Course Name: Honors Algebra II	
Department: Math	Grade Level(s) 10-12
Duration/Credits: 1 year/ 1.0 credit	Prerequisites: Any Algebra I Course
BOE Approval Date:	Course Code: 2315

Course Description:

This honors level course is designed to clarify and extend algebraic procedures. Topics studied include graphing, analyzing and interpreting functions including polynomial, rational, radical, logarithmic and exponential; systems of linear equations and inequalities, exponents, matrices, and probability and statistics. The student will have the opportunity to pursue Algebra II topics more deeply and extend their thinking through more rigorous and collaborative mathematics concepts and projects.

Course Rationale:

The need to understand and be able to use mathematics in everyday life and in the workplace has never been greater and will continue to increase. Just as the level of mathematics needed for intelligent citizenship has increased, so too has the level of mathematical thinking and problem solving needed in the workplace. Those who can problem solve, think critically, and communicate will have significantly enhanced the opportunities and options for shaping their futures. Mathematical competence opens doors to productive futures. This course allows the student to develop these problem solving, critical thinking, and communication skills within the context of higher level algebraic reasoning.

Course Objectives:

1. The student will extend and use the relationship between rational exponents and radicals and orally justify their reasoning and critique the reasoning of others. (A+ Speaking and Listening)
2. The student will use complex numbers.
3. The student will define and use logarithms in real world contexts.
4. The student will solve and graphically represent equations and inequalities.
5. The student will generate and solve systems of equations and inequalities and produce written explanations of their solutions within the context of a real-life situation. (A+ Writing)
6. The student will perform operations on polynomials and rational expressions.
7. The student will apply and interpret functions in real life situations.
8. The student will create new functions from existing functions and generalize the pattern used.
9. The student will research real world problems and use use functions to model solutions to those problems. (A+ Research)
10. The student will perform operations with matrices.
11. The student will draw inferences from written mathematical situations and justify conclusions. (A+ Reading)
12. The student will fit a researched data set to a normal distribution.
13. The student will defend and justify their solutions and methods and critique the reasoning of others through mathematical discourse.