

Montclair High School

Course Syllabus

Department: Math

Course: Algebra 2

Level: Honors

Credits: 5

Course Description:

Algebra 2 Honors is a briskly paced, rigorous course designed to prepare students for Pre-Calculus Honors and college math. It is the second course in the branch of mathematics that enables students to represent and analyze relationships among variable quantities and solve problems involving patterns, functions, and algebraic concepts and processes. The curriculum for this course aligns specifically with the Common Core State Standards for Algebra 2.

[Standards](#)

Anchor Text:

Text Title	Publisher/Author	Year/Edition	ISBN	Text Distribution
New Jersey Algebra 2	Prentice Hall Mathematics, Pearson Education, Inc.	2009	9780133660333	Hard copy & online access

[Online text](#)

Supplementary Materials:

Teacher-prepared worksheets

Units of Study:

- Unit 1: Functions
- Unit 2: Complex Numbers and Polynomials
- Unit 3: Rational and Radical Functions
- Unit 4: Exponential and Logarithmic Functions
- Unit 5: Trigonometric Functions
- Unit 6: Sequences, Series, Probability and Statistics

Proficiencies:

- Identify relations versus functions. Graph functions and describe them using functions vocabulary: independent vs. dependent variables, discrete vs. continuous, increasing, decreasing, constant, rate of change, end behavior.
- Solve system of equations (and inequalities) in two and three variables. Use linear programming to find maximum and minimums of a function.
- Simplify expressions containing polynomials, radicals, complex numbers and rational exponents. Factor polynomials and solve equations containing radicals.
- Solve and graph quadratic equations. Analyze graphs of quadratic functions and inequalities.
- Find the factors and zeros of polynomial functions and graph them.
- Find compositions of functions and their inverses.
- Solve and graph rational equations. Solve problems involving direct, inverse and joint variation. Simplify rational expressions.
- Simplify expressions and solve equations involving real exponents and logarithms. Find common and natural logarithms. Solve equations with variable exponents using logarithms.
- Use arithmetic and geometric series and sequences to solve problems.

Evaluation & Assessment:

- Each Marking Period Grade will be calculated as follows:
 - Tests - 55%
 - Quizzes - 25%
 - Homework - 10%
 - Classwork – 10%
- The final grade will consist of each marking period grade (22.5% each), the midterm exam (5%) and the final exam (5%).