

# Algebra II

## Course Overview and Syllabus

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**Course Number:** 4412

**Grade Level:** 9–12

**Prerequisite Courses:** Algebra I

**Credits:** 1.0

### Course Description

This full-year course focuses on functions, polynomials, periodic phenomena, and collecting and analyzing data. The course begins with a review of linear and quadratic functions to solidify a foundation for learning these new functions. Students make connections between verbal, numeric, algebraic, and graphical representations of functions and apply this knowledge as they create equations and inequalities that can be used to model and solve mathematical and real-world problems. As students refine and expand their algebraic skills, they will draw analogies among the operations and field properties of real numbers and those of complex numbers and algebraic expressions. Mathematical practices and habits of mind are embedded throughout the course, as students solve novel problems, reason abstractly, and think critically.

### Course Objectives

Throughout the course, you will meet the following goals:

- Extend the understanding of number and operations to include complex numbers, matrices, radical expressions, and expressions written with rational exponents.
- Use exponential equations to represent real-world and mathematical problems.
- Represent and analyze mathematical situations and structures using algebraic symbols using various strategies to write equivalent forms of expressions.
- Evaluate properties of functions and their graphs.
- Analyze functions through algebraic combinations, compositions, and inverses.

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	20%
Unit Tests	30%
Cumulative Exams	20%
Assignments	20%
Projects	10%
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:** Introduction to Functions

**Unit 2:** Quadratic Functions

**Unit 3:** Systems

**Unit 4:** Polynomials

**Unit 5:** Rational and Radical Functions

**Unit 6:** Exponential and Logarithmic Functions

**Unit 7:** Mathematical Modeling

**Unit 8:** Matrices and Sequences

**Unit 9:** Representing Data and Statistics

## **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.