

MATHEMATICS (MATH)

MATH 005 Modern Mathematics

4unit(s)

Hours: 4 Lecture/Discussion

Equivalent Course: MATH 105

An introduction to functional mathematical problem solving: statistics, probability, and finance. Other topics will vary.

Prerequisites: MATH 230 or equivalent college course with a minimum grade of C or eligibility as determined by COS placement procedures.

MATH 010 Structure and Concepts 1

4unit(s)

Hours: 4 Lecture/Discussion

This is a four-unit course focusing on the development of quantitative reasoning skills through in-depth, integrated explorations of topics in mathematics, including real number systems and subsystems. Emphasis is on comprehension and analysis of mathematical concepts and applications of logical reasoning. This course is intended for liberal studies students, though it can be used to meet general education requirements. Supplemental learning assistance is available for students to strengthen skills and to reinforce student mastery of concepts. Students enrolled in Math 010 may access the supplemental learning assistance by enrolling in Math 400, an open entry/open exit non-credit course. (C-ID MATH120)

Prerequisites: MATH 230 or equivalent college course with a minimum grade of C or eligibility as determined by COS Placement Procedures (<https://catalog.cos.edu/placement-procedures/>).

MATH 011 Structures and Concepts 2

4unit(s)

Hours: 4 Lecture/Discussion

This course continues topics from MATH 010 and includes statistics, probability, geometry, measurement, transformations, congruence, and coordinate geometry. The emphasis of this course is in mathematical topics relevant to future elementary school teachers. This course is intended for liberal studies students, though it can be used to meet general education requirements. Supplemental learning assistance is available for students to strengthen skills and to reinforce student mastery of concepts. Students enrolled in MATH 011 may access the supplemental learning assistance by enrolling in MATH 400, an open entry/open exit non-credit course.

Prerequisites: MATH 010 or equivalent college course with a minimum grade of C.

MATH 035 Precalculus A

4unit(s)

Hours: 4 Lecture/Discussion

College level course in algebra for majors in science, technology, engineering, and mathematics: polynomial, rational, radical, exponential, absolute value, and logarithmic functions; systems of equations; theory of polynomial equations; analytic geometry.

Prerequisites: MATH 044 or equivalent college course with a minimum grade of C or eligibility as determined by COS Placement Procedures (<https://catalog.cos.edu/placement-procedures/>).

MATH 044 College Algebra

4unit(s)

Hours: 4 Lecture/Discussion

Equivalent Course: MATH 144

College level course in algebra: polynomial, rational, radical, exponential, absolute value, and logarithmic functions; systems of equations; theory of polynomial equations; analytic geometry.

Prerequisites: Intermediate Algebra or equivalent college course with a minimum grade of C or eligibility based on COS Placement Procedures.

MATH 054 Precalculus B

4unit(s)

Hours: 4 Lecture/Discussion

Equivalent Course: MATH 154

The study of trigonometric functions, their inverses and their graphs, identities and proofs related to trigonometric expressions, trigonometric equations, solving right triangles, solving triangles using the Law of Cosines and the Law of Sines, polar coordinates, and introduction to vectors. Students enrolled in MATH 054 may access the supplemental learning assistance by enrolling in MATH 400, an open entry/open exit non-credit course. (C-ID MATH851)

Prerequisites: MATH 035 or equivalent college course with a minimum grade of C or eligibility as determined by COS Placement Procedures (<https://catalog.cos.edu/placement-procedures/>).

MATH 065 Calculus 1

4unit(s)

Hours: 4 Lecture/Discussion

This course is the first course of a three semester calculus sequence. Topics include limits, continuity, techniques and applications of differentiation and integration of algebraic and transcendental functions, and the Fundamental Theorem of Calculus. The course is intended primarily for mathematics, physical science, and engineering majors. Supplemental learning assistance is available for students to strengthen skills and to reinforce student mastery of concepts. Students enrolled in MATH 065 may access the supplemental learning assistance by enrolling in MATH 400, an open entry/open exit non-credit course. (MATH 065 + MATH 066 + MATH 067 course sequence is equivalent to the former MATH 075 + MATH 076 + MATH 077 course sequence). (C-ID MATH210)

Prerequisites: MATH 070 or MATH 054 or equivalent college course with a minimum grade of C or eligibility as determined by COS Placement Procedures (<https://catalog.cos.edu/placement-procedures/>).

MATH 066 Calculus 2

4unit(s)

Hours: 4 Lecture/Discussion

This is the second course of a three-semester calculus sequence. Topics include techniques of integration, improper integrals, applications of integration, infinite sequences and series, analytic geometry, polar and parametric equations, and many applications. Supplemental learning assistance is available for students to strengthen skills and to reinforce student mastery of concepts. Students enrolled in MATH 66 may access the supplemental learning assistance by enrolling in MATH 400, an open entry/open exit non-credit course. (MATH 65 + 66 + 67 course sequence is equivalent to the former MATH 75 + 76 + 77 course sequence). (C-ID MATH220)

Prerequisites: MATH 065 or MATH 075 or equivalent college course with a minimum grade of C.

