derivative, rate of change, techniques of differentiation, derivatives of polynomial, rational, and trigonometric functions, higher order derivatives, implicit differentiation, the differential, applications of differentiation, Newton's method, Rolle's Theorem and mean value theorem, anti-derivatives, the definite integral, and the Fundamental Theorem of Calculus. IAI Codes: M1 900-1 and MTH 901. Typical offering schedule: fall, spring

MATH 255 Analytic Geometry/Calculus II (5 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 5
Prerequisite: MATH 250 with minimum grade of C or Academic placement measures.
Analytic Geometry and Calculus II is the second of a three semester sequence giving an integrated treatment of analytic geometry, and differential and integral calculus. The second semester includes (but is not limited to) applications of the integral involving area, volume, arc length, and work, the calculus of exponential, logarithmic, trigonometric, inverse trigonometric, and hyperbolic functions, logarithmic differentiation, indeterminate forms and L'Hopital's rule, techniques of integration including integration by parts, trigonometric substitution, partial fractions, numerical methods, and improper integrals, sequences and series, convergence tests and Taylor series. IAI Codes: M1 900-2 and MTH 902. Typical offering schedule: fall, spring

MATH 265 Differential Equations (3 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 3
Prerequisite: MATH 255 with minimum grade of C.
This course is an introduction to methods of solving differential equations of the first order as well as applications of first order differential equations to physical problems. The methods for first-order differential equations include numerical techniques, separation of variables, substitution methods, exact equation techniques, and identification of integrating factors. Certain types of higher order equations will be studied. Linear independence and the Wronskian of higher order equations will be covered. Methods for solving homogeneous and nonhomogeneous equations of higher order include the method of undetermined coefficients, reduction of order, and variation of parameters. Laplace transforms and power series methods will also be studied, as well as some applications of second order equations. IAI Code: MTH 912. Typical offering schedule: fall

MATH 269 Analytic Geometry/Calculus III (4 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 4
Prerequisite: MATH 255 with minimum grade of C.
Analytic Geometry and Calculus III is the third of a three semester sequence giving an integrated treatment of analytic geometry, and differential and integral calculus. The third semester includes (but is not limited to) parametric equations, polar coordinates, and equations, vectors in 2 and 3 dimensions, vector operations, lines and planes in space, quadric surfaces, spherical curvature, functions of more than one variable, limits and continuity, partial derivatives, the differential, directional derivatives, gradients, extrema of functions, double and triple integrals in rectangular, polar, cylindrical, and spherical coordinates, applications of double and triple integrals. Topics in vector calculus, including line integrals, Green's Theorem, curl and divergence, surface integrals, flux, and Stokes' Theorem will be covered. IAI Codes: M1 900-3 and MTH 903. Typical offering schedule: spring

MATH 270 Linear Algebra (3 Credit Hours)
Type of credit: Baccalaureate/Transfer
Lecture hours: 3
Prerequisite: MATH 255 with minimum grade of C or Academic placement measures.
Introduces the student to the study of linear systems, algebra and geometry of vectors, matrices, vector spaces and subspaces, basis and dimension, determinants, eigenvalues and eigenvectors, linear transformations, range and kernel of a linear transformation, quadratic forms, orthogonality and inner product spaces. An introduction to proofs, including student-written proofs, will be presented throughout the course. IAI Code: MTH 911. Typical offering schedule: as needed