

MAT 110**Applied Mathematics****3 credits****Description:**

Includes the concepts of ratio and proportion, units and conversions, linear equations in two variables, inequalities, graphing and writing equation of a line, percents, interest, descriptive statistics, and logical symbolism. Emphasizes applications in the various technologies.

Components: Lecture: 3 credits (45 contact hours)

Pre-requisite: MAT 065 or equivalent as determined by KCTCS placement examination

Implementation: Fall 2011

General Education: AAS: Mathematics

Competencies:

Upon completion of this course, the student can:

1. Write the equation of a given line and graph linear equations in two variables;
2. Solve systems of linear equations in two variables;
3. Set up and solve ratios and proportions;
4. Use and interpret scientific notation;
5. Convert between various units of measure;
6. Solve problems involving percents;
7. Solve problems involving significant digits, and accuracy and precision of measurements.
8. Solve problems involving simple and compound interest;
9. Calculate and interpret basic descriptive statistical measures such as mean, median, mode, range, variance, and standard deviation and use the normal distribution.
10. Use logic to determine the validity of arguments.
11. Solve application problems involving the above competencies.

Outline:

- I. Number Theory and the Real Number System
 - A. Prime Numbers and Divisibility
 - B. Least Common Multiple and Greatest Common Divisor
 - C. Rules of Exponents
 - D. Scientific Notation
 - E. Operations with Square Roots
 - F. Applications
- II. Measurements and Units
 - A. Significant Digits
 - B. Precision and Accuracy
 - C. Metric Units of Measurement
 - D. Conversions to and from U.S. Customary ("Standard") System of Measurement
 - E. Applications
- III. Algebra and Graphs
 - A. Solving Linear Equations in One Variable
 - B. Solving Proportions
 - C. Graphing Lines
 - D. Writing the Equation of a Given Line
 - E. Applications
- IV. Inequalities and Systems of Linear Equations
 - A. Solving Systems of Linear Equations
 - B. Solving Inequalities
 - C. Applications
- V. Consumer Mathematics

- A. Percents
- B. Simple and Compound Interest
- C. Applications

VI. Statistics

- A. Sampling Techniques
- B. Statistical Graphs and Charts
- C. Measures of Central Tendency (Mean, Median, Mode)
- D. Measures of Dispersion (Range, Variance, Standard Deviation)
- E. Using the Normal Distribution Curve
- F. Applications

VII. Logic

- A. Conjunction, Disjunction, and Conditionals
- B. Truth Tables
- C. Categorical Propositions
- D. Fallacies and Valid Arguments
- E. Applications