

Algebra II Course Information

Overview: This class is an extension/continuation of what was started in Algebra 1. Students continue their study of Algebraic principles, but also explore more complex mathematical concepts including logarithms, conic sections, and advanced functions. Geometry is usually taken between Algebra 1 and Algebra II and Pre-Calculus is typically the next class after completing this course.

Scope and Sequence: The course is broken down into chapters. Below are the primary concepts from each chapter. **Note: This is not a complete list of course content.**

- **Chapter 1:** Algebraic Properties, Solving Equations and Inequalities, Absolute Value Equations and Inequalities
- **Chapter 2:** Relations & Functions, Linear Equations/Inequalities, Lines of Regression
- **Chapter 3:** Systems of Equations, Cramer's Rule, Linear Programming, Systems of Equations in Three Variables
- **Chapter 4:** Matrices Basics, Working with Matrices, Identity/Inverse Matrices, Augmented Matrices
- **Chapter 5:** Polynomials, Factoring, Radical Expressions and Equations, Rational Exponents, Imaginary and Complex Numbers
- **Chapter 6:** Quadratic Functions, Solving Quadratic Equations, Graphing Quadratic Equations and Inequalities
- **Chapter 7:** Conic Sections (Circles, Parabolas, Ellipses, Hyperbolas), Solving Quadratic Systems
- **Chapter 8:** Polynomial Functions, Roots and Zeros, Rational Zeros, Inverse Functions
- **Chapter 9:** Rational Functions, Direct and Inverse Variation, Rational Expressions
- **Chapter 10:** Exponential and Logarithmic Functions, Logarithms, Exponential Growth and Decay
- **Chapter 11:** Arithmetic and Geometric Series/Sequences, Special Sequences
- **Trigonometry Content:** Trigonometric Ratios, Law of Sines and Cosines, Circular Functions, Trigonometric Functions and Identities, Solving Trigonometric Equations

Assignments/Homework: Assignments are usually about 15-20 problems and should take around 45 mins. To 1 hr. to complete. Upon completion, assignments are to be corrected by the student and reviewed to determine what (if any) questions the student has going into the next class.

Quizzes and Tests: Regular quizzes are taken online and students receive instant feedback on how they did. Quizzes are meant to be taken without books, notes, or other forms of help. Formal tests are taken via the traditional "paper and pencil" format. They are then turned in for correction by the teacher.

Materials/Supplies:

- Students are expected to take notes during class. A binder or notebook typically works the best.
- Graph paper
- Graphing calculator or similar functioning computer program
- Scanner