MGF 1106 – Finite Mathematics Course Outline

Prerequisites: C (2.0) or better in MAT 1033, or SAT Math score of 440 or better, or ACT Math score of 19 or better, or Elementary Algebra CPT score of 72 or better.
Course Description: The course meets for 135 minutes per week in a large lecture format, and then two 75-minute help sessions per week. The course is intended for students who do not need to take calculus as part of their major degree program. It fulfills 3 (semester) hours of the Gordon Rule Computation requirement and also 3 hours of the General Education Quantitative Methods requirement, provided a grade of C-minus or better is achieved. There are typically four or five exams given during the semester, plus a departmental cumulative final exam.

Course Content

Chapter 1: Problem Solving
1.1: Inductive Reasoning
1.2: Estimation: A Problem-Solving Tool
1.3: Graph Interpretation: A Problem-Solving Tool (optional)

Chapter 2: Sets
2.1: Sets: A Problem-Solving Tool
2.2: Set Operations
2.3: Venn Diagrams
2.4: The Number of Elements in a Set: A Problem-Solving Tool
2.5: Infinite Sets (omit)

Chapter 3: Logic
3.1: Statements
3.2: Truth Tables: A Problem-Solving Tool
3.3: The Conditional and Biconditional
3.4: Variations of the Conditional and Implications
3.5: Euler Diagrams: A Problem-Solving Tool
3.6: Truth Tables and Validity of Arguments
3.7: Switching Networks: A Problem-Solving Tool (omit)

Chapter 8: Geometry (4-5 lectures)
8.1: Points, Lines, Planes, and Angles
8.2: Triangles and Other Polygons
8.3: Perimeter and Circumference
8.4: Area Measure and the Pythagorean Theorem
8.5: Volume and Surface Area
8.6: Networks, Non-Euclidean Geometry, and Topology (omit)
8.7: Chaos and Fractals (omit)

Chapter 10: Counting Techniques (4-5 lectures)
10.1: The Sequential Counting Principle: A Problem-Solving Tool
10.2: Permutations
10.3: Combinations
10.4: Miscellaneous Counting Methods
Chapter 11: Probability (6-7 lectures)
11.1: Sample Spaces and Probability
11.2: Counting Techniques and Probability
11.3: Computation of Probabilities
11.4: Conditional Probability
11.5: Independent Events
11.6: Odds and Mathematical Expectation

Chapter 12: Statistics (6-7 lectures)
12.1: Sampling and Frequency Distributions
12.2: Measures of Central Tendency: The Mean, Median, and Mode
12.3: Measures of Dispersion: The Range and Standard Deviation
12.4: The Normal Distribution: A Problem-Solving Tool
12.5: Statistical Graphs: A Problem-Solving Tool
12.6: Making Predictions: Linear Regression
12.7: Scattergrams and Correlation

Chapter 13: Your Money and Your Math
   (This chapter is usually omitted due to time constraints.)
13.1: Interest, Taxes, and Discounts
13.2: Credit Cards and Consumer Credit
13.3: Annual Percentage Rate (APR) and the Rule of 78
13.4: Buying a House