MATH 095 - Elementary Algebra (3 Credits)

DESCRIPTION:

A course in the fundamental operations of real numbers, solving linear equations in one variable, graphing linear equations in two variables, solving linear systems in two variables, and performing basic operations on polynomials. Intended to provide a basic foundation for future mathematics needed in fields of business, economics, engineering and related fields. Strong background in fractions and positive and negative numbers is highly recommended. A comprehensive, proctored, departmental final exam will be given. Prerequisite: MATH 93 or 116 with a grade of C or better; or a satisfactory ACT/SAT/Placement Test score.

TEXT:

Beginning and Intermediate Algebra; 5th Edition; Lial, Hornsby, and McGinnis
NOTE: Full-time instructors have the right to use no text or a different text.

OUTLINE:

Ch 2 - Sections 2.1 - 2.8
Ch 3 - Sections 3.1 - 3.4 (Supplement with 7.1, 7.2 as necessary)
Ch 4 - Sections 4.1 - 4.7
Ch 8 - Sections 8.1 - 8.3 and 8.5
Ch 9 - Sections 9.1 and 9.2 and 9.3 (which should be covered after graphing lines)

OUTCOMES:

a. Be able to work with real numbers, exponents, and polynomial arithmetic
b. Solve linear equations and inequalities
c. Solve absolute value equations and inequalities
d. Graph linear equations in two variables
e. Write equations of lines given two points
f. Solve systems of equations
g. Apply and extend all concepts

EVALUATION:

Grades will be determined by student performance in one or more of the following areas: in-class tests, take-home tests, homework assignments, quizzes, special projects, papers, attendance, and class participation. Degree of importance and types of assessment used will depend on the instructor.

This course DOES NOT satisfy the Math component of a degree or certificate program at CSN.
Math 095 Course Outline by Topic

Required topics:

- Studies in linear equations
  - Solving linear equations with variables on both sides (2.1-2.2)
  - Solving linear equations requiring the distributive property (2.3)
  - Solving equations with fractions and decimals (2.3)
- Further studies in linear equations
  - Working with formulas and basic geometry (2.5)
  - Solving formulas for a specified variable (2.5)
  - Applications involving linear equations (2.4, 2.5, 2.7)
  - Proportions (2.6)
  - Absolute value equations (9.2)
- Inequalities
  - Introduction to inequalities (with interval notation) (2.8)
  - Linear inequalities (2.8)
  - Compound inequalities (9.1)
  - Absolute value inequalities (9.2)
- Graphing lines
  - Graphing lines by plotting points (3.1, 7.1)
  - Using intercepts to graph lines (3.2, 7.1)
  - Calculating slope from a graph (3.3, 7.1)
  - Graphing lines using slope intercept form (3.2, 3.4, 7.1)
- Writing equations of lines
  - Writing equations of lines given the slope and y-intercept (3.3, 7.2)
  - Writing equations of lines given the slope and a point (3.3, 7.2)
  - Writing equations of lines given two points (3.3, 7.2)
  - Writing equations of parallel/perpendicular lines (7.2)
- Systems of linear equations
  - Solving linear systems using the graphing method (8.1)
  - Solving systems using the substitution method (8.2)
  - Solving systems using the addition (elimination) method (8.3)
  - Applications of linear systems (8.5)
  - Graphing linear inequalities and systems of linear inequalities (9.3)
- Exponent rules
  - Product rule, quotient rule, and power rules. (4.1, 4.2)
  - Integer exponents (4.2)
  - Scientific notation (4.3)
- Introduction to polynomials
  - Vocabulary of polynomials (term, degree, coefficients, etc.) (4.4)
  - Adding/subtracting polynomials (4.4)
  - Multiplying polynomials (4.5)
  - Expanding powers of polynomials/special products (4.6)
  - Dividing polynomials (4.7)