

I. **CATALOG DESCRIPTION**

Mathematics; Math 952; Prealgebra

4 hours lecture per week = 4 units

An introduction to mathematical properties; exponential notation; linear equations in one variable; algebraic word problems; variables; polynomials; and the appropriate operation rules for rational numbers, whole numbers and integers; an emphasis on speaking, listening, reading, and writing in communicable mathematics terminology.

Prerequisite: Math 942: Arithmetic with a grade of C or better or eligibility for Math 952 as determined through the SBVC assessment process.

NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: One

EXPECTED OUTCOMES FOR STUDENTS

**Upon completion of the course, the student should be able:**

- A. Recognize and utilize: whole number properties; properties of equality; order of operations prime factoring; positive and negative bases; and percentages.
- B. Identify and apply various strategies for organizing word problems to be solved algebraically using linear equations in one variable.
- C. Compare and contrast these Real number sets, natural, whole, integer, and rational; to distinguish and use the appropriate operation rules for each set.
- D. Introduce inequality symbols, absolute value, complex fractions, and the terms and factors of a polynomial.
- E. Emphasize terminology: students will speak, listen, read and write in a communicable algebra language.

CONTENT

- A. Whole Numbers
  - 1. Basic Operations with whole numbers
  - 2. Commutative, Associative and Distributive properties of whole numbers
  - 3. Exponents and Order of Operations
- B. Integers
  - 1. Addition and Subtraction of Integers
  - 2. Multiplication and Division of Integers
  - 3. Relationship to the number line, inequality symbols, and absolute value
- C. Linear equation in one variable
  - 1. Introduction to variables, algebraic vocabulary, and the properties of equality.
  - 2. Solving simple equations in one variable
  - 3. Combining like terms
  - 4. Algebraic word problems
- D. Rational Numbers
  - 1. Reducing fractions by prime factorization
  - 2. Basic operation with fractions
  - 3. Complex fractions
  - 4. Basic operations with decimals
  - 5. Linear equations involving decimals
  - 6. Percent word problems solved algebraically
- E. Polynomials
  - 1. Vocabulary of Polynomials
  - 2. Addition and Subtraction of Polynomials
  - 3. Multiplication of Binomials

II. METHODS OF INSTRUCTION:

- A. Lecture
- B. Demonstration experiments
- C. Discussion
- D. Problem solving
- E. Interactive group activity
- F. Peer tutoring

III. TYPICAL ASSIGNMENTS:

At the end of each section there is a set of problems. These start with problems that require the student to recognize and apply the principles covered in the section. The problems then graduate into those requiring the application of two or more principles and the student must recognize the principles to apply and the correct order in which to apply them. Typical problem sets end with application problems in which the student must translate the words in the problem into appropriate mathematical symbol and analyze which principles must be applied. The student must then formulate and apply a solution strategy.

IV. EVALUATION(S)

- A. 5 to 7 regularly scheduled tests
- B. Comprehensive final exam

V. TYPICAL TEXT(S): McKeague, Prealgebra, 3<sup>rd</sup> ed., I.T.T. Publisher, 1996

IX. OTHER SUPPLIES REQUIRED OF STUDENTS: None