**MIDDLESEX COUNTY COLLEGE**
**EDISON, NEW JERSEY**

**MATHEMATICS DEPARTMENT**

**Date:** August 15, 2008

**Course Title:** Freshman Mathematics II

**Course Number:** MAT 102

**Class Hours:** 3 **Laboratory Hours:** 0 **Credit Hours:** 3

**Department Head Approval:** _____
**Maria DeLucia, Ph.D.**

**Dean's Approval:**_____
**Reginald Luke, Ph.D.**

**Prerequisite:** Freshman Mathematics I, MAT 101

**Textbook of Course:**

**Author**: Angel, Abbott, Runde
**Title**: A Survey of Mathematics with Applications, Expanded 8th Edition
**Publisher**: Addison-Wesley

**Catalog Course Description:**

The second half of a course designed for liberal arts students. Topics include Probability, Odds and Expected Value, Statistics, Graph Theory and Voting.

**Objectives**:
The student will demonstrate through quizzes, examinations, homework and projects the ability to:

1. Use the fundamental laws of probability
2. Recognize the practical applications of probability in predicting events
3. Create frequency tables, histograms, scatter plots and box-plots from given data
4. Calculate and interpret summary statistics and five number summaries
5. Become familiar with methods of statistical inference
6. Study graph theory: Graphs, Paths and Circuits including Euler & Hamilton Paths, Euler & Hamilton Circuits and Trees to help solve real-life problems.
7. Become familiar with theory of Voting.

**Requirements:**
Students are required to use the **TI-30X IIS calculator.** No calculators should be shared and no cell phones can be used during tests.

**Suggestions:**
Teachers are expected to use the Internet/Research Activities and Group Projects at the end of each section or chapter. Make use of a computer lab for using Excel in Statistics is strongly suggested.

## COURSE OUTLINE

| DAY | UNIT | TOPIC |
|---|---|---|
| 1 | 12.1 | The Nature of Probability |
| 2 | 12.2 | Theoretical Probability |
| 3 | 12.3 | Odds |
| 4 | 12.4 | Expected Value (Expectation) |
| 5 | 12.5 | Tree Diagrams |
| 6 | 12.6 | *Or* and *And* Problems |
| 7 | | Catch-up |
| 8 | | Review for test |
| 9 | | **TEST # 1(Chapter 12)** |
| 10 | 13.1 | Sampling Techniques |
| 11 | 13.2 | The misuses of statistics |
| 12 | 13.3 | Frequency Distribution |
| 13 | 13.4 | Statistical Graphs |
| 14 | 13.5 | Measures of Central Tendency |
| 15 | 13.6 | Measures of Dispersion |
| 16 | | Review for test |
| 17 | | **TEST # 2 (Chapter 13.1-6)** |
| 18 | 14.1 | Graphs, Paths and Circuits |
| 19 | 14.2 | Euler Paths and Euler Circuits |
| 20 | 14.3 | Hamilton Paths and Hamilton Circuits |
| 21 | 14.4 | Trees |
| 22 | | Review for test |
| 23 | | **TEST # 3 (Chapter 14)** |
| 24 | 15.1 | Voting Methods |
| 25 | | Final Review |
| 27 | | **FINAL EXAM** |