

SAN DIEGO COMMUNITY COLLEGE DISTRICT
CONTINUING EDUCATION
COURSE OUTLINE

SECTION 1

SUBJECT AREA AND COURSE NUMBER

HSDP 500

COURSE TITLE

PRE-ALGEBRA, SEMESTER 1

TYPE COURSE

NON FEE

HSDP

CATALOG COURSE DESCRIPTION

This is the first semester of a two semester course designed to prepare the student for success in a college preparatory sequence of mathematics courses. The student masters pre algebraic skills and concepts as a foundation for Algebra 1. (FT)

LECTURE HOURS

90

LABORATORY HOURS

ADVISORY

NONE

RECOMMENDED SKILL LEVELS

Ability to perform arithmetic operations with whole numbers, fractions, and decimals.

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

By the end of this course of Pre Algebra, the students will: Know the properties of, and compute with rational numbers by manipulating numbers and equations. Know and use different representations of fractional numbers and are proficient at changing from one to another. Understand and use factoring of numerators and denominators and properties of exponents. Increase their facility with ratio and proportion, compute percents of increase and decrease, and compute simple and compound interest. Solve simple linear functions and inequalities over the rational numbers. Make conversions between different units of measurement. Know and use various forms of displays for data sets.

COURSE OBJECTIVES

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

1. Demonstrate knowledge of the properties of, and compute with, rational numbers expressed in a variety of forms.
2. Use exponents, powers, and roots and use exponents in working with fractions.
3. Express quantitative relationships by using algebraic terminology, expressions, equations, inequalities, and graphs.
4. Interpret and evaluate expressions involving integer powers and simple roots.
5. Solve simple linear equations and inequalities over the rational numbers.
6. Collect, organize, and represent data sets that have one or more variables and identify relationships among variables within a data set.
7. Make decision about how to approach problems.
8. Use strategies, skills, and concepts in finding solutions.
9. Determine a solution is complete and move beyond a particular problem by generalizing to other situations.

SECTION II

COURSE CONTENT AND SCOPE

1. Data Analysis:

- 1.1. Make decisions about how to approach problems and use strategies and skills in finding solutions
- 1.2. Collect, organize and represent data sets that have one or more variables and identify relationships among variables within a data set

COURSE CONTENT AND SCOPE (CONTINUED)

- 1.3. Identify and create various forms of display for data sets, including stem-and-leaf or box and whisker plots
- 1.4. Understand the meaning of, and be able to compute the minimum, the lower quartile the median, the upper quartile, and the maximum of a data set
2. One Step Equations and Inequalities
 - 2.1. Use variables and appropriate operations to write an expression, equation, inequality, or a system of equations or inequalities that represent a verbal description
 - 2.2. Simplify numerical expressions by applying properties of rational numbers and justify the process used
 - 2.3. Use algebraic terminology correctly
 - 2.4. Solve two step linear equations and inequalities in one variable over the rational numbers, interpret the solution/s in the context from which they arose, and verify the reasonableness of the results
3. Decimals and Equations
 - 3.1. Add, subtract, multiply, and divide rational numbers and take positive rational numbers to whole number powers
 - 3.2. Use order of operations to evaluate algebraic expressions
 - 3.3. Compare measures in the metric system
 - 3.4. Use estimation to verify addition, subtraction, multiplication and division calculations
 - 3.5. Evaluate the reasonableness of the solution in the context of the original situation
4. Factors, Fractions, and Exponents
 - 4.1. Compare rational numbers in scientific notation
 - 4.2. Take integers to whole number powers
 - 4.3. Multiply and divide powers with the same base
 - 4.4. Multiply, divide, and simplify rational numbers by using exponent rules
 - 4.5. Interpret the absolute value of rational numbers

APPROPRIATE READINGS

NONE

WRITING ASSIGNMENTS

NONE

OUTSIDE ASSIGNMENTS

Students are expected to spend an average of 30 minutes of outside study for each class lesson. Assignments may include, but not necessarily limited to:

1. Completion of assigned problem sets.
2. Study textbook material.
3. Preparing for unit examinations.
4. Preparing research findings (using internet or other sources).

APPROPRIATE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING

Students will be required to select and apply appropriate problem solving strategies to solve verbal problems, either individually or with a group.

EVALUATION

Student performance assessment will be based upon, but not necessarily 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 assist the students in successfully completing their work. Individual work packets will be provided to the students to facilitate small group and individual, self-paced work. Manipulatives may be used to explore mathematical concepts. This course, or sections of this course, may be offered through distance education.

TEXTS AND SUPPLIES

Pre-Algebra California Edition, Prentice Hall, current edition
Pre Algebra: A Transition to Algebra, Glencoe, current edition
Teacher's Guide and Student Work Packets, San Diego City Schools
Mathematical Connections: A Bridge to Algebra and Geometry, Gardella, Houghton, Mifflin
SkillsTutor software

PREPARED BY: JERRY SULLIVAN DATE: AUGUST 28, 1995

DATE REVISED: BY GARY GLECKMAN DATE: FEBRUARY 9, 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