

SYLLABUS

COURSE # AND TITLE: Math 095, Pre-Algebra

OF CREDITS: 4 (3+2P)

CATALOG DESCRIPTION:

Instructs the student on the basic operations of arithmetic applied to whole numbers, integers, fractions and decimals. Topics include measurement conversions, scientific notation, percents, ratios and proportions, basic geometry, formulas and the introduction of variable expressions and linear equations.

Semester Offered: Fall, Spring, Summer

Prerequisites: ACCUPLACER score of 26 - 65 or a Pass of MATH 050

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will....

<i>Learn</i>	<i>Students will actively and independently acquire, apply and adapt skills and knowledge to develop expertise and a broader understanding of the world as lifelong learners.</i>
<i>Think</i>	<i>Students will think analytically and creatively to explore ideas, make connections, draw conclusions, and solve problems.</i>
<i>Communicate</i>	<i>Students will exchange ideas and information with clarity and originality in multiple contexts.</i>
<i>Integrate</i>	<i>Students will demonstrate proficiency in the use of technologies in the broadest sense related to their field of study.</i>
<i>Act</i>	<i>Students will act purposefully, reflectively, and respectfully in diverse and complex environments.</i>

GENERAL LEARNING OBJECTIVES

Upon completion of this course, the student should understand:

- 1.) Real Numbers
- 2.) Geometry and Measurement
- 3.) Ratio, Proportion and Percent
- 4.) Calculator Usage

SPECIFIC LEARNING OUTCOMES

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

- 1.1 interpret data in tables and graphs (bar and pie)
- 1.2 develop verbal descriptions of data
- 1.3 perform operations (addition, subtraction, multiplication, division and exponentiation) with decimals whole numbers, signed numbers and fractions
- 1.4 find the prime factorization of any 3-digit number
- 1.5 find the least common multiple and greatest common factor of any set of numbers

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- 1.6 recognize when and how to estimate and approximate whole numbers, fractions and decimals to approximate values
- 1.7 correctly apply the order of operations to any set of numbers
- 1.8 know the commutative, associative and distributive laws
- 1.9 manipulate simple algebraic expressions and solve elementary equations
- 1.10 explain the advantages of standard numerals and scientific notation
- 1.11 convert between standard and scientific notation, perform arithmetic operations on numbers written and scientific notation
- 1.12 truncate and round numbers
- 1.13 locate points corresponding to any number on the real number line
- 1.14 apply algebraic rules to expressions in exponential forms
- 1.15 recognize when to estimate, approximate or compute exact values
- 1.16 know and apply the rules for simplifying expressions

- 2.1 articulate the significance of and need for units of measurement
- 2.2 work with both metric and US units of measurement, including performing conversions within each system and from one system to the other
- 2.3 calculate the perimeter of a polygon or circumference of a circle
- 2.4 explain the concepts of points, lines, planes, angles, parallel and perpendicular lines to include units of measure
- 2.5 measure angles
- 2.6 recognize and name the various types of triangles according to their side and angle measurement
- 2.7 recognize and name the various types of polygons
- 2.8 find the area, volume, and surface area of various two and three-dimensional figures to include units of measure
- 2.9 calculate, use and simplify squares and square units
- 2.10 articulate the significance of and wide variety of uses of the Pythagorean Theorem and demonstrate the ability to use the Pythagorean Theorem
- 2.11 know the value of pi and what it represents

- 3.1 set ratios and understand what they represent
- 3.2 calculate rates and unit pricing
- 3.3 set up and solve proportions, including similar triangles
- 3.4 set up and solve variation problems
- 3.5 know how to compute percents, convert numbers to percents and percents to numbers
- 3.6 model applications requiring percents
- 3.7 calculate percents of change
- 3.8 calculate discounts, commissions and simple interest

- 4.1 using the calculator, perform operations involving order of operations agreement, exponentiation and roots of numbers
- 4.2 using the calculator, perform operations with whole numbers, fractions and decimals

Additional specific requirements of the course: A Basic Scientific calculator is required; however scientific calculators will not be allowed on certain exams.

Dean, School of Science:



Date: 5/2/06

A current syllabus must be on file in the dean's office for every course being taught during a given semester.