Non-Degree Applicable

Glendale Community College
February, 2002
Revised May, 2011

COURSE OUTLINE

Mathematics 246B
Elementary Algebra II

I. Catalog Statement

Mathematics 246B is the second part of a self-paced multimedia course. Math 246AB collectively is equivalent to the second course of a two-semester sequence of Elementary Algebra. Topics include the fundamental operations of algebra including factoring, rational expressions, roots and radicals, and quadratic equations. Math 246AB collectively is equivalent to Math 146.

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

Prerequisite: Mathematics 246A or 1 unit of Mathematics 246.

Note: This course may not be taken for credit by students who have completed Mathematics 141 or 146. A maximum of 4 units of credit will be granted for Mathematics 141, 145, 146, 245, and 246.

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 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 a line;
8. solve linear systems;
9. use algebra to solve applied problems;
10. use function notation.

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;
11. factor polynomials;
12. add, subtract, multiply, and divide algebraic fractions;
13. solve rational equations;
14. use algebra to solve applied problems;
15. use the properties of radicals to simplify radicals;
16. add, subtract, multiply, and divide radicals;
17. solve radical equations;
18. solve quadratic equations by factoring, completing the square, and using the quadratic formula;
19. graph quadratic functions and circles;
20. use the distance formula to find the distance between two points.

IV. Course Content — Total Contact Hours = 96

A. Roots and Radicals
   1. Definitions and common roots
   2. Properties of radicals
   3. Simplified form for radicals
   4. Addition and subtraction of radical expressions
   5. Multiplication and division of radicals
   6. Equations involving radicals

B. More Quadratic Equations
   1. Solving using the square root method
   2. Solving by completing the square
   3. The quadratic formula
   4. Complex numbers
   5. Complex solutions to quadratic equations
   6. Graphing parabolas
   7. Distance formula and graphing circles

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 various algebraic expressions (rational, radical).
2. Students will solve equations and inequalities (rational, radical, quadratic).
3. Students will graph various functions and relations (quadratic, circles).
4. Students will use mathematical models to solve application problems (quadratic, rational, radical).
5. Students will factor polynomials.