ALABAMA AGRICULTURAL & MECHANICAL UNIVERSITY
School of Arts & Sciences
Department of Mathematics

MTH 110
Course Title: Finite Mathematics
Course Credit: Three semester hours

Course Textbook:
Sullivan, Michael and Mizrahi, Abe. Finite Mathematics: An Applied Approach, 9th Edition; John Wiley & Sons, Inc. (2004)

Course Description:
This course covers sets, counting, permutations, combinations, basic probability theory (including Baye's Theorem), statistical concepts (including binomial distribution and normal distributions), and matrices and their applications to Markov chains and decision theory. Additional topics may include symbolic logic, linear models, linear programming, the simplex method, and applications.

Prerequisites:
MTH 101 or an acceptable placement test score.

Course Evaluation: 290-3-3.13 (1)(a) 1

The grading components for the course consist of the following activities

1. Quizzes and Written Assignments	25% of Grade
2. Tests	50% of Grade
3. Comprehensive Final Examination	25% of Grade

Assignments prepared outside of classes must form no more than 5% of the grade.

Final grades are assigned by the percentage of the total points earned for the course.

90 – 100% A 80 – 89% B 70 – 79% C 60 – 69% D below 60% F

Course Objectives:

1. To enhance students' algebraic, geometric, and arithmetic skills, and their application of these skills to problem solving

2. To develop students' capacity to read technical materials, and engage in logical and quantitative thinking

Course Content:

Supplemental Content:
Appendix A and Appendix C (Used to review before specified sections.)

Chapter One: Linear Equations
- 1.1 Rectangular Coordinates; Lines
- 1.2 Pairs of Lines
- 1.3 Applications

Chapter Two: Systems of Linear Equations; Matrices
- 2.1 Systems of Linear Equations: Substitution; Elimination
- 2.2 Systems of Linear Equations: Matrix Method
- 2.3 Systems of *m* Linear Equations Containing *n* Variables
- 2.4 Matrix Algebra
- 2.5 Multiplication of Matrices
- 2.6 The Inverse of a Matrix
- 2.7 Applications

Chapter Three: Linear Programming: Geometric Approach
- 3.1 Systems of Linear Inequalities
- 3.3 Applications

Chapter Six: Sets; Counting Techniques
- 6.1 Sets
- 6.2 The Number of Elements in a Set
- 6.3 The Multiplication Principle
- 6.4 Permutations
- 6.5 Combinations
- 6.6 The Binomial Theorem

Chapter Seven: Probability
- 7.1 Sample Spaces and the Assignment of Probabilities
- 7.2 Properties of the Probability of an Event
- 7.3 Probability Problems Using Counting Techniques
- 7.4 Conditional Probability
- 7.5 Independent Events

Chapter Nine: Statistics
- 9.1 Introduction to Statistics: Data and Sampling
- 9.2 Representing Data Graphically: Bar Graphs; Pie Charts
- 9.3 Organization of Data
- 9.4 Measures of Central Tendency
- 9.5 Measures of Dispersion