

Pre-Calculus

Course Overview and Syllabus

Course Number: MA1104

Grade Level: 9–12

Prerequisite Courses: Algebra II

Credits: 1.0

Course Description

Exploring the relationship between advanced algebra topics and trigonometry, this informative introduction to calculus challenges students to discover and comprehend the nature of graphs, nonlinear systems, and polynomial and rational functions. Encouraging logarithmic knowledge and application, this two-semester course for high school students covers many interesting and advanced subject areas in a thoughtful and supportive format, providing students a deeper understanding of topics, including limits, continuity, derivatives, and the Fundamental Theorem of Calculus.

Course Objectives

Throughout the course, you will meet the following goals:

- Extend previous coursework with functions with a more in-depth analysis of polynomial and transcendental functions
- Use matrices and vectors to solve mathematical and real-world problems
- Use parametric equations to describe functions and model real-world concepts
- Analyze conic sections, and their rotations, in Cartesian and polar coordinate systems
- Perform statistical analysis using normal distribution approximations
- Understand the concepts of a limit, derivative, and integral, and how they are related via the Fundamental Theorem of Calculus

Student Expectations

This course requires the same level of commitment from you as a traditional classroom course would. Throughout the course, you are expected to spend approximately 5–7 hours per week online on the following activities:

- Interactive lessons that include a mixture of instructional videos and tasks
- Assignments in which you apply and extend learning in each lesson
- Assessments, including quizzes, tests, and cumulative exams

Communication

Your teacher will communicate with you regularly through discussions, email, chat, and system announcements. You will also communicate with classmates, either via online tools or face to face, as you collaborate on projects, ask and answer questions in your peer group, and develop your speaking and listening skills.

Grading Policy

You will be graded on the work you do online and the work you submit electronically to your teacher. The weighting for each category of graded activity is listed below.

Grading Category	Weight
Assignments	10%
Labs	0%
Lesson Quizzes	20%
Unit Tests	50%
Cumulative Exams	20%
Additional	0%

Scope and Sequence

When you log into Edgenuity, you can view the entire course map—an interactive scope and sequence of all topics you will study. The units of study are summarized below:

Unit 1: Equations and Inequalities

Unit 2: Systems of Equations and Inequalities

Unit 3: Functions and Graphs

Unit 4: The Nature of Graphs

Unit 5: Polynomial and Rational Functions

Unit 6: Exponential and Logarithmic Functions

Unit 7: Trigonometric Functions

Unit 8: Trigonometric Graphs

Unit 9: Trigonometric Identities

Unit 10: Vectors, Parametric Equations, and Polar Equations

Unit 11: Conics

Unit 12: Statistics and Probability

Unit 13: Sequences and Series

Unit 14: Introduction to Calculus