**Course Name: Honors Algebra II**
**School Year:  2021-2022**

## Course Purpose and Relevance:

In **Algebra II**, students will build on the knowledge and skills for mathematics in Kindergarten-Grade 8 and Algebra I. Students will broaden their knowledge of quadratic functions, exponential functions, and systems of equations. Students will study logarithmic, square root, cubic, cube root, absolute value, rational functions, and their related equations. Students will connect functions to their inverses and associated equations and solutions in both mathematical and real-world situations. In addition, students will extend their knowledge of data analysis and numeric and algebraic methods.

The **process standards** weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a 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. Students will select appropriate tools such as real objects, manipulatives, algorithms, paper and pencil, and technology and techniques such as mental math, estimation, number sense, and generalization and abstraction to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, computer programs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

## Overview of Student Outcomes:
- The student understands that functions have distinct key attributes and understand the relationship between a function and its inverse.
- The student formulates systems of equations and inequalities, use a variety of methods to solve, and analyze reasonableness of solutions.
- The student understands that quadratic and square root functions, equations, and quadratic inequalities can be used to model situations, solve problems, and make predictions.
- The student understands that exponential and logarithmic functions can be used to model situations and solve problems.
- The student understands that cubic, cube root, absolute value and rational functions, equations, and inequalities can be used to model situations, solve problems, and make predictions.
- The student simplifies and performs operations on expressions and to solve equations.
- The student analyzes data, selects appropriate models, writes corresponding functions, and makes predictions.

## Available Support for Student Learning:
Refer to the teacher's Course Syllabus for resources and course specific opportunities. The adopted textbook for Algebra 2 is McGraw Hill Texas Algebra 2. Student textbook and/or digital version are available through the CCISD Student Portal.

## Links to Course TEKS and RESOURCES FOR PARENTS on TEA website:
**Texas Knowledge and Skills for Algebra 2**
**Resources for Parents**

## First Grading Period

Unit 1: Foundation of Linear Functions

Unit 2: Absolute Value Functions, Equations and Inequalities

Unit 3: Linear Systems

## Second Grading Period

Unit 4: Quadratic Functions

Unit 5: Quadratic Equations

**Semester Review and District Exam**

## Third Grading Period

Unit 5: Quadratic Equations

Unit 6: Square Root Functions and Equations

Unit 7: Cube Root Functions and Equations

## Fourth Grading Period

Unit 8: Exponential Functions and Equations

Unit 9: Logarithmic Functions and Equations

Unit 10: Rational Functions and Equations