

Course Objectives/Course Outline
Spokane Community College

Course Title: Algebra for Math Literacy II

Prefix and Course Number: MATH 88

Course Learning Outcomes:

By the end of this course, a student should be able to:

- Numeracy: Students will develop and apply the concepts of numeracy to investigate and describe quantitative relationships and solve problems in a variety of contexts.
 - Demonstrate operation sense and the effects of common operations on numbers in words and symbols.
 - Demonstrate competency in the use of magnitude in the contexts of place values, fractions, and numbers written in scientific notation.
 - Use estimation skills.
 - Apply quantitative reasoning to solve problems.
 - Demonstrate measurement sense.
 - Demonstrate an understanding of the mathematical properties and uses of different types of mathematical summaries of data.
 - Read, interpret, and make decisions based upon data from line graphs, bar graphs, and charts.
- Proportional Reasoning: Students will represent proportional relationships and solve problems that require an understanding of ratios, rates, proportions, and scaling.
 - Recognize proportional relationships from verbal and numerical representations.
 - Compare proportional relationships represented in different ways.
 - Apply quantitative reasoning strategies to solve real-world problems with proportional relationships.
- Algebraic Reasoning: Students will reason using the language and structure of algebra to investigate, represent, and solve problems.
 - Understand various uses of variables to represent quantities or attributes.
 - Describe the effect that changes in variable values have in an algebraic relationship.
 - Construct and solve equations or inequalities to represent relationships involving one or more unknown or variable quantities to solve problems.
- Functions: Students will represent relationships between quantities in multiple ways and solve problems that require an understanding of functions.
 - Translate problems from a variety of contexts into a mathematical representation and vice versa.
 - Describe the behavior of common types of functions using words, algebraic symbols, graphs, and tables.
 - Identify the reasonableness of a linear model for given data and consider alternative models.
 - Use appropriate terms and units to describe rate of change.
 - Understand that abstract mathematical models used to characterize real-world scenarios or physical relationships are not always exact and may be subject to error from many sources.

Course Outline:

- I. Statistics
 - A. Median, Mode, Means, Weighted Averages
 - B. Scatterplots and Line of Best Fit
 - C. Standard Deviation
 - D. Z-scores
 - E. Graphical Displays
 - F. Experimental and Theoretical Probabilities
- II. Algebra
 - A. Write and Solve Linear Equations
 - B. Solve Proportions
 - C. Solve Equations using Graphs and Tables
 - D. Direct and Inverse Variation
 - E. Solve Literal Equations
 - F. Solve Linear Systems
- III. Models
 - A. Linear
 - B. Quadratic
 - C. Exponential
 - D. Rational
- IV. Numeracy
 - A. Unit Analysis
 - B. Rules of Exponents
 - C. Scientific Notation
 - D. Orders of Magnitude