Alabama Community College System

MTH 112
Precalculus Algebra

I.   MTH 112 Precalculus Algebra —3 Semester Hours

II.   Course Description

This course emphasizes the algebra of functions – including polynomial, rational, exponential, and logarithmic functions. In addition, the course covers non-linear inequalities as well as systems of linear and non-linear equations and inequalities.

III.   Prerequisite

Successful completion of MTH 100 Intermediate College Algebra with a grade of C or higher or appropriate placement. COREQUISITE: MTH 111 Support for Precalculus Algebra, if required.

IV.   Textbook

Due to the varied selection of quality college-level textbooks, each college will select the textbook needed to meet the requirements of this course.

V.   Course Learning Outcomes

By the end of the course, students will be able to:
1.   demonstrate knowledge of the elementary properties of functions,
2.   interpret polynomial and rational functions analytically and graphically,
3.   interpret exponential and logarithmic functions analytically and graphically, and
4.   solve systems of linear and non-linear equations and inequalities.

VI.   Course Outline of Topics

Required Topics
1.   Concepts of functions
2.   Graphs of relations and functions
3.   Combinations and composition of functions
4.   Inverse functions
5.   Quadratic functions
6.   Polynomial functions

7. Real zeros
8. Complex numbers
9. Fundamental Theorem of algebra
10. Rational functions
11. Exponential functions
12. Logarithmic functions
13. Properties of logarithms
14. Solving exponential and logarithmic equations
15. Applications of exponential functions
16. Systems of linear and non-linear equations
17. Non-linear inequalities
18. Systems of linear and non-linear inequalities.

VII. Evaluation and Assessment

Grades will be given based upon A = 90 – 100%, B = 80 – 89%, C = 70 – 79%, D = 60 – 69%, and F = below 60%.

VIII. Attendance

Students are expected to attend all classes for which they are registered. Students who are unable to attend class regularly, regardless of the reason or circumstance, should withdraw from that class before poor attendance interferes with the student's ability to achieve the objectives required in the course. Withdrawal from class can affect eligibility for federal financial aid.

IX. Statement on Discrimination/Harassment

It is the official policy of the Alabama Community College System and entities under its control, including all Colleges, that no person shall be discriminated against on the basis of any impermissible criterion or characteristic, including, without limitation, race, color, national origin, religion, marital status, disability, sex, age, or any other protected class as defined by federal and state law. (ACCS Policies 601.02 and 800.00)

X. Americans with Disabilities

The Rehabilitation Act of 1973 (Section 504) and the *Americans with Disabilities Act* of 1990 state that qualified students with disabilities who meet the essential functions and academic requirements are entitled to reasonable accommodations. It is the student's responsibility to provide appropriate disability documentation to the College.