Mathematics (MATH)

MATH 78: College Math Companion
MATH 78 provides students concurrently enrolled in MATH 100 or MATH 115, as scheduled, with Just-In-Time support with special emphasis on pattern recognition and problem solving. Course topics are tailored to the concurrent course and may include ratio and percent, unit conversion, graphs, data interpretation, basic algebra, solving linear equations, and working with formulas.
Credits: 1
Prerequisites:
Appropriate MATH placement and concurrently enrolled in MATH 100 or MATH 115

MATH 78B: College Math Companion B
MATH 78B provides students concurrently enrolled in MATH 100, MATH 111, or MATH 115 with Just-In-Time support with special emphasis on pattern recognition and problem solving. Course topics are tailored to the concurrent course and may include ratio and percent, unit conversion, graphs, data interpretation, basic algebra, solving linear equations, and working with formulas.
Credits: 3
Prerequisites:
Concurrently enrolled in MATH 100, MATH 111, or MATH 115

MATH 82X: Expanded Algebraic Foundations
This course covers elementary algebra topics. Topics include linear equations and inequalities, graphing, linear systems, properties of exponents, operations on polynomials, factoring, rational and radical expressions and equations, quadratic equations, and applications. Additional topics may include graphing by transformation, introduction to logarithms and functions, and dimensional analysis. Formerly numbered MATH 82.
Credits: 5
Prerequisites:
Appropriate MATH placement
Recommended Prep:
English and math skills at the High School Common Core Level. Basic computer, internet, and keyboarding skills.

MATH 88: College Algebra Companion
This course provides students with supplemental algebra instruction that directly supports the topics covered in MATH 103 (College Algebra). Course topics are tailored to MATH 103 and may include linear equations and inequalities, graphing, linear systems, properties of exponents, operations on polynomials, factoring, rational and radical expressions and equations, quadratic equations, and applications.
Credits: 2
Prerequisites:
Appropriate MATH placement
Co-Requisites:
MATH 103
Recommended Prep:
Basic computer, internet, and keyboarding skills.

MATH 100: Survey of Mathematics
MATH 100 includes a variety of selected mathematical topics designed to acquaint students with examples of mathematical and quantitative reasoning that demonstrate the beauty, power, clarity, and precision of mathematics. The core course content includes deductive, numeric, symbolic, graphical and statistical algorithms and reasoning. MATH 100 is not intended as, and does not qualify as, a prerequisite for advanced mathematics courses.
Credits: 3
Prerequisites:
MATH 82X with a grade of CR or Concurrent enrollment in MATH 78 or MATH 78B or Placement in MATH 100
Recommended Prep:
Qualification for or completion of ENG100 or equivalent. Basic computer, internet, and keyboarding skills.

MATH 103: College Algebra
Functions, graphs and their properties are studied by generalizing and interpreting techniques initially introduced in elementary algebra. Simplification techniques are used to define, simplify, and derive elementary properties of linear, quadratic, rational, exponential and logarithmic functions. Equation, system and inequality solving techniques are used to determine the domain and range and analyze the nature of the roots and intersection points of functions and graphs. Quantitative interpretation and practical application of functions and graphs are included throughout the course.
Credits: 3
Prerequisites:
MATH 82X with a grade of CR or Concurrent enrollment in MATH 88 or Appropriate MATH placement
Recommended Prep:
Basic computer, internet, and keyboarding skills.

MATH 111: Math for Elementary Teachers I

This course is the first in a two-course sequence (MATH 111 - MATH 112) designed to give elementary education students the depth of understanding necessary to teach mathematics at that level. The emphasis will be on understanding, representing and communicating mathematical ideas; solving problems; and reasoning mathematically. MATH 111 covers problem-solving techniques, number systems and operations, and additional companion topics. Due to potential variation in topic sequencing, it is recommended that students needing both MATH 111 and MATH 112 take the courses sequentially and from the same institution.
Credits: 3
Prerequisites:
Placement in ENG 100 and MATH 82X with a grade of CR or Concurrent enrollment in MATH 78B or Placement in MATH 111
Recommended Prep:
Math skills at High School Common Core levels Basic computer, internet, and keyboarding skills

