



SYLLABUS

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.

Prerequisites: Accuplacer score of 66 – 120 Arithmetic or grade of “C” or better in MATH 095

Semester Offered: Fall, Spring and Summer

Common Student Learning Outcomes

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

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

Course Learning Outcomes

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

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 linear equations
- 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 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. We highly recommend the student use a TI-30IIX Texas Instruments calculator.