

Outline of coursework:

The first semester consists of a review of Algebra II topics in order to prepare for College Algebra.

1st nine weeks:

1. Factoring – trinomials, grouping, perfect squares, cubes, applications
2. Rational Expressions – multiplying, dividing, adding, subtracting, solving
3. Functions and Graphs – domain, range, graphing, variation

2nd nine weeks:

1. Inequalities and Problem Solving – compound inequalities, absolute values, graphing, linear programming
2. Exponents and Radicals – domains, exponent rules, multiplying, dividing, solving, complex numbers
3. Quadratic Functions – completing the square, quadratic formula, applications, graphs, problem solving

College Algebra

3rd nine weeks:

1. Graphing – distance, distance formula, midpoint formula, equations, symmetry, graphical interpretation, circles, lines, applications, functions,
2. Functions – transformations, piecewise, quadratic functions, operations on functions, inverse functions, exponential functions
3. Logarithms – natural exponential functions, logarithmic functions, properties of logarithms

4th nine weeks:

1. Systems of Equations and Inequalities – substitution, elimination, applications, graphing inequalities, linear programming, 3 equations in 3 variables
2. Matrices – echelon form, adding, multiplying matrices, inverses, determinants, Cramer's Rule
3. Sequences, Series and Probability – summations, arithmetic sequences, geometric sequences, binomial theorem, permutations, combinations, probability