Math 1111 College Algebra

COURSE DESCRIPTION: This course is a functional approach to algebra that incorporates the use of appropriate technology. Emphasis will be placed on the study of functions, and their graphs, inequalities, and linear, quadratic, piece-wise defined, rational, polynomial, exponential, and logarithmic functions. Appropriate applications will be included.

A. Review Topics. Upon entering College Algebra, the student is expected to possess an understanding of Elementary and Intermediate Algebra. At MOST 20% of class time will be spent reviewing the following topics in order to reinforce the students' understanding of them.

1. Sets and Set Operations
2. Special Products and Factoring
3. Fundamental Operations with Polynomial and Rational Expressions
4. Integral and Rational Exponents and Radicals
5. Linear Equations in One Unknown with Applications
6. Linear Inequalities in One Unknown
7. Quadratic Equations in One Unknown
8. Rectangular Coordinates and Graphs of First- and Second- Degree Equations
9. System of Two Linear Equations in Two Unknowns
10. Ratio and Proportion

B. Uniform Requirements. Between 50% and 70% of class time will be spent covering the following topics:

1. Relations, Functions, and their Graphs
2. Quadratic and Rational Inequalities
3. Linear Functions of a Single Variable with Applications
4. Quadratic Functions of a Single Variable with Applications
5. Systems of Equations with Applications
6. Polynomial Functions of a Single Variable (including Graphs, Remainder and Factor Theorem, etc.)
7. Exponential and Logarithmic Functions with Applications

C. Additional Topics. Even though each of the following areas is appropriately placed under the title "College Algebra," it would be unrealistic to expect that they would be covered in a minimum level College Algebra course. However, between 10% and 50% of class time will be spent covering one or more of these areas:

1. Absolute Value Equations and Inequalities
2. Fundamental Operations with Complex Numbers
3. Matrices and their Applications
4. Arithmetic and Geometric Sequences and Series with Applications
5. Mathematical Induction and the Binomial Theorem
6. Variation with Applications
7. Permutations, Combinations and Probability
8. Linear Programming
9. Conic Sections

For suitable textbooks, please consult the texts spreadsheet on the ACMS website.