

OHLONE COLLEGE
Ohlone Community College District
OFFICIAL COURSE OUTLINE

I. Description of Course:

1. **Department/Course:** MATH - 151

2. **Title:** Algebra I

3. **Cross Reference:**

4. **Units:** 5

Lec Hrs: 5

Lab Hrs:

Tot Hrs: 90.00

5. **Repeatability:** No

6. **Grade Options:** Grade Only (GR)

7. **Degree/Applicability:**

Credit, Not Degree Applicable (C)

8. **General Education:**

9. **Field Trips:** Not Required

10. **Requisites:**

Prerequisite

MATH 190 Basic Mathematics or
placement evaluation

12. Catalog Description:

This course includes the study of operations on algebraic expressions, linear equations and inequalities, graphs of linear equations, systems of equations, exponents, polynomials, factoring, and rational expressions.

13. Class Schedule Description:

Algebraic expressions, equations, inequalities, graphs, systems of equations, exponents, polynomials, and factoring.

14. Counselor Information:

This is the first course in algebra. It is intended for the student who has taken a year or more of high school algebra or who has a mastery of basic math skills and a knowledge of fundamental operations with signed numbers. A student not possessing these skills should take our variable unit basic math course.

II. Student Learning Outcomes

The student will:

1. Demonstrate basic skills in algebra up through quadratic equations through tests and problem solving.
2. Set up stated problems algebraically and solve the resulting equations.
3. Solve problems presented via formulas or procedures.
4. Graph linear equations.
5. Solve systems of linear equations using graphing, substitution, and elimination methods.
6. Simplify exponential expressions with integer exponents.
7. Identify polynomials and perform operations with polynomials.
8. Factor polynomials using grouping, FOIL, special products formulas, and trial and error methods.
9. Solve quadratic equations using factoring and their applications.
10. Simplify rational expressions and complex fractions and solve applications of rational equations.

III. Course Outline:

- A. Real Numbers
 - 1. Real numbers and their properties
 - 2. Addition and subtraction and absolute value
 - 3. Multiplication, division, and order of operation
- B. Linear Equations and Inequalities
 - 1. First degree equations
 - 2. First degree inequalities
 - 3. Formulas and applications
- C. Cartesian Coordinate System
 - 1. Graphs of linear equations and inequalities
 - 2. Slope and equations of lines
 - 3. Systems of equations and inequalities
 - 4. Applications
- D. Exponents and Polynomials
 - 1. Laws of exponents
 - 2. Sums and differences of polynomials
 - 3. Multiplication of polynomials
 - 4. Division of polynomials
 - 5. Factoring
 - 6. Second degree equations
 - 7. Applications
- E. Rational Expressions
 - 1. Multiplication and division of rational expressions
 - 2. Addition and subtraction of rational expressions
 - 3. Complex fractions
 - 4. Equations with rational expressions
 - 5. Applications

IV. Course Assignments:

- A. Reading Assignments
 - 1. Selected material assigned by instructor
- B. Projects, Activities, and other Assignments
 - 1. Selected homework from course outline
- C. Writing Assignments

V. Methods of Evaluation:

- A. Tests
- B. Quizzes
- C. Homework

VI. Methods of Instruction:

- A. Lecture
- B. Discussion
- C. Demonstration
- D. Audiovisual
- E. Seminar
- F. Self-Paced
- G. Independent Study
- H. Preceptoring

I. Computer Assisted Instruction

J. Collaborative Learning

VII. Textbooks:

Recommended

1. Bittenger, Ellenbogen, Johnson *Elementary and Intermediate Algebra, Volume I* 4th edition Edition, Pearson Custom Publishing, 2005 ISBN: 0536-32656-8
2. Hawkes Learning Systems *Introductory Algebra (Software)* 1st Edition, Hawkes Learning Systems, 2006 ISBN: 0-918091-26-8

Supplemental

VIII. Supplies:

A. Graph paper

CID 2577