MATHEMATICS (MTH)

Course Descriptions

MTH 020. Pre Algebra. 3 Credit Hours.
This course is for students who need to review the basic fundamentals of mathematics. Topics include operations on whole numbers, fractions, decimals, percents, signed numbers, word problem applications and an introduction to algebra. (Credit is only allowed for either MTH 020 or MTH 001.)

MTH 050. Mathematical Literacy. 3 Credit Hours.
Mathematical Literacy will provide students with the skills and conceptual understanding to succeed in college-level mathematics courses. The course will help students develop conceptual understanding and acquire multiple strategies for solving application problems. It contains such topics as numeracy, proportional reasoning, algebraic reasoning, probability, sets, interpreting tables and graphs, and graphs of linear equations.

MTH 056. Principles of Quantitative Reasoning. 2 Credit Hours.
Principles of Quantitative Reasoning is a co-requisite course for MTH 161, Quantitative Reasoning, for students with Learning Support Mathematics requirements. This course is designed to support the content covered in MTH 161 by addressing deficiencies in skills required for the topics in MTH 161.
Prerequisites: Reading Proficiency
Corequisites: MTH 161

MTH 058. Principles of Introductory Statistics. 2 Credit Hours.
Principles of Introductory Statistics is a co-requisite course for MTH 180, Introductory Statistics, for students with Learning Support Mathematics requirements. This course is designed to support the content covered in MTH 180 by addressing deficiencies in skills required for the topics in MTH 180.
Prerequisites: Reading Proficiency
Corequisites: MTH 180

MTH 070. Principles of Precalculus Algebra. 2 Credit Hours.
Principles of Precalculus Algebra is a co-requisite course for MTH 160, Precalculus Algebra. This course is designed to support the content covered in MTH 160 by addressing prerequisite skills required for the topics in MTH 160.
Prerequisites: Satisfactory score on placement test and Reading Proficiency
Corequisites: MTH 160

MTH 108. Elementary Applied Mathematics. 3 Credit Hours.
This course will include a review of fractions, decimals and percents. Topics may include ratios, proportions, measurements, metrics, powers, roots, simple equations, estimation, graphs, and applications relevant to many Associate in Applied Science programs. All prerequisite courses must have been completed within the last 3 years.
Prerequisites: Reading Proficiency

MTH 140. Intermediate Algebra. 3 Credit Hours.
Intermediate Algebra prepares students for the Precalculus Algebra course. Operations on rational expressions, operations on radicals, solving quadratic equations, and the rectangular coordinate system are among the topics covered. All prerequisite courses or placement measures must have been completed within the last 3 years. (Credit will be granted for only one of the following: MTH 140 or MTH 140S.)
Prerequisites: Satisfactory placement and Reading Proficiency

MTH 140S. Intermediate Algebra with Support. 5 Credit Hours.
Intermediate Algebra with Support covers the algebra topics needed for students to transition from beginning algebra into a Precalculus course. Operations on rational expressions, operations on radicals, solving quadratic equations, and the rectangular coordinate system are among the topics covered. (Credit will be granted for only one of the following: MTH 140S or MTH 140. Only 3 credits from this course will apply toward a degree or certificate.)
Prerequisites: Reading Proficiency

MTH 160. Precalculus Algebra (MOTR MATH 130). 3 Credit Hours.
Precalculus Algebra is a college algebra course and one of the prerequisites on the STEM pathway leading to Calculus. It includes the following topics: theory of equations; functions and graphs including parabolas, polynomials, rationals, exponentials, and logarithms; systems of equations and inequalities; and matrices. Applications will be primarily from science and business. (Credit is allowed for only one of the following courses: MTH 160, MTH 160A, MTH 160B, MTH 160C, MTH 160S, or MTH 185.)
Prerequisites: MTH 140 (or MTH 140S) with a grade of "C" or better or satisfactory score on placement test, and Reading Proficiency

