SYLLABUS

COURSE # AND TITLE: Math 096, Introductory Algebra **# OF CREDITS:** 4 (3+2P)

CATALOG DESCRIPTION:

Instructs students in the knowledge of algebra involving linear content; equations, functions and inequalities in one variable and two variables. This course demonstrates simplifying and solving methods. Topics such as expressions, equations, functions, exponents, two and three-dimensional geometric shapes, linear systems, polynomials, and factoring are also introduced.

Semester Offered: Fall, Spring, Summer
Prerequisites: ACCUPLACER score of 66 – 120 Arithmetic or Grade of "C" or better in Math 095

Common Student Learning Outcomes *Upon successful completion of San Juan College programs and degrees, the student will....*	
Learn	*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.*
Think	*Students will think analytically and creatively to explore ideas, make connections, draw conclusions, and solve problems.*
Communicate	*Students will exchange ideas and information with clarity and originality in multiple contexts.*
Integrate	*Students will demonstrate proficiency in the use of technologies in the broadest sense related to their field of study.*
Act	*Students will act purposefully, reflectively, and respectfully in diverse and complex environments.*

GENERAL LEARNING OBJECTIVES:

Upon completion of this course, the student should understand:

1.) Algebraic Expressions and Equations
2.) Equations, Inequalities and Problem Solving
3.) Graphs and Functions
4.) Solving Systems of Linear Equations
5.) Exponents and Polynomials
6.) Factoring Polynomials

SPECIFIC LEARNING OUTCOMES:

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

1.1 translate a verbal/written model to an algebraic model
1.2 evaluate algebraic expressions
1.3 manipulate algebraic expressions using commutative, associative, and distributive laws
1.4 add, subtract, multiply, and divide real numbers

1.5 define absolute value geometrically and algebraically
1.6 simplify algebraic expressions using the order of operations
1.7 perform operations on exponential expressions

2.1 solve linear equations
2.2 manipulate algebraic formulas
2.3 solve real-world percent problems
2.4 solve word problems using linear equations
2.5 graph linear inequalities
2.6 solve linear inequalities and describe the solution set graphically and with interval notation
2.7 translate and solve word problems using linear inequalities

3.1 analyze graphs and tables
3.2 identify the components of the rectangular coordinate system
3.3 plot ordered pairs
3.4 graph linear equations
3.5 visualize and compute rates and slopes from graphical, numerical, and algebraic representations
3.6 know the standard, point-slope, and slope-intercept representations of a line
3.7 recognize and convert linear functions from numerical, graphical, and algebraic representations
3.8 identify functions from multiple representations and determine their domain and range

4.1 solve systems of equations in two unknowns by algebraic methods
4.2 solve systems of equations in three unknowns by algebraic methods
4.3 solve word problems using systems of equations

5.1 simplify exponential expressions using the rules of exponents
5.2 identify coefficients, terms, factors, and degrees of polynomials
5.3 add, subtract, multiply and divide polynomials
5.4 use rules for special products
5.5 convert numbers between standard and scientific notation
5.6 perform operations using scientific notation

6.1 factor monomials
6.2 factor trinomials
6.3 factor perfect-square trinomials and difference of squares
6.4 factor a sum or difference of cubes
6.5 solve polynomial equations by factoring
6.6 solve word problems involving polynomials

Additional specific requirements of the course: A scientific calculator is required. Graphing calculators are not allowed on exams or the department final.

Dean of School of Mathematics_____ **Date:** 8/18/08

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