Course Description

Designed to follow Algebra II, this rigorous full-year course builds upon students understanding of various aspects of functions: graphing, composition, inverses, modeling, systems, and inequalities. Students expand their knowledge of trigonometric functions to include graphs of reciprocal functions, and they apply trigonometry to a variety of real-world problems. Students prove trigonometric identities and use them to solve equations. Throughout the course students make connections between geometry and algebra as they: use graphs to solve polynomial, rational, exponential, and logarithmic inequalities; perform operations with complex numbers and vectors; use coordinate algebra to derive equations of ellipses and hyperbolas; and find limits of functions. The standards of mathematical practice are embedded throughout the course as students apply mathematical concepts in modeling situations, make sense of problem situations, solve novel problems, reason abstractly, and think critically.

Course Objectives

Throughout the course, you will meet the following goals:

- Analyze characteristics of relations and functions and interpret them in modeling contexts.

- Use mathematical modeling to solve real-world problems.

- Make connections between numeric, graphical, and algebraic representations of relations and functions.

- Apply a variety of techniques to solve equations, inequalities, and systems.

- Use logical thinking to derive, verify, and prove algebraic relationships, formulas, theorems, and identities.

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.

- Assignments   20%
- Quiz   20%
- Unit Tests   30%
- Exams   20%
- Project   10%

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: Functions and Modeling

Unit 2: Trigonometry

Unit 3: Analytic Trigonometry

Unit 4: Complex Numbers and Polar Coordinates

Unit 5: Vectors

Unit 6: Matrices

Unit 7: Systems and Matrices

Unit 8: Analytic Geometry

Unit 9: Sequences and Series

Unit 10: Limits