

Pre-Calculus

Course Overview and Syllabus

Course Number: 4611

Grade Level: 9–12

Prerequisite Courses: Algebra II

Credits: 1.0

Course Description

With an emphasis on function families and their representations, this full-year course is a thoughtful introduction to advanced studies leading to calculus. The course briefly reviews linear equations, inequalities, and systems and moves purposefully into the study of functions. Students then discover the nature of graphs and deepen their understanding of polynomial, rational, exponential, and logarithmic functions. Scaffolding rigorous content with clear instruction, the course leads students through an advanced study of trigonometric functions, matrices, and vectors. The course concludes with a short study of probability and statistics.

Course Objectives

Throughout the course, you will meet the following goals:

- Analyze and interpret the structure of polynomial, rational, and exponential functions
- Communicate effectively using graphic, numeric, symbolic, and verbal representations
- Explore mathematical reasoning used in trigonometric functions
- Demonstrate an understanding of matrices and solve systems using matrix equations
- Explore and calculate theoretical probabilities and develop a probability distribution for a random variable
- Classify conic equations and construct graphs of conic sections

The course objectives are implemented throughout specific lessons, focusing on applying theorems and properties, using mathematical reasoning to construct arguments and solving real world and mathematical problems.

The lesson objectives are assessed through assignments, quizzes, unit tests, performance tasks and cumulative exams.

Student Expectations

This course requires the same level of commitment from you as a traditional classroom course. Students are expected to spend approximately five to seven hours per week online on:

- 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, e-mail, chat, and system announcements, and will provide you with hours of availability, contact policies, and any synchronous attendance requirements. 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
Lesson Quizzes	30%
Unit Tests	30%
Cumulative Exams	20%
Assignments	20%

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: Systems of Equations

Unit 2: Matrices

Unit 3: Functions and Their Graphs

Unit 4: The Nature of Functions

Unit 5: Complex Numbers

Unit 6: Polynomial Functions

Unit 7: Rational Functions

Unit 8: Right Triangle and Circular Trigonometry

Unit 9: Graphing Trigonometric Functions

Unit 10: Analytic Trigonometry

Unit 11: Additional Topics in Trigonometry

Unit 12: Vectors

Unit 13: Conics and Analytic Geometry

Unit 14: Sequences and Series

Standards Alignment

The course was designed to meet the requirements of the 2016 Oklahoma Academic Standards for Mathematics. The standards aligned to each lesson are available in the student portal in the lesson information panel.

Materials and Technology Requirements

All course materials are provided through the student portal. You will become familiar with them through an orientation video and the student handbook. These resources are available within the Student Organizer, where you can also check the status of your operating system, processor speed, plug-ins and connection speed.

Accessibility

The course is designed for accessibility to all students. The system provides features and accommodations to meet the needs of ELL and students with IEP's, 504 plans, and Section 508. These accommodations include addressing multiple learning styles, accommodations for assessments, video caption/transcripts, read-aloud and translation tools, and many other features/accommodations.