



# Alabama Community College System

## MTH 113 Precalculus Trigonometry

### **I. MTH 113 Precalculus Trigonometry – 3 Semester Hours**

### **II. Course Description**

This course includes the study of trigonometric (circular) functions and inverse trigonometric functions as well as extensive work with trigonometric identities, equations, and formulas. The course also covers vectors, complex numbers, DeMoivre's Theorem, and polar graphs. Additional topics may include conic sections and product-sum formulas.

### **III. Prerequisite**

Grade of C or higher in MTH 112 or appropriate placement scores

### **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 Objectives**

By the end of the course, students will be able to:

1. demonstrate knowledge of circular and right triangle approaches to trigonometry,
2. interpret trigonometric functions analytically and graphically,
3. analyze complex numbers and their relationship with trigonometry and vectors,
4. construct and interpret polar coordinates and polar graphs, and
5. connect trigonometric concepts to real world applications.

## **VI. Course Outline of Topics**

### Required Topics

1. Radian and degree measure
2. The trigonometric functions and the unit circle
3. Trigonometric functions and right triangles
4. Trigonometric functions of any angle
5. Graphs of trigonometric functions
6. Inverse trigonometric functions
7. Applications of trigonometry
8. Verifying trigonometric identities
9. Solving trigonometric equations
10. Sum and difference formulas
11. Multiple-angle formulas
12. Law of sines
13. Law of cosines
14. Trigonometric form of a complex number
15. DeMoivre's Theorem and nth roots
16. Polar coordinates and graphs
17. Vectors and applications

### Optional Topics

1. Conic sections
2. Product-sum formulas

## **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.