

MATHEMATICS (MTHM)

MTHM 033, INTRODUCTION TO TECHNICAL MATHEMATICS 3 (3)

This course is intended for the student in an apprenticeship program needing an introduction to technical mathematics in preparation for college-level technical mathematics. The topics studies include units of measure, approximate numbers, equations, inequalities, systems of equations, factoring, rational expressions, exponents, and radicals.

Course Entry Requirement(s): Course placement policy: Grade of C or higher in MTHM 041 or satisfactory placement assessment in mathematics

Typically Offered: Not offered this year

MTHM 057, QUANTITATIVE REASONING CO-REQUISITE 2 (2)

This corequisite course provides learning support for students enrolled in MTHM 158 and will focus on building the skills needed for success in MTHM 158. Topics will correspond to topics being covered in MTHM 158 including percentages, unit conversions, linear equations, exponents, functions and radicals. Students must be enrolled in MTHM 158 while enrolled in MTHM 057.

Course Entry Requirement(s): Prerequisite: Satisfactory placement assessment score in mathematics; Corequisite: MTHM 158

Typically Offered: Summer, Fall and Spring Semesters

MTHM 068, STATISTICS CO-REQUISITE 2 (2)

This corequisite course provides learning support for students enrolled in MTHM 168 and will focus on building the skills needed for success in MTHM 168. Topics will correspond to topics being covered in MTHM 168 including order of operations, proportions and percentages, numerical rounding, scientific notation, basic understanding of probability, equation of a line and technology use. Students must be enrolled in MTHM 168 while enrolled in MTHM 068.

Course Entry Requirement(s): Course Placement Policy: Satisfactory placement assessment score in mathematics; Corequisite: MTHM 168

Typically Offered: Summer, Fall and Spring Semesters

MTHM 072, COLLEGE ALGEBRA CO-REQUISITE 2 (2)

This corequisite course provides learning support for students enrolled in MTHM 171 and will focus on building the skills needed for success in MTHM 171. Topics will correspond to topics being covered in MTHM 171 including interval notation, functions, graphing, complex numbers, logarithms, and using a graphing calculator. Students must be enrolled in MTHM 171 while enrolled in MTHM 072.

Course Entry Requirement(s): Corequisite: MTHM 171

Typically Offered: Summer, Fall and Spring Semesters

MTHM 155, TECHNICAL MATHEMATICS I 4 (4)

This course is designed to strengthen students' mathematical abilities that are needed in other disciplines. Emphasis will be on the application of skills to technical problems. Topics discussed in this course include measurement (units, rates, conversions, dimensional analysis, and scientific and engineering notation), algebra (equations and formulas, modeling, functions and graphs, complex numbers, and systems of equations), geometry (2 and 3 dimensional figures, angles, and the Pythagorean Theorem), and basic trigonometry (right-angle trigonometry, Law of Sines, Law of Cosines, inverse trigonometric functions, sine and cosine graphs and vectors). Mathematics Core Course. (OT 36)

General Education: GEO1, GEO2, GEO3, GEO7

Course Entry Requirement(s): Course Placement Policy: Satisfactory placement assessment in mathematics or divisional approval.

Typically Offered: Fall and Spring Semesters

MTHM 156, TECHNICAL MATHEMATICS II 4 (4)

This course is a continuation of Technical Mathematics I (MTHM 155).

This course is designed to strengthen students' mathematical abilities that are needed in other disciplines. Emphasis will be on the application of skills to technical problems. Topics discussed in this course include basic functions and equations (polynomial, rational, exponential and logarithmic, roots and radical, and trigonometric), trigonometric identities, rates of change, tangent lines and linearization, function composition, inverse functions, transformations, and parametric and Cartesian representations of circles, ellipses, and lines. Graphing calculator required. Mathematics Core Course. (OT 36)

General Education: GEO2, GEO7

Course Entry Requirement(s): Prerequisite: MTHM 155

Typically Offered: Summer, Fall and Spring Semesters

MTHM 158, QUANTITATIVE REASONING 3 (3)

This course is designed for students in majors that do not require College Algebra, Precalculus, or Calculus. It focuses on using real-world applications to build quantitative reasoning and problem-solving skills. Topics include estimation, proportional reasoning, percents, analysis of growth, linear and exponential change, mathematics of finance, statistics, and probability. Mathematics core course. (OT 36)

General Education: GEO2, GEO7

Course Entry Requirement(s): Course placement policy: Satisfactory placement assessment score in mathematics or concurrent enrollment in MTHM 057.

