

# MATHEMATICS (MATH)

## MATH 1XX: Mathematics Placeholder

**Credits:** 3

**College:** Jefferson College of Humanities & Sciences

**Schedule Type:** Lecture

## MATH 2XX: Mathematics Placeholder

**Credits:** 3

**College:** Jefferson College of Humanities & Sciences

**Schedule Type:** Lecture

## MATH 100: College Algebra

While the content of MATH-100 is identical to that of MATH-101, more time is devoted during the semester to the review and use of elementary mathematical operations. See MATH-101 for content.

**Credits:** 3

**College:** Jefferson College of Humanities & Sciences

**Prerequisites:** MATH 099 or Math Placement (Non-Science) with a score of 5 or Math Placement (Science) with a score of 6 [Min Grade: D]

**Schedule Type:** Lecture, On-Line

## MATH 101: College Algebra

MATH-101 is a concentrated study of the topics traditionally found in College Algebra. Topics of study include algebraic equations and inequalities, absolute value, polynomial, rational, exponential and logarithmic functions, systems of equations and inequalities, matrices and determinants. Emphasis is placed on applications in business and economics. Additional topics may include conic sections, sequences and series, combinatorics, probability, modeling with functions, and mathematical induction.

**Credits:** 3

**College:** Jefferson College of Humanities & Sciences

**Prerequisites:** Math Placement (Non-Science) with a score of 10 or MATH 099 [Min Grade: D]

**Schedule Type:** Lecture, On-Line

## MATH 102: Pre-Calculus

The fundamentals of college algebra, analytic geometry and trigonometry will be covered, with particular emphasis on those topics necessary for the calculus sequence.

**Credits:** 3

**College:** Jefferson College of Humanities & Sciences

**Prerequisites:** MATH 100 or MATH 101 or Math Placement (Non-Science) with a score of 10 [Min Grade: D]

**Schedule Type:** Lecture, On-Line

## MATH 103: Applied Calculus

An introduction to the differential and integral calculus of polynomials, rational functions, exponentials and logarithms. Emphasis is placed on the use of calculus in the study of rate of change, determination of extrema and area under the curve.

**Credits:** 3

**College:** Jefferson College of Humanities & Sciences

**Prerequisites:** MATH 102 or Math Placement (Non-Science) with a score of 15 [Min Grade: D]

**Schedule Type:** Lecture, On-Line

## MATH 104: Analytical Geometry

**Credits:** 3

**College:** Jefferson College of Humanities & Sciences

**Schedule Type:** Lecture

## MATH 110: Pre-Calculus for Sci & Engrs

The fundamentals of college algebra, analytic geometry and trigonometry will be covered, with particular emphasis on those topics necessary for the calculus sequence.

**Credits:** 4

**College:** Jefferson College of Humanities & Sciences

**Prerequisites:** MATH 100 or MATH 101 or Math Placement (Science) with a score of 10 or MATH 102 [Min Grade: D]

**Schedule Type:** Lecture, On-Line

## MATH 111: Calculus I

Functions, slope and rate of change, limits, derivations of algebraic functions, maxima and minima applications, indefinite integration, integration by substitution, sigma notation, area between two curves. Knowledge of algebra, geometry and trigonometric functions is assumed.

**Credits:** 4

**College:** Jefferson College of Humanities & Sciences

**Prerequisites:** MATH 110 or Math Placement (Science) with a score of 14 [Min Grade: D]

**Schedule Type:** Lecture, On-Line

## MATH 112: Calculus II

Differentiation and integration of transcendental functions. Theory and methods of integration and applications. Infinite series, convergent tests, Maclaurin and Taylor series. Convergence of Taylor series.

