

# MATHEMATICS (MTH)

## MTH 0900 – Mathematics Foundations

**Credit Hours: 4.00 Total Contact Hours: 4.00 Lecture Hours: 4.00**

Reviews foundational mathematical skills for students preparing for pathways other than College Algebra. Topics include review of arithmetic skills (fractions and decimals including numbers in scientific notation), variable expressions, solving equations, operations on polynomials, creating and interpreting graphs, and conversions and their applications. This course is graded S/U.

**Offered:** Summer, Fall, Spring

**Prerequisites:** Placement.

## MTH 0926 – Statistics Companion Course

**Credit Hours: 3.00 Total Contact Hours: 3.00 Lecture Hours: 3.00**

Supports college level statistics and taken in conjunction with MTH 1260, Statistics. This course reviews prerequisite skills and concepts for topics in MTH 1260.

**Offered:** Summer, Fall, Spring

**Prerequisites:** Placement

**Corequisites:** MTH 1260.

## MTH 0933 – Quantitative Reasoning or Statistics Companion Course

**Credit Hours: 2.00 Total Contact Hours: 2.00 Lecture Hours: 2.00**

Supports college-level quantitative reasoning or statistics, and taken in conjunction with MTH 1151, Quantitative Reasoning or MTH 1260, Statistics. This course reviews prerequisite skills and concepts. Topics may include problem solving, equations and inequalities, interval notation, dimensional analysis, percentage problems, calculator usage, graphing and other topics as needed. This course is graded S/U.

**Offered:** Summer, Fall, Spring

**Prerequisites:** Placement

**Corequisites:** MTH 1151 or MTH 1260.

## MTH 0937 – College Algebra Companion Course

**Credit Hours: 3.00 Total Contact Hours: 3.00 Lecture Hours: 3.00**

Supports college algebra and taken in conjunction with MTH 1370, College Algebra. This course reviews prerequisite skills and concepts for topics in MTH 1370. This course is graded S/U.

**Offered:** Summer, Fall, Spring

**Prerequisites:** MTH 0900 or MTH 0953 or Placement

**Corequisites:** MTH 1370.

## MTH 0951 – Quantitative Reasoning Companion Course

**Credit Hours: 2.00 Total Contact Hours: 2.00 Lecture Hours: 2.00**

Supports college level quantitative reasoning and taken in conjunction with MTH 1151, Quantitative Reasoning. This course reviews prerequisite skills and concepts for topics in MTH 1151.

**Offered:** Summer, Fall, Spring

**Prerequisites:** Placement

**Corequisites:** MTH 1151.

## MTH 0953 – Foundations for College Algebra

**Credit Hours: 5.00 Total Contact Hours: 5.00 Lecture Hours: 5.00**

Reviews foundational topics for students preparing for the College Algebra pathway. Topics covered include linear functions and inequalities in two variables, systems of linear equations and inequalities, polynomials, factoring, rational expressions, exponents, radicals, quadratic equations, exponential and logarithmic functions. This course is graded S/U.

**Offered:** Summer

**Prerequisites:** MTH 0900 or Placement.

## MTH 1151 – Quantitative Reasoning

**Credit Hours: 3.00 Total Contact Hours: 3.00 Lecture Hours: 3.00**

Covers quantitative relationships and solving problems in a variety of real-world contexts, mathematical models used to make decisions, language and structure of statistics and probability to investigate, represent, make decisions, and draw conclusions from real-world contexts. Topics include solving, graphing, and applying linear, quadratic, and exponential equations, an introduction to functions, systems of linear equations, linear inequalities, elements of consumer math, including simple and compound interest and annuities, introductory descriptive statistics, and unit conversions.

**Offered:** Summer, Fall, Spring

**Transfer:** TM

**Prerequisites:** MTH 0900 or Placement

**Corequisites:** MTH 0933 or MTH 0951.

## MTH 1260 – Statistics

**Credit Hours: 3.00 Total Contact Hours: 3.00 Lecture Hours: 3.00**

Covers data collection, frequency distribution, graphs, measures of central tendency and dispersion, probability concepts, probability distributions, sampling distributions, confidence intervals, hypothesis testing, analysis of variance, and correlation and regression analysis.

**Offered:** Summer, Fall, Spring

**Transfer:** TM

**Prerequisites:** MTH 0900 or MTH 0953 or Placement

**Corequisites:** MTH 0926 or MTH 0933.

## MTH 1370 – College Algebra

**Credit Hours: 4.00 Total Contact Hours: 4.00 Lecture Hours: 4.00**

Covers equations and inequalities, complex numbers, graphs and equations of lines, functions including quadratic functions and composite functions, inverse functions, polynomial and rational functions, the Fundamental Theorem of Algebra, exponential and logarithmic functions, systems of equations and inequalities, conic sections, and sequences and series. A specific calculator requirement will be made by the instructor on the first day of class.

