

SAN DIEGO COMMUNITY COLLEGE DISTRICT
CONTINUING EDUCATION
COURSE OUTLINE

SECTION I

SUBJECT AREA AND COURSE NUMBER

HSDP 467A

COURSE TITLE

UNIFYING ALGEBRA/GEOMETRY 1

TYPE COURSE

NON FEE

HSDP

CATALOG COURSE DESCRIPTION

Semester one of a two semester course is designed to review and strengthen the concepts taught in both Algebra 1-2 and (Geometry 1-2). After completing the two courses, students will be prepared to enroll in Intermediate Algebra 1-2. In algebra, students develop an understanding of the symbolic language of mathematics and the sciences as well as algebraic skills and concepts to be used in a wide variety of problem-solving situations. In geometry students will learn to construct formal, logical arguments and proofs in geometric settings and problems. (FT)

LECTURE HOURS

90

LABORATORY HOURS

ADVISORY

1st year Algebra or Algebra Explorations 9 and Geometry.

RECOMMENDED SKILL LEVEL

Students should have proficiency in basic mathematics and pre-algebra skills.

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

Students will obtain skills which will prepare them for Intermediate Algebra 1-2.

COURSE OBJECTIVES

At the completion of the course students will have demonstrated, through a variety of measures, an ability to meet the following state content standards in mathematics (Algebra 1 and Geometry):

1. Identify and use arithmetic properties of subsets of integers and rational, irrational, and real numbers, including closure properties for the four basic arithmetic operations where applicable.
2. Understand and use such operations as taking the opposite, finding the reciprocal, taking a root, and raising to a fractional power. Understand and use the rules of exponents.
3. Solve equations and inequalities involving absolute values.
4. Simplify expressions before solving linear equations and inequalities in one variable.
5. Solve multi-step problems, including word problems, involving linear equations and linear inequalities in one variable, and provide justification for each step.
6. Graph a linear equation and compute the x- and y- intercepts. Also be able to sketch the region defined by linear inequality.
7. Verify that a point lies on a line, given an equation of the line. Derive linear equations by using the point-slope formula.
8. Understand the concepts of parallel lines and perpendicular lines and how those slopes are related. Find the equation of a line perpendicular to a given line that passes through a given point.
9. Solve a system of two linear equations in two variables algebraically and are able to interpret the answer graphically. Solve a system of two linear inequalities in two variables and sketch the solution sets.
10. Add, subtract, multiply and divide rational expressions and functions. Solve both computationally and conceptually challenging problems by using these techniques.
11. Understand the concepts of a relation and a function, determine whether a given relation defines a function, and give pertinent information about given relations and functions.
12. Determine the domain of independent variables and the range of dependent variables defined by a graph, a set of ordered pairs or a symbolic expression.
13. Determine whether a relation defined by a graph, a set of ordered pairs, or a symbolic expression is a function and justify conclusion.

COURSE OBJECTIVES (CONTINUED)

14. Use and know simple aspects of a logical argument.
15. Construct and judge the validity of a logical argument and give counterexamples to disprove a statement.
16. Know, derive, and solve problems involving the perimeter, circumference, area, volume, lateral area, and surface area of common geometric figures.
17. Compute the volumes and surface areas of prisms, pyramids, cylinders, cones, and spheres; and commit to memory the formulas for prisms, pyramids, and cylinders.
18. Compute areas of polygons, including rectangles, scalene triangles, equilateral triangles, rhombi, parallelograms, and trapezoids.
19. Determine how changes in dimensions affect the perimeter, area, and volume of common geometric figures and solids.

SECTION II

COURSE CONTENT AND SCOPE

1. Essential Algebra and Statistics
2. Essential Mathematics
3. Linear Systems of Equations
4. Geometry and Reasoning
5. Triangles, Quadrilaterals and Other Polygons
6. Measurement

APPROPRIATE READINGS

Text such as:

MathMatters3: An Integrated Program 2006, Glencoe, McGraw Hill
Supplemental learning packets

WRITING ASSIGNMENTS

Students will demonstrate competency of the above objectives through successful completion of packet work and exams.

OUTSIDE ASSIGNMENTS

Supplemental work as determined by the individual needs (based upon classroom performance).

EVALUATION

Students will be given chapter exams, as well as midterm and final exam. Sixty percent or higher required to achieve competency.

METHOD OF INSTRUCTION

Lecture, individual and group activity, including cooperative learning, field trips. Supplemental computer work may be used.

TEXTS AND SUPPLIES

Text:

MathMatters3: An Integrated Program, Glencoe, McGraw Hill
Supplemental Materials from MathMatters3
SkillsTutor (internet program)

PREPARED BY: Gary Gleckman DATE: January 23, 2008

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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