Algebra 2
2013-2014

Course Description:
Students are reintroduced to the algebraic properties of the real number system, to equations and to inequalities of the first and second degree. Matrices and determinants are introduced to aid in the solution of systems of equations in two and three variables. Much emphasis is placed on factoring and operations with algebraic fractions. Topics of relations and functions are studied. A TI graphing calculator will be utilized in this course.

Course Content:
1. Statistics and Probability
    ▪ Frequency Distribution
    ▪ Histogram
    ▪ Stem-and-Leaf Plot
    ▪ Mean, Median, Mode, and Range
    ▪ Variance and Standard Deviation
    ▪ Fundamental Counting Principle
    ▪ Permutation and Combination
    ▪ Probability of an Event
2. Basic Concepts of Algebra
    ▪ Real Number system
    ▪ Graphing on the Number Line
    ▪ Absolute Value
    ▪ Numerical and Algebraic Expressions
    ▪ Properties of Equality
    ▪ Algebraic Equality Proofs
    ▪ Operations on Signed Numbers
    ▪ Equations in One Variable
    ▪ Literal Equations
    ▪ Word Problem Applications and Estimations
3. Inequalities and Absolute Value
    ▪ Properties of Inequalities
    ▪ Inequality Proofs
    ▪ Solving Inequalities
    ▪ Conjunctions and Disjunctions
    ▪ Absolute Value Equations
    ▪ Absolute Value Inequalities
    ▪ Word Problem Applications
4. Linear Equations and Midpoint
    ▪ Cartesian Coordinate Plane
    ▪ Point Plotting
    ▪ Slopes of Lines
    ▪ Graphing of Lines

- ▪ Derive Equations of Lines
- ▪ Line Relationships
- ▪ Scatter Plots
- ▪ Lines of Best Fit
5. Relations and Functions
    - ▪ Relations
    - ▪ Functions
    - ▪ Function Notation
    - ▪ Graphing of Functions (Quadratic, Absolute Value, Cubic, Exponential)
    - ▪ Transformation of Functions
6. Solving Systems of Linear Equations and Inequalities
    - ▪ Systems of Linear Equations in Two Variables
    - ▪ Systems of Linear Inequalities in Two Variables
    - ▪ Systems of Linear Equations in Three Variables.
    - ▪ Real World Applications
7. Working with Polynomials
    - ▪ Polynomial Terminology
    - ▪ Adding and Subtracting Polynomials
    - ▪ Using the Laws of Exponents to Simplify Polynomials
    - ▪ Multiplying Polynomials
    - ▪ Factoring Polynomials
8. Working with Rational Expressions
    - ▪ Rational Expressions
    - ▪ Complex Rational Expressions
    - ▪ Rational Equations
9. Roots and Radicals
    - ▪ Roots of Numerical and Algebraic Expressions
    - ▪ Radicals
    - ▪ Exponential Expressions containing Negative and Rational Exponents
10. Quadratic Equations
    - ▪ Solving Quadratic Equations by factoring and quadratic formula

Required Textbooks and/or Other Reading/Research Materials
Prentice Hall Algebra 2 help students see math like never before. This blended print and digital curriculum provides an environment where teachers can engage students, teach for understanding, and promote mastery—for success today and through out life. It's a whole new way to look at math.

Prentice Hall Algebra 2 by Prentice Hall. Prentice Hall, 2009.

Course Requirements:
Each student is required to complete all tests, projects and assignments. Failure to do so will affect the student's overall grade.

Grade Components/Assessments:
Grades will be based on a point system that will be converted to overall percentages. The following methods will be used, for the year, to assess and evaluate student performance.
Tests: 50 % - 60 %
Quizzes: 20 % - 25 %
Homework: 20 % - 25 %

Alternative Assessment: 5 % - 10 %
Additional alternative assessments are often included in one of the other three categories above

Each marking period is worth 20% of a student's overall grade. The midterm and final exam are each worth 10% of a student's overall average:

Quarter 1	20%
Quarter 2	20%
Midterm	**10%**
Quarter 3	20%
Quarter 4	20%
Final	**10%**

Required Summer Reading/Assignments:
There is no required Summer Assignments.