

Algebra II Honors

Course Overview and Syllabus

Course Number: MA3111H

Grade Level: 10–12

Prerequisite Courses: Algebra I, Geometry

Credits: 1.0

Course Description

The course begins with a review of concepts that will assist students throughout the course, such as literal equations, problem solving, and word problems. Students then progress to a unit on functions where students compute operations of functions, compose of functions, and study inverses of functions. To build on their algebraic skills, students learn about complex numbers and apply them to quadratic functions via the completing the square and quadratic formula methods. Next, students solve linear systems and apply their knowledge of the concept to three-by-three systems. An in-depth study on polynomial operations and functions allow students build their knowledge of polynomials algebraically and graphically. In the second semester, students study nonlinear functions. Students solve and graph rational and radical functions whereas the exponential and logarithmic functions focus on the key features and transformations of the functions. Expected value and normal distribution concepts expand students' knowledge of probability and statistics. Students also cover trigonometric functions and periodic phenomena.

Course Objectives

Throughout the course, you will meet the following goals:

- Communicate effectively using graphic, numeric, symbolic, and verbal representations.
- Compare and connect the structure of the polynomial system and the system of integers.
- Use the coordinate plane to extend trigonometry to model periodic phenomena.
- Synthesize and generalize what you have learned about a variety of function families.
- Relate visual data displays and summary statistics to different types of data, including probability distributions.

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

- Assessments, including quizzes, tests, and cumulative exams

Communication

Your teacher will communicate with you regularly through discussions, e-mail, 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
Quiz	20%
Test	30%
Exam	20%
Assignment	20%
Additional	0%
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: Expressions and Equations

Unit 2: Introduction to Functions

Unit 3: Quadratics and Complex Numbers

Unit 4: Systems

Unit 5: Polynomial Operations

Unit 6: Polynomial Functions

Unit 7: Rational Functions

Unit 8: Radical Functions

Unit 9: Exponential and Logarithmic Functions

Unit 10: Statistics and Probability

Unit 11: Trigonometric Functions

Unit 12: Mathematical Modeling