

## Course Outline for Algebra One

### I. **Course Description**

This course is designed to aid the student in understanding the basic concepts of algebra, to help the student acquire important algebraic skills and to cover concepts from the solving of basic equations to the solving of problems with three or more placeholders. It will cover important mathematical terms as well as procedures to problem solve.

### II. **Goals**

1. To appreciate the hand of God in His design of and care for the universe.
2. Become equipped to meet college level entrance requirements for algebra.
3. Solve problems ranging from everyday applications to applications in the physical and biological sciences.

### III. **Course Outline**

1. Recognize mathematical parts of speech, expressions and translation of mathematical symbols.
2. Investigate the development of our number system, fraction forms, decimal forms, composites and factoring including least common multiple and greatest common factor.
3. Understand order of and properties of operations with special numbers, with fractions, with decimals, and with signed numbers.
4. Solve equations according to the order of numbers and the number line. Investigate properties of equality and inequality.
5. Evaluate mathematical models of sets and functions.
6. Solve problems with first degree relations with one placeholder. Practice making zeros, making ones, and combinations.
7. Practice grouping symbols. Recognize like terms on the same side, placeholders on both sides and combinations.
8. Explore special cases of equations and inequalities including no solution and infinite number of solutions.
9. Solve compound sentences with "and" and with "or".
10. Recognize absolute value equal to or less than a positive number. Recognize absolute value greater than a non-negative number.
11. Recognize general strategy and set up to problem solving using one placeholder. Practice number, consecutive integer, geometric, motion and percent problems.
12. Explore solution sets for equations and inequalities. Introduce graphing terminology, techniques and intercepts.
13. Find relations for given solution sets with given slope and y-intercept, given slope and one solution, given two solutions, given parallel or

perpendicular lines.

14. Find graphic solutions for equations and inequalities. Find solutions for equations by elimination by addition and elimination by substitution.
15. Explore special cases of solution sets for systems - no solution inconsistent, and infinite number of solutions dependent.
16. Problem solve using two placeholders - general strategy and set up, number problems, age problems, geometric figure problems, motion and percent problems, and value or mixture problems.
17. Practice first degree relations with three or more placeholders - one and two open sentences and systems of three or more open sentences. Problem solve using three or more placeholders in number, age, geometric, value and mixture problems.

#### IV. **Instructional Materials**

Algebra: A Complete Course, Second Edition, VideoText Interactive, 2000

##### **Course Schedule**

First Semester

1. Module A - Module B through Lesson 15
2. Quizzes and tests to correspond with lessons

Second Semester

1. Module B Lesson 16- Module C
2. Quizzes and tests to correspond with lessons

#### V. **Teaching Methods**

Daily Video Lesson

Daily written textbook lessons

#### VI. **Evaluation**

A. Components

1. Quizzes
2. Tests

B. Grading Scale

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