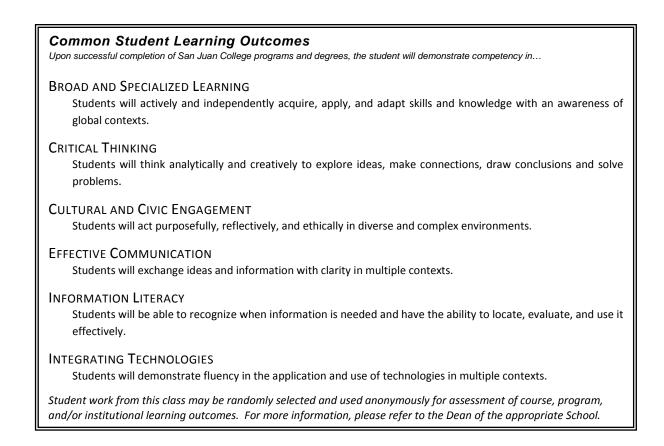
CATALOG DESCRIPTION

Algebra from the viewpoint for the elementary curriculum with emphasis on proportional and linear relationships. Additional topics include: Number theory, ratio, percent, probability and statistics. Student activities, investigations and problem solving are emphasized throughout.

Prerequisites: Grade of "C" or better in MATH 121

Semester Offered: Fall



Course Learning Outcomes

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

- 1. Number Theory
- 2. Ratio, Proportion, and Percent
- 3. Introductory Algebra
- 4. Statistics and Probability
- 5. Problem Solving

Specific Learning Outcomes

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

- 1.1) Interpret a composite number as the product of prime factors.
- 1.2) Use factors and multiples to solve problems.
- 1.3) Use tests for divisibility
- 1.4) Differentiate between prime or composite numbers using various techniques including factoring and the Sieve of Eratosthenes
- 1.5) Discuss the Fundamental Theorem of Arithmetic
- 1.6) Compare and contrast the sets of rational, irrational and real numbers
- 2.1) Express percent of a quantity as a rate per 100
- 2.2) Use proportional reasoning in common applications
- 2.3) Represent a quantity as a fraction, percent, and decimal
- 2.4) Use proportional relationships to solve percent problems
- 3.1) Represent, analyze, and interpret a variety of patterns with tables, graphs, words and equations
- 3.2) Explain how formulas represent relationships between quantities
- 3.3) Solve and graph linear equations
- 3.4) Define and identify functions
- 3.5) Represent functions with words, tables, equations and graphs
- 3.6) Interpret the slope of a line as a ratio between quantities or a unit rate in contextual situations
- 3.7) Analyze linear relationships and identify the slope and y-intercept in a graph, equation, and applied situation
- 4.1) Select, create, and use appropriate graphical representations of data including frequency tables, pictographs, line plots, bar graphs, line graphs, histograms, box plots, and scatterplots
- 4.2) Identify graphic misrepresentations and distortions of data sets such as unequal interval size, axis range, and scaling 4.3) Summarize and interpret data using mean, median and quartiles and explain the appropriateness and limitations of each measure
- 4.4) Compute theoretical probabilities using organized lists, tree diagrams, area models, and formulas for simple and compound events
- 4.5) Compare probabilities estimated using empirical data to those computed theoretically.
- 4.6) Discuss the importance of randomness
- 4.7) Compare and contrast population and sample
- 4.8) Use the vocabulary of probability to generate convincing arguments, draw conclusions, and make informed decisions.
- 4.9) Use measures of center and measures of variability to draw informal comparative inferences about two populations
- 4.10) Explain and compute standard deviation and inter-quartile range
- 5.1) Make sense of problems and persevere in solving them.
- 5.2) Reason abstractly and quantitatively.
- 5.3) Construct viable arguments and critique the reasoning of others.
- 5.4) Model with mathematics
- 5.5) Use appropriate tools strategically
- 5.6) Attend to precision.
- 5.7) Look for and make sense of structure
- 5.8) Use mathematical notation properly