

# Algebra II Syllabus

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| Year               | 2019-2020  |
| Required Resources | Pearson Texas Algebra II Textbook and Spring Board<br>(access via Clever) <a href="https://my.sisd.net/">https://my.sisd.net/</a><br>Instructional aids available through Learning Express<br><a href="https://sisd.mackinvia.com">https://sisd.mackinvia.com</a>  |
| Process Skills     | <ul style="list-style-type: none"><li>- Use problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution</li><li>- Select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems</li><li>- Communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language</li><li>- Use mathematical relationships to generate solutions and make connections and predictions</li><li>- Analyze mathematical relationships</li><li>- Display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication</li></ul> |



# Algebra II Syllabus

Syllabus  
1<sup>st</sup> Semester

## **Unit 0: Algebra 1 Review**

Operations, functions, exponents and solving equations.

## **Unit 1: Functions**

Relations and Functions, Attributes of Functions, Function Operations and Composition, Inverse Functions

## **Unit 2: Systems of Linear Equations**

Solving Systems Using Table and Graphs, Solving Systems Algebraically, Systems of Inequalities, Systems in Three Variables

## **Unit 3: Absolute Value Equations and Functions**

Absolute Value Equations, Solving Absolute Value Inequalities, Attributes of Absolute Value Functions.

## **Unit 4: Quadratic Functions and Equations**

Attributes and Transformations of Quadratic Functions, Standard Form of a Quadratic Function, Modeling with Quadratic Function, Focus and Directrix of a Parabola (PAP only), Factoring Quadratic Expressions, Quadratic Equations, Completing the Square, The Quadratic Formula, Complex Numbers, Quadratic Inequalities



# Algebra II Syllabus

Syllabus  
2<sup>nd</sup> Semester

## **Unit 5: Polynomials**

Attributes of Polynomials Functions, Adding, Subtracting, and Multiplying Polynomials, Polynomials, Linear Factors, and Zeros, Solving Polynomials Equations, Dividing Polynomials, Theorems About Roots of Polynomials Equations (PAP only),  
Fundamental Theorem of Algebra (PAP only)

## **Unit 6: Rational Functions and Equations**

Inverse Variation, Attributes and Transformations of Reciprocal Functions, Attributes of Rational Functions, Rational Expressions, Adding and Subtracting Rational Expressions, Solving Rational Equations, Simplifying Complex Fractions.

## **Unit 7: Square Root Functions and Equations**

Square Root Functions as Inverses, Attributes of Square Root Functions, Transformations of Square Root Functions, Introduction to Square Root Equations, Solving Square Root Equations

## **Unit 8: Radical Expressions**

Roots and Radical Expressions, Multiplying and Dividing Radical Expressions, Rational Exponents

## **Unit 9: Exponential and Lagorithmic Functions and Equations**

Attributes of Exponential Functions, Transformations of Exponential Functions, Attributes and Transformations of  $f(x) = ex$ , Attributes of Lagorithmic Functions, Properties of Logarithms, Transformations of Lagorithmic Functions, Attributes and Transformations of the Natural Lagorithm Function, Exponential and Lagorithm Equations, Natural Lagorithms