MTH 160S. Precalculus Algebra with Support (MOTR MATH 130). 5 Credit Hours.
Precalculus Algebra with Support is a college algebra course and one of the prerequisites on the STEM pathway leading to Calculus. It covers all of the content from MTH 160 in addition to some prerequisite topics. The following topics are covered: factoring; rational expressions; radicals; theory of equations; functions and graphs including parabolas, polynomials, rationals, exponentials, and logarithms; systems of equations and inequalities; and matrices. Applications will be primarily from science and business. (Credit is allowed for only one of the following courses: MTH 160S, MTH 160, MTH 160A, MTH 160B, MTH 160C, or MTH 185.)
Prerequisites: Satisfactory score on placement test and Reading Proficiency

MTH 161. Quantitative Reasoning (MOTR MATH 120). 3 Credit Hours.
Quantitative Reasoning provides a comprehensive overview of the quantitative skills required to navigate the mathematical demands of modern life and to prepare students for a deeper understanding of information presented in mathematical terms. Emphasis is placed on improving students' ability to draw conclusions, make decisions, and communicate effectively in quantitative-based situations that depend upon multiple factors. (Credit will be granted for only one of the following MTH 161 or MTH 161S.)
Prerequisites: Satisfactory score on placement test and Reading Proficiency

MTH 161S. Quantitative Reasoning with Support (MOTR MATH 120). 5 Credit Hours.
Quantitative Reasoning with Support provides a comprehensive overview of the quantitative skills required to navigate the mathematical demands of modern life and to prepare students for a deeper understanding of information presented in mathematical terms. Emphasis is placed on improving students' ability to draw conclusions, make decisions, and communicate effectively in quantitative-based situations that depend upon multiple factors. (Credit will be granted for only one of the following MTH 161S or MTH 161. Only 3 credits from this course will apply toward a degree.)
Prerequisites: Reading Proficiency

MTH 165. Structures of Mathematical Systems I. 3 Credit Hours.
Introduction to problem solving and logic. A study of the development and construction of mathematical systems, including whole numbers, integers, and rational numbers. Suggested for students planning to transfer into early childhood education, elementary education, or special education programs. (Credit is only allowed for either MTH 165 or MTH 150.) All prerequisite courses must have been completed within the last 3 years.
Prerequisites: MTH 160, MTH 160A, MTH 160B, MTH 160C, or MTH 160S with a grade of "C" or better or satisfactory score on placement test and Reading Proficiency

MTH 166. Structures of Mathematical Systems II. 3 Credit Hours.
Continuation of MTH 165. Includes an intuitive study of elementary geometry, the deductive theory of geometry, graphing, probability and statistics, with applications in the area of elementary education. Suggested for students planning to transfer into early childhood, elementary education, or special education programs. (Credit is only allowed for either MTH 166 or MTH 151.) All prerequisite courses must have been completed within the last 3 years.
Prerequisites: MTH 165 with a grade of "C" or better and Reading Proficiency

MTH 170. Precalculus Trigonometry. 3 Credit Hours.
Precalculus Trigonometry is a trigonometry course and one of the prerequisites on the STEM pathway leading to calculus. It uses an analytic approach to the definitions and graphs of the functions of an angle. It includes formulas and identities, trigonometric functions, inverse functions, and radian measure. Note: Credit will not be granted for both MTH 170 and MTH 185. All prerequisite courses must have been completed within the last 3 years.
Prerequisites: MTH 160 or MTH 160S with grade of "C" or better or satisfactory score on placement test, and Reading Proficiency

MTH 177. Finite Mathematics. 4 Credit Hours.
Finite Mathematics is the study of the mathematics of finance, matrices, linear programming, and probability, as well as the use of these concepts to model several types of applications. Prerequisite courses must have been completed within the last three years.
Prerequisites: MTH 160, MTH 160A, MTH 160B, MTH 160C, or MTH 160S with grade of "C" or better and Reading Proficiency

MTH 180. Introductory Statistics (MOTR MATH 110). 3 Credit Hours.
Introductory Statistics introduces the student to the elementary mathematics of descriptive statistics, probability, and statistical inference. Topics include methods of data collection, organization, and representation, measures of center and variation, elementary probability theory, probability distributions, the central limit theorem, confidence intervals, hypothesis testing, correlation, and regression analysis. (Credit will only be granted for MTH 180 or MTH 180S.)
Prerequisites: Satisfactory scores on placement test, and Reading Proficiency