**Offered:** Summer, Fall, Spring

**Transfer:** TM

**Prerequisites:** MTH 0953 or Placement

**Corequisites:** MTH 0937.

## MTH 1430 – Trigonometry

**Credit Hours: 3.00 Total Contact Hours: 3.00 Lecture Hours: 3.00**

Concentrates on the development and use of the trigonometric functions with additional study of vectors. The course will cover trigonometric functions, solving right and oblique triangles, graphs of trigonometric functions, identities, trigonometric equations, inverse trigonometric functions, complex numbers, polar coordinates and graphs, and vectors.

**Offered:** Spring

**Transfer:** TM

**Prerequisites:** MTH 1370 (with a grade of 'C' or better) or placement.

## MTH 1611 – Business Calculus

**Credit Hours: 5.00 Total Contact Hours: 5.00 Lecture Hours: 5.00**

Covers limits and continuity, derivatives and integration and their applications in a business environment.

**Offered:** Spring

**Transfer:** TM

**Prerequisites:** MTH 1370 with a 'C' or better or placement.

**MTH 1711 – Calculus I**

**Credit Hours: 5.00 Total Contact Hours: 5.00 Lecture Hours: 5.00**  
Covers limits including the definition and l'Hospital's Rule; continuity; derivatives including the transcendental functions; applications of derivatives including related rate, curve sketching, and optimization problems; introduction to integration; Fundamental Theorem of Calculus; and applications to area and volumes.

**Offered:** Fall

**Transfer:** TM

**Prerequisites:** MTH 1370, MTH 1430 (with grade of 'C' or better) or placement.

**MTH 1721 – Calculus II**

**Credit Hours: 5.00 Total Contact Hours: 5.00 Lecture Hours: 5.00**  
Covers integrals including techniques of integration; applications of integration including volume and work problems; approximating definite integrals; improper integrals; arc length of a curve; area of a surface; solving separable differential equations; parametric equations; polar coordinates; infinite sequences and series; and vectors and geometry of space.

**Offered:** Spring

**Transfer:** TM

**Prerequisites:** MTH 1711 (with a 'C' or better).

**MTH 2261 – Discrete Mathematics**

**Credit Hours: 3.00 Total Contact Hours: 3.00 Lecture Hours: 3.00**  
Introduces mathematical reasoning and several topics from discrete mathematics that underlie, inform, or elucidate the development, study, and practice of related fields. Topics include logic, proof techniques, set theory, functions and relations, counting and probability, elementary number theory, graphs and tree theory, base-n arithmetic, and Boolean algebra.

**Offered:** Spring

**Prerequisites:** MTH 1611 or MTH 1711 (with a grade of 'C-' or better).

**MTH 2660 – Calculus III**

**Credit Hours: 4.00 Total Contact Hours: 4.00 Lecture Hours: 4.00**  
Provides students with a rigorous background in vector functions, partial derivatives, multiple integrals and vector calculus. Applications of differential and integral calculus to surfaces in space and of multiple integrals to volumes, areas, and moments are studied. Green's Theorem, Stokes' Theorem, and the Divergence Theorem and their application to problems in physics and engineering are also included. MTH 1711, MTH 1721, and MTH 2660 (Calculus I, II, and III) provide students with a traditional Calculus sequence.

**Offered:** Fall

**Transfer:** TAG, TM

**Prerequisites:** MTH 1721 (with a grade of 'C' or better).

**MTH 2670 – Differential Equations**

**Credit Hours: 4.00 Total Contact Hours: 4.00 Lecture Hours: 4.00**  
Provides students with a background in solving first order separable, linear, and exact differential equations; solving higher order homogeneous and nonhomogeneous differential equations using a variety of methods including Laplace transforms; and solving systems of first order linear equations. Applications of these concepts are also covered.

**Offered:** Spring

**Transfer:** TAG, TM

**Prerequisites:** MTH 1721 (with a grade of 'C' or better).

**MTH 2680 – Elementary Linear Algebra**

**Credit Hours: 4.00 Total Contact Hours: 4.00 Lecture Hours: 4.00**  
Provides students with a background in solving systems of linear equations using various methods including the Gauss-Jordan method, matrices and their operations and properties, determinants, vector spaces, inner product spaces, linear transformations, and eigenvalues and eigenvectors. Applications of these concepts are also covered.

**Offered:** Spring

**Transfer:** TAG, TM

**Prerequisites:** MTH 1721 (with a grade of 'C' or better).