SAN DIEGO COMMUNITY COLLEGE DISTRICT
CONTINUING EDUCATION
COURSE OUTLINE

SECTION I

SUBJECT AREA AND COURSE NUMBER

HSDP 507

COURSE TITLE

ALGEBRA 1-2, SEMESTER 2

TYPE COURSE

NON-FEE   HSDP

CATALOG COURSE DESCRIPTION

This is the second semester of a two semester course covering the fundamental concepts of Algebra. Through the study of Algebra a student develops an understanding of the symbolic language of mathematics and the sciences. Algebraic skills and concepts are developed and used in a wide variety of problem solving situations. (FT)

LECTURE HOURS   LABORATORY HOURS

    90

ADVISORY

Algebra 1-2, Semester 1, or equivalent

RECOMMENDED SKILL LEVEL

Students will have acquired the skills taught in Algebra 1-2, Semester 1

INSTITUTIONAL STUDENT LEARNING OUTCOMES

1. Social Responsibility
   SDCE students demonstrate interpersonal skills by learning and working cooperatively in a diverse environment.
2. Effective Communication
   SDCE students demonstrate effective communication skills.

INSTITUTIONAL STUDENT LEARNING OUTCOMES (CONTINUED)

3. Critical Thinking
    SDCE students critically process information, make decisions, and solve problems independently or cooperatively.
4. Personal and Professional Development
    SDCE students pursue short term and life-long learning goals, mastering necessary skills and using resource management and self advocacy skills to cope with changing situations in their lives.

COURSE GOALS

Upon successful completion of this course, the students will obtain those skills necessary to satisfy the California State Mathematics Content Standards for Algebra 1. Among the skills to be attained are: multiplying and dividing rational expressions, sketching graphs of quadratic functions, solving equations by graphing, solving quadratic equations by factoring, solving quadratic equations by completing the square, proving theorems by using algebraic properties, graphing linear equations and determining the number of solution of a linear system, solving rational equations, using scientific notation, using direct variation and inverse variation models, solving and graphing absolute value equations and inequalities, graphing exponential functions, applying Pythagorean Theorem, solving compound inequalities, using the distance and midpoint formulae.

COURSE OBJECTIVES

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

1. Add, subtract, multiply, and divide rational expressions and functions.
2. Graph quadratic equations.
3. Solve quadratic equations by factoring or completing the square.
4. Demonstrate knowledge of the quadratic formula.
5. Use the quadratic formula to find roots of a second degree polynomial and solve quadratic equations.
6. Apply quadratic equations to physical problems.
7. Solve a system of two linear equations in two variables algebraically and interpret graphically.
8. Apply algebraic techniques to solve rate, work, and percent mixture problems.

SECTION II

COURSE CONTENT AND SCOPE

1. Simplifying Rational Expressions
2. Graphing Quadratics
3. Completing the Square
4. Quadratic Formula
5. Linear Systems, Graphing, Substitution, and Linear Combination
6. Rational Expressions (Addition and Subtraction) and Application

COURSE CONTENT AND SCOPE (CONTINUED)

7. Direct and Inverse Variation
8. Absolute Value Equations
9. Exponential Growth and Decay
10. Pythagorean Theorem

APPROPRIATE READINGS

Text reading and supplemental readings.

WRITING ASSIGNMENTS

Teachers may require students to maintain journals and/or portfolios.

OUTSIDE ASSIGNMENTS

Students will be expected to spend an average of 30 minutes of outside study for each class.

1. Completion of assigned problem sets.
2. Studying textbook material.
3. Collecting information and data to be used in exploring mathematical concepts (including use of internet).
4. Preparing for unit examinations.

APPROPRIATE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING

Students will be required to select and apply appropriate problem solving strategies to solve verbal problems.

EVALUATION

Student performance assessment will be based upon, but not necessarily be limited to, periodic quizzes, unit examinations, completion of written assignments, and attendance and participation in class.

Upon successful completion of each individual course a Certificate of Course Completion will be issued. Upon successful completion of all courses included in the program a Certificate of Program Completion will be issued.

METHOD OF INSTRUCTION

Lectures, instructor guided discussions, individual tutoring, and cooperative learning in peer groups will be used to assist the students in successfully completing their work. The use of technology will be encouraged and fostered. This course, or sections of this course, may be offered through distance education.

TEXTS AND SUPPLIES

Algebra 1: Concepts and Skills, McDougal Littell, current edition
Algebra 1: Concepts and Skills supplemental materials McDougal Littell
Secondary Math: Focus on Algebra, Addison-Wesley, current edition

PREPARED BY: Jerry Sullivan   DATE: February 14, 1996

DATA REVISED BY: GARY GLECKMAN   DATE: FEBRUARY 11, 2007

DATA REVISED BY Instructional Services/SLO's Added   DATE December 20, 2013

Instructors must meet all requirements stated in Policy 3100 (Student Rights, Responsibilities and Administrative Due Process), and the Attendance Policy set forth in the Continuing Education Catalog.

REFERENCES:

San Diego Community College District Policy 3100
California Community Colleges, Title 5, Section 55002
Continuing Education Catalog