

**MIAMI DADE COLLEGE**  
**MATHEMATICS DEPARTMENT**  
**COURSE: MGF 1106**  
**MATHEMATICS FOR THE LIBERAL ARTS I**  
**REF : 740715**  
**SYLLABUS. Summer A 2012-3**

**PROFESSOR:** Dr. Jose Serpa

**OFFICE:** 1369

**DATES AND ROOM:** MWF 8:00 – 10:15 am **Room 1127**

**OFFICE HOURS:**

**TEXT:** A Survey of Mathematics with Applications

Angel, Abbott, Runde

9<sup>th</sup> Edition, ISBN# 0321759664

Pearson – Addison Wesley

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**PREREQUISITE:** MAT 1033 or suitable placement score.

**COURSE DESCRIPTION:** The objectives of MGF 1106 will be covered in five units: Sets, Logic, Informal Geometry, Probability and Statistics

**EVALUATION POLICY:** Five tests will be given during the term. The final grade will be obtained by calculating the average of these grades after dropping the lowest grade. The five tests will be multiple-choice tests. Test # 5 is mandatory. I may assign seating during any of the tests.

**MAKE-UPS:** Absolutely no make-up examinations will be given.

**GRADING SCALE:**

A: 90-100, B: 80-89, C: 70-79, D: 60-69, F: below 60

**Incompletes:** Incompletes will be given in very limited situations. The students must have a passing average and have a serious personal illness, family deaths, or unexpected crisis.

**HOMEWORK:** Homework will be assigned online for extra credits toward each of the exams. Homework assignments are due the same day of the exam.

**ATTENDANCE:** Attendance is highly encouraged. Students are responsible for all material covered and/or distributed in class.

**MATH LAB:** Available on Campus. Highly recommended!!! Room 1213.

**WITHDRAWAL POLICY:** If you decide to withdraw from this course it is your responsibility to do so in order to receive a grade of “W”. Drop/withdrawals should be conducted through the office of the registrar.

**CLASSROOM BEHAVIOR:**

*Beepers and cellular phones must be turned off before class.*

*Please, be prompt.* Late arrivals are very disturbing for the instructor and disruptive to fellow students. You should plan to leave enough time to allow for traffic, parking, inclement weather, etc.

*Cheating.* Cheating will not be tolerated in this course. Any student caught will receive an automatic F in the course.

## **TENTATIVE BREAKDOWN AND DATE OF EXAMINATIONS**

### **Week 1**

- 2.1 Set concepts
- 2.2 Subsets
- 2.3 Venn Diagrams and Set Operations
- 2.4 Venn Diagrams with Three Sets and verification of Equality of Sets
- 2.5 Applications of Sets

### **Week 2**

#### **Review, Test I**

- 3.1 Statements and Logical Connectives
- 3.2 Truth Tables for Negation, Conjunction, Disjunction
- 3.3 Truth Tables for the Conditional and Bi-conditional
- 3.4 Equivalent Statements
- 3.5 Symbolic arguments
- 3.6 Euler diagrams and Syllogistic Arguments

### **Week 3**

#### **Review, Test II (Take Home) is assigned**

- 9.1 Points, Lines, Planes, and Angles
- 9.2 Polygons **Test II (Take Home) is due**
- 9.3 Perimeter and Area
- 9.4 Volume

### **Week 4**

#### **Review, Test III (9.1 – 9.4)**

- 12.1 The Nature of Probability
- 12.2 Theoretical Probability
- 12.3 Odds
- 12.6 Or and And problems (Conditional Probability)

### **Week 5**

- 12.8 The Counting Principle and Permutations
- 12.9 Combinations

#### **Review, Test IV**

- 13.1 Sampling Techniques
- 13.4 Statistical Graphs

### **Week 6**

- 13.5 Measures of Central Tendency
- Review, Test V (13.4 – 13.7)**

#### Note:

This syllabus is subject to any adjustment or change during the course.

MGF1106  
COURSE COMPETENCIES

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.

**Miami – Dade College / InterAmerican Campus  
Mathematics Department**

**How do the course objectives relate to the Miami-Dade Learning Outcomes?**

What follows below is a list of the ten learning outcomes that have recently been prepared by Miami Dade faculty and administrators.

As graduates of Miami Dade College, students will be able to:

1. Communicate effectively using listening, speaking, reading, and writing skills.
2. Use quantitative analytical skills to evaluate and process numerical data.
3. Solve problems using critical and creative thinking and scientific reasoning.
4. Formulate strategies to locate, evaluate, and apply information.
5. Demonstrate knowledge of diverse cultures, including global and historical perspectives.
6. Create strategies that can be used to fulfill personal, civic, and social responsibilities.
7. Demonstrate knowledge of ethical thinking and its application to issues in society.
8. Use computer and emerging technologies effectively.
9. Demonstrate an appreciation for aesthetics and creative activities.
10. Describe how natural systems function and recognize the impact of humans on the environment.

Each course taken at the college addresses some of these learning outcomes. MGF1106 addresses outcomes 1, 2, 3, 4, 5, 8, 9.