MATH 112: Math for Elementary Teachers II

This course is the second in a two-course sequence (MATH 111 - MATH 112) designed to give elementary education students a depth of understanding necessary to teach mathematics at that level. The emphasis will be on understanding, representing and communicating mathematical ideas and procedures; solving problems; and reasoning mathematically. MATH 112 further develops operations, and covers geometry, introductory probability and statistics, and additional companion topics. Due to potential variation in topic sequencing, it is recommended that students needing both MATH 111 and MATH 112 take the courses sequentially and from the same institution.
Credits: 3
Prerequisites:
MATH 111 with a grade of C or better or concurrent enrollment in MATH 111, only when the concurrent MATH 111 section and the MATH 112 section are offered as sequential part-of-term courses

MATH 115: Introduction to Statistics and Probability

This course utilizes basic statistical topics including measures of central tendency and dispersion, classification of variables, sampling techniques, elementary probability, normal and binomial probability distributions, tests of hypothesis, linear regression and correlation in order to solve problems.
Credits: 3
Prerequisites:
MATH 82X with a grade of CR or Concurrent enrollment in MATH 78 or MATH 78B or Appropriate MATH placement
Recommended Prep:
Qualification for or completion of ENG100 or equivalent. Basic computer, internet, and keyboarding skills.

MATH 135: Pre-calculus: Elementary Functions

This course investigates linear, quadratic, polynomial, rational, exponential, logarithmic functions, and related topics. The course is the first part of the precalculus sequence.
Credits: 3
Prerequisites:
MATH 103 with a grade of C or better
Recommended Prep:
ENG 100 and basic computer, internet, and keyboarding skills

MATH 140: Pre-calculus: Trigonometry and Analytic Geometry

This course studies trigonometric functions, analytic geometry, polar coordinates, vectors, and related topics. This course is the second part of the precalculus sequence.
Credits: 3
Prerequisites:
MATH 135 with a grade of C or better
Recommended Prep:
ENG 100 and basic computer, internet, and keyboarding skills

MATH 140X: Accelerated Pre-calculus: Elementary Functions, Trigonometry, & Analytic Geometry

This course is designed to provide an accelerated path to Calculus to students who have a strong background in College Algebra. Topics include the essential pre-calculus skills needed for success in calculus: functions, with special attention to polynomial, rational, exponential, logarithmic, and trigonometric functions; plane and analytic trigonometry; polar coordinates; and conic sections. Credit may not be earned for both MATH 140 and MATH 140X.
Credits: 4
Prerequisites:
MATH 103 with a grade of A or MATH 135 with a grade of C or better or Placement in MATH 140X
Recommended Prep:
Basic computer, Internet, and keyboarding skills
Qualification for or completion of ENG 100

MATH 241: Calculus I

Introduces and develops basic calculus concepts and procedures: limits, continuity, derivatives, and an introduction to integration of single-variable algebraic and trigonometric functions. Derivations of algorithms and formulas, and proofs of important theorems, are included. Applications of differentiation and integration are introduced to bridge theory and practice. (Formerly MATH 205)
Credits: 4
Prerequisites:
MATH 140 or MATH140X with a grade of C or better or Placement in MATH 241
Recommended Prep:
Basic computer, internet, and keyboarding skills
Qualification for or completion of ENG 100

MATH 242: Calculus II

The second course in the standard four-course calculus sequence. The course extends differentiation and integration to single-variable inverse trigonometric, logarithmic, and exponential functions. Topics include techniques of integration, convergence of improper integrals, sequences and series, Power and Taylor series representations of functions, and an introduction to differential equations. (Formerly MATH 206)
Credits: 4
Prerequisites:
MATH 241 with a grade of C or better
Recommended Prep:
Basic computer, internet, and keyboarding skills

MATH 243: Calculus III

The third course in the standard four-course calculus sequence. Vector algebra, vector-valued functions, differentiation of functions of several variables, and optimization. (Formerly MATH 231)
Credits: 3
Prerequisites:
MATH 242 with a grade of C or better
Recommended Prep:
Basic computer, internet, and keyboarding skills

MATH 244: Calculus IV

The final courses in the standard four-course calculus sequence. Topics include multiple integrals, line integrals, Green's Theorem, surface integrals, Stokes' Theorem, and Gauss's Theorem. (Formerly MATH 232)
Credits: 3
Prerequisites:
MATH 243 with a grade of C or better
Recommended Prep:
Basic computer, internet, and keyboarding skills