MGF 1106 Liberal Arts Mathematics I

The purpose of this course is to demonstrate the utility and beauty of mathematics with an emphasis on critical thinking, the communication of mathematical ideas, and applications to real life. The course is intended for, but not limited to, students who need to satisfy a general education mathematics requirement and are in programs which do not require calculus. THIS COURSE IS NOT A PREREQUISITE FOR MGF 1107. THIS COURSE DOES NOT MEET THE REQUIREMENTS OF 6A-5.066(3)1, FLORIDA ADMINISTRATIVE RULES, FOR EDUCATION MAJORS. IT WILL NOT ENABLE THE TEACHER TO SUPPORT THE INSTRUCTION OF GEOMETRY AND MEASUREMENT AS LISTED BY THE SUNSHINE STATE STANDARDS.

PREREQUISITE: MAT 1033 Intermediate Algebra (with a minimum grade of C?)

Topics

I. Sets
- A. Symbolic notation and representations
- B. Subsets, union, intersection, complement
- C. Number of possible subsets of a set
- D. Venn diagrams
- E. Cardinality
- F. DeMorgan's Laws

II. Logical Reasoning
- A. Symbolic forms of arguments
- B. Quantified statements
- C. Compound statements involving negation, conjunction, disjunction, and conditional and biconditional statements
- D. Validity of arguments through truth tables and Euler circles
- E. Common patterns of arguments
- F. Valid vs. sound arguments
- G. Equivalent statements including the use of contrapositives and DeMorgan's Laws

III. Probability and Counting
- A. Fundamental counting principle
- B. Permutations and combinations
- C. Odds
- D. Expected value
- E. Events involving *not*, *and*, *or* and conditional probability
- F. Mutually exclusive and independent events

IV. Elementary Geometry and Measurement
- A. Units of measure and unit conversions
- B. Characteristics of two-dimensional and three-dimensional figures
- C. Problems involving perimeter, area and volume

D. Pythagorean theorem
E. Similarity, congruence and symmetry of figures
F. Parallel and intersecting lines and the angles formed

V. Descriptive Statistics
A. Measures of central tendency
B. Measures of dispersion
C. Measures of position
D. Normal curve and normal distribution
E. Organization, presentation and interpretation of raw data
1. Frequency distributions
2. Stem-and-leaf plots
3. Histograms
4. Pie charts
5. Interpretations of other types of graphs
F. Statistical bias and deception

Concerns:
The confusion caused by the names making people think that one is a prerequisite for the other.
What role does this course play in preparation for the CLAST and/or the General Knowledge Test?