**Credits:** 4

**College:** Jefferson College of Humanities & Sciences

**Prerequisites:** MATH 111 [Min Grade: D]

**Schedule Type:** Lecture, On-Line

## MATH 120: College Algebra

**Credits:** 3

**College:** Jefferson College of Humanities & Sciences

**Schedule Type:** Lecture, On-Line

## MATH 152: College Algebra

**Credits:** 3

**College:** Jefferson College of Humanities & Sciences

**Schedule Type:** Lecture, Lecture/On-Line, On-Line

## MATH 198: Mathematics I

**Credits:** 3

**College:** Jefferson College of Humanities & Sciences

**Schedule Type:** Lecture

## MATH 205: Theory of Computation

**Credits:** 3

**College:** Jefferson College of Humanities & Sciences

**Schedule Type:** Lecture

## MATH 213: Calculus III

Study of analytic geometry in 3D-space; algebra of vectors, differentiation and integration of vectors; partial differentiation, multiple integrals; infinite series.

**Credits:** 4

**College:** Jefferson College of Humanities & Sciences

**Prerequisites:** MATH 112 [Min Grade: D]

**Schedule Type:** By Appointment, Lecture

## MATH 214: Linear Algebra

**Credits:** 3

**College:** Jefferson College of Humanities & Sciences

**Prerequisites:** MATH 112 [Min Grade: D]

**Schedule Type:** Lecture

**MATH 215: College Algebra**

Heavy emphasis will be placed on applications and mathematical modeling. Topics covered include those in a traditional College Algebra course. Students will gain knowledge and skills in problem solving and modeling using graphing calculators and computer software

**Credits:** 3**College:** Jefferson College of Humanities & Sciences**Schedule Type:** By Appointment - 1 student, By Appointment - 3 students, By Appointment - 4 students, Lecture, On-Line**MATH 225: Differential Equations**

First-order equations; constant-coefficient, nth-order homogeneous and non-homogeneous equations; special nonlinear equations; elementary applications; power series solutions. May also include elementary numerical techniques for solutions of ordinary differential equations and other computer topics.

**Credits:** 3**College:** Jefferson College of Humanities & Sciences**Prerequisites:** MATH 112 [Min Grade: D]**Schedule Type:** Lecture**MATH 301: Data Visualization**

This course introduces techniques and methodologies for creating effective visualizations based on principles from graphic design, visual art, perceptual psychology, and cognitive science. Topics include: data and image models, color, graph layout, communication design, infographics, identification of "chart junk", matters of scientific integrity, and optimization of data-ink in multivariate data sets. Although there is no pre-requisite for this course, basic working knowledge of, or willingness to learn, data analysis tools (e.g., R, Excel, Matlab/Octave) will be useful.

**Credits:** 3**College:** Jefferson College of Humanities & Sciences**Prerequisites:** MATH 101**Schedule Type:** Lab, Lecture, Lecture/Lab, Lecture/On-Line, On-Line**MATH 316: Partial Differential Equations****Credits:** 3**College:** Jefferson College of Humanities & Sciences**Prerequisites:** MATH 225 [Min Grade: D]**Schedule Type:** Lecture**MATH 317: Real Variables****Credits:** 3**College:** Jefferson College of Humanities & Sciences**Prerequisites:** MATH 225 [Min Grade: D]**Schedule Type:** Lecture**MATH 318: Complex Variables****Credits:** 3**College:** Jefferson College of Humanities & Sciences**Prerequisites:** MATH 225 [Min Grade: D]**Schedule Type:** Lecture**MATH 321: Probability and Statistics****Credits:** 3**College:** Jefferson College of Humanities & Sciences**Prerequisites:** MATH 112 [Min Grade: D]**Schedule Type:** Lecture**MATH 323: Mathematical Statistics****Credits:** 3**College:** Jefferson College of Humanities & Sciences**Prerequisites:** MATH 321 [Min Grade: D]**Schedule Type:** Lecture**MATH 326: Modern Algebra****Credits:** 3**College:** Jefferson College of Humanities & Sciences**Prerequisites:** MATH 214 [Min Grade: D]**Schedule Type:** Lecture**MATH 331: Math Methods in Chem, Phys & Eng****Credits:** 3**College:** Jefferson College of Humanities & Sciences**Prerequisites:** MATH 112 [Min Grade: D]**Schedule Type:** Lecture