

Miami-Dade Community College
MGF 1106 Mathematics for Liberal Arts I

Course Description Topics include: Sets and logic; geometry; probability and statistics.

(3 hrs lecture)

Pre-requisite: MAT 1033 with a grade of C or better or equivalent

Competency 1: The student will be able to perform the following operations on sets.

- a. Find complements, unions, intersections, subsets, and apply DeMorgan's laws.
- b. Draw and apply Venn diagrams.

Competency 2: The student will be able to apply the rules of logic to:

- a. Analyze/determine negations, disjunctions, conjunctions and various forms of conditional statements.
- b. Determine the validity of arguments, using symbolic logic and/or Euler circles.

Competency 3: The student will be able to apply the basic counting techniques:

- a. The Multiplication Rule (or Fundamental Counting Principle)
- b. Combinations

Competency 4: The student will have a working knowledge of basic probability theory, including being able to:

- a. Describe a sample space and an event.
- b. Calculate probabilities of simple, compound and conditional events.

Competency 5: The student will have a working knowledge of basic concepts in statistics, including being able to:

- a. Distinguish between sampling methods.
- b. Interpret data presented in graphs, charts and tables, as well as relationships between data sets.
- c. Calculate and understand relationships between measures of central tendency.

Competency 6: The student will have a working knowledge of basic concepts in plane geometry, including being able to:

- a. Round measurements; convert and determine appropriate units of measure.
- b. Compute perimeters, areas and volumes of various plane and solid figures.
- c. Distinguish between the various characteristics of quadrilaterals.
- d. Calculate angles in diagrams involving parallel lines.
- e. Classify different types of triangles make angle computations, apply the Pythagorean Theorem and Similar Triangles Theorem.