



Mathematics

Course: H Algebra II
Middle/High School: Grades 8-10

Essential Course Information

- Course Revision
- Full Year - 5 Credits
- Required for Graduation.
- Honors level requires proper placement according to district policy and guidelines

Course Overview

In this course, students will extend their knowledge of analyzing graphs and equations of quadratic functions to apply similar graphing techniques and problem solving methods to analyze polynomial functions, rational functions, **inverse functions**, radical functions, exponential functions, and logarithmic functions. The course is an extension to Algebra I. For each of the families listed above, the focus in this course will be on the analysis of functions and equations, evaluating functions for inputs in their domains, interpret statements that use function notations in terms of the context, relate the domain of a function to its graph, and write a function that relates two quantities. The course will also cover topics related to arithmetic and geometric sequences and series and **analysis of data and compound probability**.

Unit	Estimated Class Time	Overview
<u>Unit 1</u> <u>Quadratic Functions</u>	5 weeks	In this unit, students will graph quadratic functions, solve quadratic equations, perform operations with complex numbers, and apply their understanding of quadratic functions to real life applications.
<u>Unit 2</u> <u>Polynomial Functions</u>	7 weeks	In this unit, students will perform operations with polynomial functions, find the composition and inverses of functions, analyze and graph polynomial functions, evaluate and solve polynomial functions, and find factors and zeros of polynomial functions.
<u>Unit 3</u> <u>Rational Functions</u>	6 weeks	In this unit, students will simplify rational expressions, graph rational functions, solve variation problems, and solve rational equations.
<u>Unit 4</u> <u>Radical Functions</u>	4 weeks	In this unit, students will graph and analyze square and cube root functions, and simplify and solve equations involving roots, radicals, and rational exponents.
<u>Unit 5</u> <u>Exponential & Logarithmic Functions</u>	6 weeks	In this unit, students will graph exponential and logarithmic functions, solve exponential and logarithmic equations, and solve problems involving exponential growth and decay.
<u>Unit 6</u> <u>Probability & Data Analysis</u>	2 weeks	In this unit, students will identify the total possible outcomes using a variety of counting methods, compute theoretical and experimental probabilities, compute probabilities of compound events and independent and dependent events, and find conditional probabilities.
<u>Unit 7</u> <u>Sequences & Series</u>	3 weeks	In this unit, students will use arithmetic and geometric sequences and series and expand using the Binomial Theorem.

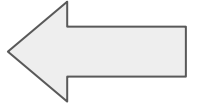
Content Continuum

Algebra I

Algebra I including: linear, quadratic, and exponential equations and functions, systems of equations, operations with polynomials, and probability and statistics.

Algebra II

CP/Honors Algebra II



Geometry & Analysis

Topics in Geometry and Analysis including: foundations of geometry, congruence, similarity, right triangles and trigonometry, polygons, circles, and solids. Advanced algebra concepts will be infused throughout the course.

INSTRUCTIONAL / SUPPLEMENTAL MATERIALS

1. Textbook: Algebra I Glencoe(c) 2014.
2. Online resources and supplemental to enhance understanding of course content and skills
 - McGraw Hill ConnectED
 - Texas Instrument; TI-84 Graphing Calculator and related software.
 - Computer lab
 - and others.

All existing resources will be evaluated for alignment to new curriculum

KEY FEATURES OF REVISION

- Algebra II curriculum was last revised in 2019.
- Student access to digital resources and TI-84 Graphing Calculators has expanded greatly.
- Integration of performance based assessments and common writing tasks.
- Incorporations of activities and assessments that develop 21st century skills.

***LEP (Limited English Proficiency) and Special Education sections of Algebra II are offered.
Differentiation strategies will be included (DATE)***

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