Typically Offered: Summer, Fall and Spring Semesters

MTHM 163, MATHEMATICS FOR ELEMENTARY TEACHERS I 4 (4)

This course focuses on foundational concepts of number theory, arithmetic, and algebra that underlie the elementary school mathematics curriculum. Manipulatives will be used by the student to explore models for numeration systems and mathematical operations. An emphasis on problem-solving will be present throughout the course. Mathematics core course. (OT36)

General Education: GEO1, GEO2, GEO7

Course Entry Requirement(s): Course placement policy: Satisfactory placement assessment in mathematics or division approval

Typically Offered: Summer, Fall and Spring Semesters

MTHM 164, MATHEMATICS FOR ELEMENTARY TEACHERS II 4 (4)

This course is a continuation of the concepts and ideas basic to elementary school mathematics with particular emphasis on the development of geometry. Topics include: an introduction of probability and statistics; functions; congruence and similarity of triangles; properties of polygons; perimeter, area, surface area, and volume; coordinate geometry; and motion geometry. Technology and manipulatives will be used by the student to explore geometric properties and relationships. Mathematics Core Course. (OT 36)

General Education: GEO2, GEO3, GEO7

Course Entry Requirement(s): Prerequisite: MTHM 163

Typically Offered: Summer, Fall and Spring Semesters

MTHM 168, STATISTICS 3 (3)

This course provides a non-calculus based introduction to statistical thinking and statistical methods. The topics discussed in the course include: data collection, data description, basic probability, sampling distributions, probability distributions, confidence intervals and hypothesis tests. An emphasis is placed on using technology to solve problems involving real data and hands-on projects are used throughout the course. Mathematics Core Course. (OT 36)

General Education: GE01, GE02, GE07

Course Entry Requirement(s): Course placement policy: Satisfactory placement assessment in mathematics or concurrent enrollment in MTHM 068.

Typically Offered: Summer, Fall and Spring Semesters

MTHM 171, COLLEGE ALGEBRA 4 (4)

Study of algebraic functions, equations, systems of equations, inequalities, exponential and logarithmic functions, including linear, quadratic, higher order polynomial, rational, radical, piece-wise defined functions, absolute value. Designed primarily for the calculus-bound student. Mathematics Core Course. (OT 36)

General Education: GE02, GE03, GE07

Course Entry Requirement(s): Course placement policy: Satisfactory placement assessment score in mathematics or concurrent enrollment in MTHM 072.

Typically Offered: Summer, Fall and Spring Semesters

MTHM 174, TRIGONOMETRY 4 (4)

For the calculus-bound student. A study of angles; trigonometric functions and their graphs; trigonometric identities; trigonometric equations and inequalities; trigonometric models; right and oblique triangles; polar equations and graphs; and vectors. Mathematics Core Course. (OT 36)

General Education: GE02, GE03, GE07

Course Entry Requirement(s): Prerequisite: Grade of C or higher in MTHM 171

Typically Offered: Summer, Fall and Spring Semesters

MTHM 176, PRECALCULUS 5 (5)

An accelerated, single-semester preparation for calculus emphasizing the study and analysis of algebraic, polynomial, rational, exponential, logarithmic, and trigonometric functions. Students investigate functions numerically, graphically, and analytically; apply function transformations and composition; analyze rates of change; and interpret limits. Topics include equations and inequalities, inverse and piecewise-defined functions, modeling, systems of equations, and polar coordinates. Significant emphasis is placed on developing mathematical reasoning, connecting multiple representations, and preparing students for success in Calculus. Mathematics Core Course. (OT36)

General Education: GE02, GE03, GE07

Course Entry Requirement(s): Course Placement Policy: Satisfactory placement assessment score in mathematics

