Mathematics II
Syllabus

Grade level: 9–12

Prerequisite Courses: Mathematics I   **Credits:** 1.0

Course Description

This course begins by focusing on the extension of the number system. Students evaluate functions, touch on exponential functions, and explore the operations of polynomials. Next, nonlinear functions are covered before students complete a unit on factoring polynomials using various methods. The course continues with quadratic expressions, equations, and functions; comparing their characteristics and behavior to those of linear and exponential relationships from previous courses. As quadratic equations become more multifaceted, real and complex numbers are introduced to extend the set of rational numbers which can be used to solve quadratic equations. Students also explore the link between probability and data through conditional probability, two-way tables, and counting methods. Finally, this course challenges students to make connections between algebra and geometry as they study similarity, right triangle trigonometry and proofs, as well as circles with and without coordinates. Students are able to use coordinates to prove simple geometric theorems algebraically as well as analyze two- and three- dimensional figures. The content within this course allows students to practice problem solving and critical thinking as they attempt real-world scenario math problems.

Course Objectives

Throughout the course, you will meet the following goals:

- Demonstrate an understanding of functions and use functions to describe quantitative relationships
- Communicate effectively using graphic, numeric, symbolic, and verbal representations
- Students will solve geometric problems relating to triangles, circles, and solids
- Demonstrate an understanding of the relationship between real and non-real numbers
- Study the theory and application of probability.
- Solve and graph quadratic expressions and functions

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
Lesson Quizzes	20%
Unit Tests	30%
Cumulative Exams	20%
Assignments	20%
Projects	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: Extending the Number System

Unit 2: Nonlinear Functions

Unit 3: Polynomial Expressions

Unit 4: Quadratic Functions and Modeling

Unit 5: Expressions and Equations: Part One

Unit 6: Expressions and Equations: Part Two

Unit 7: Applications of Probability

Unit 8: Similarity, Right Triangle Trigonometry, and Proof: Part One

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