MTH 180S. Introductory Statistics with Support (MOTR MATH 110). 5 Credit Hours.
Introductory Statistics with Support introduces the student to the elementary mathematics of descriptive statistics, probability, and statistical inference. Topics include methods of data collection, organization, and representation, measures of center and variation, elementary probability theory, probability distributions, the central limit theorem, confidence intervals, hypothesis testing, correlation, and regression analysis. (Credit will be granted for only one of the following MTH 180S or MTH 180. Only 3 credits from this course will apply toward a degree.)
Prerequisites: Reading Proficiency

MTH 185. Precalculus (MOTR MATH 150). 5 Credit Hours.
Precalculus is one of the prerequisites on the STEM pathway leading to calculus. This course is a unified study of college algebra and trigonometry. Emphasis is placed on the development of algebraic and trigonometric concepts. The topics include: graphing algebraic, exponential, logarithmic, and trigonometric functions; solving algebraic and trigonometric equations; solving systems of equations; and verifying trigonometric identities. Note: Students will be granted credit for either MTH 185, or MTH 160 (or MTH 160S) and MTH 170.
Prerequisites: MTH 140 (or MTH 140S) with a grade of "C" or better or satisfactory score on placement test, and Reading Proficiency

MTH 186. Survey of Calculus. 4 Credit Hours.
Topics included are limits and continuity of functions of a single variable; derivatives and antiderivatives of algebraic, exponential, and logarithmic functions; and business oriented applications. All prerequisite courses must have been completed within the last 3 years.
Prerequisites: MTH 160 or MTH 160S with grade of "C" or better and Reading Proficiency

MTH 210. Analytic Geometry and Calculus I. 5 Credit Hours.
This course is the first part of a three semester sequence of Calculus. Topics included are limits and continuity of functions of a single variable, derivatives and antiderivatives of algebraic functions and trigonometric functions, and applications. All prerequisite courses must have been completed within the last 3 years.
Prerequisites: MTH 185 or (MTH 160 or MTH 160S and MTH 170) with grades of "C" or better or satisfactory score on placement test and Reading Proficiency

MTH 212. Discrete Mathematics. 3 Credit Hours.
Students will learn topics in discrete mathematics that are particularly relevant to computer science. Topics include logic, elementary number theory, modular arithmetic, methods of proof, sets, probability and combinatorics, recurrence relations, algorithmic efficiency, elementary graph theory, and trees. All prerequisite courses must have been completed within the last 3 years.
Prerequisites: MTH 210 or equivalent with a grade of "C" or better and Reading Proficiency

MTH 215. Linear Algebra. 3 Credit Hours.
This course covers systems of linear equations, properties of matrices and determinants, vector spaces, linear transformations, inner products, and eigenvalues, as well as selected applications. All prerequisite courses must have been completed within the last 3 years.
Prerequisites: MTH 210 with a grade of "C" or better and Reading Proficiency

MTH 220. Analytic Geometry and Calculus II. 5 Credit Hours.
This course is the second part of a three sequence of Calculus. Differentiation and integration of transcendental functions, techniques of integration, improper integrals, parametric equations, polar coordinates, and infinite and power series are among the topics covered. All prerequisite courses must have been completed within the last 3 years.
Prerequisites: MTH 210 with a grade of "C" or better and Reading Proficiency

MTH 230. Analytic Geometry and Calculus III. 5 Credit Hours.
This course is the third part of a three semester sequence of Calculus. Topics covered include solid analytic geometry, vectors in two and three dimensions, differential calculus of multivariate functions, partial derivatives, directional derivatives, gradients, multiple integration, and an introduction to the calculus of vector fields. All prerequisite courses must have been completed within the last 3 years.
Prerequisites: MTH 220 with a grade of "C" or better and Reading Proficiency

MTH 240. Differential Equations. 3 Credit Hours.
This course introduces methods of solving ordinary differential equations. Topics included are first order differential equations, higher order differential equations, LaPlace transform methods, systems of differential equations, and applications. All prerequisite courses must have been completed within the last 3 years.
Prerequisites: MTH 230 with a grade of "C" or better and Reading Proficiency