<u>**Algebra II**</u>
Course Description
2 Semesters; 1 credit
Prerequisite: Algebra I & Geometry

Algebra II introduces students to advanced functions, with a focus on developing a strong conceptual grasp of the expressions that define those functions. Students learn through discovery and application, developing the skills they need to break down complex challenges and demonstrate their knowledge in new situations.Course topics include quadratic equations and functions; polynomial functions; rational expressions and functions; radical expressions and functions; exponential and logarithmic functions; trigonometric functions; modeling with functions; probability and inferential statistics; probability distributions; and sampling distributions and confidence intervals.This course supports all students as they develop computational fluency and deepen conceptual understanding. Students begin each lesson by discovering new concepts through guided instruction, then confirm their understanding in an interactive, feedback-rich environment. Modeling activities equip students with tools for analyzing a variety of real-world scenarios and mathematical ideas. Journaling activities allow students to reason abstractly and quantitatively, construct arguments, critique reasoning, and communicate precisely. Performance tasks prepare students to synthesize their knowledge in novel, real-world scenarios and require that they make sense of multifaceted problems and persevere in solving them.This course is built to state standards. **This course requires: TI-84, TI-83 or TI-83 Plus calculator or equivalent.**

Unit 1: Expressions, Equations and Inequalities
Unit 2: Functions and Relations
Unit 3: Quadratic Functions
Unit 4: Systems of Equations and Inequalities
Unit 5: Polynomial Functions
Unit 6: Semester 1 Exam
Unit 7: Rational Expressions and Functions
Unit 8: Radical Expressions and Functions
Unit 9:Exponential and Logarithmic Functions
Unit 10: Statistical Analysis
Unit 11: Trigonometry
Until 12: Semester 2 Exam