Non-Degree Applicable

Glendale Community College
February, 2002
Revised May, 2011

COURSE OUTLINE

Mathematics 245A
Elementary Algebra I

I. Catalog Statement

Mathematics 245A is the first part of a self-paced multimedia course. Math 245AB collectively is equivalent to the first course of a two-semester sequence of Elementary Algebra. Topics include signed numbers, solutions to linear equations, algebraic manipulations, exponents, polynomials, graphing linear equations, and solving linear systems. Math 245AB collectively is equivalent to Math 145.

Units – 1.0
Total Laboratory Hours – 6.0
(Faculty Laboratory Hours 3.0 + Student Laboratory Hours 3.0 = 6.0 Total Hours)

Prerequisite: Placement is based on a composite of test scores and academic background or satisfactory completion of Mathematics 155, or 255D, or 4 units of Mathematics 255.

Note: This course may not be taken for credit by students who have completed Mathematics 141 or 145. A maximum of 2 units of credit will be granted for Mathematics 145 and 245.

II. Course Entry Expectations

Skills Level Ranges: Reading 5; Writing 3; Listening-Speaking 4; Math 2

Prior to enrolling in the course, the student should be able to:

1. add, subtract, multiply, and divide whole numbers;
2. add, subtract, multiply, and divide fractions;
3. convert fractions to decimals;
4. add, subtract, multiply, and divide decimals;
5. convert decimals to percents;
6. convert fractions to percents;
7. find a percent of a number and what percent one number is of another;
8. add, subtract, multiply, and divide signed numbers;
9. use the correct order of operation;
10. use a calculator to perform arithmetic operations;
11. evaluate expressions;
12. add and subtract expressions;
13. find area and perimeter of squares, rectangles, triangles, and circles;
14. solve equations using the addition property of equality;
15. solve equations using the multiplication property of equality;
16. solve first degree applications.

III. Course Exit Standards

Upon successful completion of the coursework, the student will be able to:

1. add, subtract, multiply, and divide real numbers;
2. solve linear equations and inequalities;
3. solve absolute value equations and inequalities;
4. simplify exponential expressions;
5. add, subtract, multiply, and divide polynomials;
6. graph linear equations and inequalities;
7. find the equation of the line passing through 2 points;
8. solve linear systems using 3 different methods;
9. use algebra to solve applied problems;
10. use function notation.

IV. Course Content **Total Contact Hours = 96**

A. Review of Real Numbers
   1. Notation and symbols
   2. Adding and subtracting real numbers
   3. Properties of real numbers
   4. Multiplying and dividing real numbers
   5. Subsets of the real numbers
   6. Addition and subtraction with fractions

B. Linear Equations and Inequalities
   1. Simplifying expressions
   2. Addition property of equality
   3. Multiplication property of equality
   4. Solving linear equations
   5. Formulas
   6. Applications
   7. Linear and compound inequalities
   8. Absolute value equations and inequalities

C. Linear Equations and Inequalities in Two Variables
   1. Graphing ordered pairs
   2. Solutions to linear equations in two variables
   3. Graphing linear equations in two variables
   4. Graphing using intercepts
   5. The slope of a line
   6. Finding the equation of a line

V. Methods of Presentation

The following instructional methodologies may be used in the course:

1. weekly meetings with instructor;
2. video instruction;

3. computer tutorials;
4. personalized tutoring;
5. small group work/discussion.

VI. Assignments and Methods of Evaluation

1. A cumulative final exam at the end of each course/unit.
2. Two to three chapter tests will be given per course/unit.
3. Short mastery quizzes may be given online.
4. Homework may be collected.
5. Exercise on the computer may be assigned.

VII. Textbook

McKeague, C. P., Elementary Algebra, Custom Edition for GCC, 8th Edition.
Mason: Cengage Learning, 2009.
12th Grade Textbook Reading Level. ISBN: 1-4266-3357-2.

VIII. Student Learning Outcomes

1. Students will simplify polynomial expressions.
2. Students will solve equations and inequalities (linear, absolute value, systems).
3. Students will graph linear functions.
4. Students will use mathematical models to solve application problems (linear, systems of equations).