MATH 067 Calculus 3

4unit(s)

Hours: 4 Lecture/Discussion

This course is the third semester of the introductory calculus sequence. Topics covered include differentiation and integration of vector-valued functions, partial differentiation, directional derivatives, Lagrange Multipliers, multiple integration, centroids and centers of gravity, and Green's, Stoke's, and Divergence Theorem. Supplemental learning assistance is available for students to strengthen skills and to reinforce student mastery of concepts. Students enrolled in MATH 067 may access the supplemental learning assistance by enrolling in MATH 400, an open entry/open exit non-credit course. (MATH 65 + 66 + 67 course sequence is equivalent to the former MATH 75 + 76 + 77 course sequence). (C-ID MATH230)

Prerequisites: MATH 066 or MATH 076 or equivalent college course with a minimum grade of C.

MATH 070 Precalculus

Hours: 5 Lecture/Discussion

This course is intended for students planning to take calculus and proceeds at an intense pace. Topics include: functions and graphs, applications of functions, exponential and logarithmic functions, trigonometric functions and analytic trigonometry, right triangle trigonometry, analytic geometry, and roots of polynomial equations. Supplemental learning assistance is available for students to strengthen skills and to reinforce student mastery of concepts. Students enrolled in MATH 070 may access the supplemental learning assistance by enrolling in MATH 400, an open entry/open exit non-credit course. (C-ID MATH155)

Prerequisites: MATH 054 or equivalent college course with a minimum grade of C.

5unit(s)**MATH 080 Linear Algebra**

Hours: 4 Lecture/Discussion

This course develops the techniques and theory needed to solve and classify systems of linear equations. Solution techniques include row operations, Gaussian elimination, and matrix algebra. The course investigates the properties of vectors in two and three dimensions, leading to the notion of an abstract vector space. Vector space and matrix theory are presented including topics such as inner products, norms, orthogonality, eigenvalues, eigenspaces, and linear transformations. Selected applications of linear algebra are included. Supplemental learning assistance is available for students to strengthen skills and to reinforce student mastery of concepts. Students enrolled in MATH 080 may access the supplemental learning assistance by enrolling in MATH 400, an open entry/open exit non-credit course. (C-ID MATH250)

Prerequisites: MATH 066 or equivalent college course with a minimum grade of C.

4unit(s)**MATH 081 Differential Equations**

Hours: 5 Lecture/Discussion

An introduction of solving ordinary and partial differential equations including matrix solutions of linear systems, Laplace transforms, series solutions, separation of variables in partial differential equations, boundary value problems, and Fourier series. Supplemental learning assistance is available for students to strengthen skills and to reinforce student mastery of concepts. Students enrolled in MATH 081 may access the supplemental learning assistance by enrolling in MATH 400, an open entry/open exit non-credit course. (C-ID MATH240)

Advisory on Recommended Preparation: MATH 080 or equivalent college course with a minimum grade of C.

Prerequisites: MATH 067 or equivalent college course with a minimum grade of C.

5unit(s)**MATH 207 Career Ed and Technical Math**

Hours: 4 Lecture/Discussion

A mathematics course designed to develop the computational skills needed in many Career and Technical programs. Topics include geometry, measurement, number sense, estimation, basic statistics, trigonometric functions, algebraic thinking, and problem-solving. This course is designed for students who are earning an associate's degree and who are not planning to transfer to a four-year institution.

4unit(s)**MATH 310 Support for Structures and Concepts 1**

Hours: 1 Lecture/Discussion

Co-requisite support for MATH 010 Structures and Concepts 1. This 1-unit course is intended to provide co-requisite support for students requiring remediation in mathematics while they are concurrently enrolled in MATH 010. Emphasis will be placed on prerequisite skills needed for success in this course as well as study skills and just in time review and remediation.

Corequisites: MATH 010 must be taken concurrently.

1unit(s)**MATH 335 Support for Precalculus A**

Hours: 2 Lecture/Discussion

Co-requisite support for MATH 035 Precalculus A. This 2-unit course is intended to provide co-requisite support for students requiring remediation in mathematics while they are concurrently enrolled in MATH 035. Emphasis will be placed on prerequisite skills needed for Precalculus A as well as study skills, appropriate use of technology, and just in time review and remediation.

Corequisites: MATH 035 must be taken concurrently.

2unit(s)**MATH 344 Support for College Algebra**

Hours: 2 Lecture/Discussion

Co-requisite support for MATH 044 College Algebra. This 2-unit course is intended to provide co-requisite support for students requiring remediation in mathematics while they are concurrently enrolled in MATH 044. Emphasis will be placed on prerequisite skills needed for College Algebra as well as study skills, appropriate use of technology, and just in time review and remediation.

Corequisites: MATH 044 must be taken concurrently.

2unit(s)**MATH 375 Support for Calculus 1**Hours: 1 Lecture/Discussion Hours:
3 Lab

Corequisite support for MATH 065 (Calculus 1). This 2-unit course is intended to provide corequisite support for students with gaps in their understanding of precalculus topics while they are concurrently taking MATH 065 (Calculus 1). The course will emphasize just-in-time remediation for prerequisite skills needed for calculus.

Corequisites: MATH 065 must be taken concurrently.

2unit(s)**MATH 400 Math Supplemental Learning Assistance**

Hours: 3.1 Lab

Math Supplemental Learning Assistance is intended to strengthen students' mathematical skills and reinforce their mastery of concepts. This open entry/open exit class is linked with MATH 10, 11, 21, 54, 70, 65, 66, 67, 80, 81, 200, 230, and 360.

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