

**COURSE SYLLABUS**

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<b>Course Title:</b>	<b>Algebra I</b>
<b>Minutes per week:</b>	<b>250</b>
<b>Course Credit:</b>	<b>2 Semesters (10 units)</b>
<b>Grade Level:</b>	<b>9</b>

**A. COURSE DESCRIPTION**

This course is a formal development of the algebraic skills, concepts and language necessary for students who will take a geometry course and other advanced college preparatory courses. Students will study the real number system, variables and mathematical sentences, equations, problem solving, inequalities, factoring, polynomials, graphs, functions, variations and quadratic equations.

**B. BEHAVIORAL OBJECTIVES**

Students will accomplish the following requirements:

- Perform basic mathematical functions using positive and negative real numbers
- Solve and graph linear equations and inequalities
- Perform basic mathematical functions and factor polynomials
- Solve quadratic and rational equations
- Perform square root and rational operations

**C. COURSE CONTENT**

**1. Introduction to Algebra**

Variables; algebraic symbols and expressions; evaluation of expression and formulas; translation from words to symbols

**2. Real Numbers**

Integers, rational numbers, real numbers, and the properties of each; number line; addition and subtraction, multiplication and division; absolute value

**3. Linear Equations** – Solutions and application (i.e. word problems) of linear equations; geometric and algebraic applications

**4. Polynomials**

Addition, subtraction, multiplication and division of polynomials; factoring techniques

**5. Rational Expression**

Operations; rational equations (including proportions) and applications

6. **Linear Inequalities**  
Solutions and problem solving; compound inequalities involving “and” & “or”
7. **Graphs of Linear Equations and Inequalities**  
Concepts of slope, y – intercept, parallelism and perpendicularity
8. **Square Roots and Radicals**  
Operations & simplifications; algebraic expressions and equations using radicals; distance formulas
9. **Quadratic Equations**  
Solutions (by factoring, completing the square, and using a formula) and applications of quadratic equations

#### **D. METHODS OF INSTRUCTION**

1. Lecture
2. Desk chalkboards

#### **E. METHODS OF EVALUATION**

1. Homework assignments
2. Quizzes
3. Chapter tests

#### **F. BIBLICAL INTEGRATION**

1. God wrote the universe using the language of mathematics
2. God’s universe takes many forms
3. Mathematics help explain God’s creation
4. God communicates to us through mathematics
5. God is a god of logic and order
6. God’s universe can be explained using math

#### **G. TEXT**

*Algebra, (First Course), Scott Foresman Publishers*