Typically Offered: Summer, Fall and Spring Semesters

MTHM 178, BUSINESS CALCULUS 4 (4)

A calculus course designed for the non-science major. Topics include: algebra review, limits, continuity, applications of differentiation, curve sketching, and applications of integration, all of which use polynomial, rational, algebraic, exponential and logarithmic functions. Mathematics Core Course. (OT 36)

General Education: GE02, GE07

Course Entry Requirement(s): Prerequisite: A grade of C or better in MTHM 171 or MTHM 176 or division approval

Typically Offered: Summer, Fall and Spring Semesters

MTHM 181, CALCULUS I 5 (5)

Differential and integral calculus of one variable, including limits, continuity, differentiation, applications of derivatives, and transcendental functions. Mathematics Core Course. (OT 36)

General Education: GE02, GE07

Course Entry Requirement(s): Prerequisite: A grade of C or better in MTHM 174 or MTHM 176 or four years of high school college-preparatory mathematics including trigonometry and a satisfactory placement assessment score or division approval.

Typically Offered: Summer, Fall and Spring Semesters

MTHM 182, CALCULUS II 5 (5)

Continuation of Calculus I. Applications of integration, techniques of integration, numerical integration, indeterminate forms, improper integrals, infinite series, plane curves and polar coordinates. Mathematics Core Course. (OT 36)

General Education: GE02, GE07

Course Entry Requirement(s): Prerequisite: A grade of C or better in MTHM 181 or division approval

Typically Offered: Summer, Fall and Spring Semesters

MTHM 270, DISCRETE MATHEMATICS 3 (3)

An introduction to the mathematics and discrete structures used in computer science to develop software including proof techniques, Boolean logic, permutations, combinations, relations, functions, and sequences. Mathematics Core Course. (OT 36)

General Education: GE02, GE07

Course Entry Requirement(s): Prerequisite: MTHM 174 or MTHM 176 or division approval

Typically Offered: Fall and Spring Semesters

MTHM 280, LINEAR ALGEBRA 4 (4)

A study of linear equations, matrices, vector spaces, linear transformations, eigenvalues and eigenvectors, and elementary numerical methods. Mathematics Core Course. (OT 36, TAG)

General Education: GE02, GE03, GE07

Course Entry Requirement(s): Prerequisite: MTHM 181 and 182 or MTHM 221 and 222 or division approval

Typically Offered: Summer, Fall and Spring Semesters

MTHM 281, MULTIVARIABLE CALCULUS 4 (4)

A third-semester calculus course which includes an in-depth study of vector-valued functions and space curves, functions of several variables, partial differentiation, multiple integration and vector calculus. Mathematics Core Course. (OT 36, TAG)

General Education: GE02, GE07

Course Entry Requirement(s): Prerequisite: MTHM 182 or division approval

Typically Offered: Fall and Spring Semesters

MTHM 283, DIFFERENTIAL EQUATIONS 3 (3)

An introductory course which includes first-order and second-order differential equations, applications to physical models, Laplace transforms, first-order systems and elementary numerical methods. Mathematical Core Course. (OT 36, TAG)

General Education: GE02, GE07

Course Entry Requirement(s): Prerequisite: MTHM 182 or MTHM 281

Typically Offered: Summer, Fall and Spring Semesters

MTHM 287, WORK-BASED LEARNING I - MTHM 1-3 (1)

This course provides supervised work experience building on experience in Work-Based Learning with approved employer(s) in an area related to the student's program. Emphasis is placed on integrating classroom learning with work experience. Students will be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies. Activities are coordinated and evaluated by college personnel.

General Education: GE01, GE02, GE06, GE08

Course Entry Requirement(s): Prerequisite: Minimum 2.0 GPA overall and division approval

Typically Offered: Offer as required

MTHM 299, INDIVIDUALIZED STUDIES IN MATHEMATICS 1-3 (1)

An in-depth study of areas in mathematics presented by discussion and/or individual research and reading. Topics will vary. Repeatable up to six (6) times for a total of six (6) credit hours.

Course Entry Requirement(s): Prerequisite: Second year standing and division approval

Typically Offered: Offer as required