NOR✝HGATE
A C A D E M Y

Algebra I Concepts - Course Syllabus

Description:
This course begins with a brief review of what students should already know about linear equations, with a focus on analyzing and explaining the process of solving equations. Students develop a strong foundation in working with linear equations in all forms, extending solution techniques to simple equations with exponents. Students explore functions, including notation, domain and range, multiple representations, and modeling. Through the comparison of linear and exponential functions, students contrast the concepts of additive and multiplicative change. Students then apply what they have learned to linear models of data, analyzing scatterplots and using lines of best fit to apply regression techniques. The course closes with an exploration of rational exponents, quadratic and exponential expressions, and an introduction to non-linear functions, with a heavy emphasis on quadratics.

Textbook: Algebra I Concepts – Joseph G. Williams, B.A. / © Excel Education Systems, Inc.

Course objectives:
Throughout the course, you will meet the following goals:
- Analyze and interpret the structure of expressions and write expressions in equivalent forms to solve problems
- Communicate effectively using graphic, numeric, symbolic, and verbal representations
- Recognize the graph of given data as being linear, quadratic, or exponential
- Solve equations and inequalities in one variable and represent and solve equations and inequalities graphically
- Create and solve equations that describe numbers or relationships
- Model and solve problems with linear systems graphically

Contents:

Semester A
Unit 1: Introduction to Algebra Concepts
Unit 2: Solving Equations
Unit 3: Solving Inequalities
Unit 4: Functions

Semester B
Unit 5: Linear Functions
Unit 6: Systems of Equations
Unit 7: Exponents and Polynomials
Unit 8: Factoring
Unit 9: Quadratic Equations
Unit 10: Probability, Exponentials, Radicals

Grading Scale
A = 90-100%
B = 80-89%
C = 70-79%
D = 60-69%
F = under 59%

Grade Weighting
Quizzes…………………… 70%
Final Exam ………………. 30%
100%