SOUTHEAST COMMUNITY COLLEGE
DIVISION OF ARTS AND SCIENCES
Mathematics
Revision Date: 07-01-24

I. CATALOG DESCRIPTION

Course Number:	MATH1200
Course Title:	Trigonometry
Prerequisite(s):	A grade of "C" or higher in MATH1150 or appropriate score on the math placement test.
Catalog Description:	A study of trigonometry in preparation for advanced math and science coursework. Use definitions of trigonometric functions to establish properties, create graphs, establish identities and formulae, and define inverse trigonometric functions. Use trigonometric functions and their inverses to solve trigonometric equations, and applications. Graphing in polar coordinates, and vector arithmetic.
Credit Hours:	3.0
Class Hours:	45
Lab Hours:	0
Total Contact Hours:	45

II. COURSE OBJECTIVES: *Course will:*

A. Review plane geometry with emphasis on circles and their equations.
B. Review Graphing techniques for Functions (Transformations)
C. Develop the definitions of the trigonometric functions using right triangles, general angles in the plane, and the unit circle.
D. Develop the properties and graphs for each trigonometric function along with techniques for graphing the trigonometric functions.
E. Use trigonometric functions to model and interpret applications which are cyclic in nature.
F. Develop and apply trigonometric identities.
G. Develop and apply definitions of inverse trigonometric functions.
H. Develop techniques for simplifying trigonometric expressions, and solving trigonometric equations.
I. Use trigonometric functions to solve applications involving triangles.
J. Present the polar coordinate system, and techniques for graphing polar equations.
K. Introduce vectors, and vector operations.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

A. Student Learning Outcomes**:** *Student will be able to:*

1. Write and graph equations of circles in the plane.
2. Use definitions and properties of trigonometric functions to graph and create model equations.
3. Use definitions and properties of trigonometric functions to establish identities, and solve equations.
4. Use trigonometric functions to solve applications involving triangles.
5. Convert between polar and rectangular forms of points and equations.
6. Identify and graph classic polar curves.
7. Perform arithmetic operations between vectors.

B. General Education Learning Outcomes

1. GELO #5: Analytical, Quantitative, and Scientific Reasoning
Outcome: Apply mathematical and scientific methods/principles to develop strategies, algorithms, or experiments to solve or describe problems.
Outcome: Implement strategies, algorithms, or experiments (or perform experiments) to describe the systems or solve problems.

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information)*

A. Review basic geometry concepts (distance, equations of circles…).
B. Review basic techniques for graphing functions.
C. Trigonometric Functions (Definitions, Properties, and Graphing Trigonometric Functions).
D. Analytic Trigonometry: Inverse Trigonometric Functions, Trigonometric Identities, Angle Sum & Difference and Double Angle formulae, and Solving Trigonometric Equations.
E. Applications of Trigonometric Functions: Solving applications involving triangles.
F. Polar Coordinates and Vectors: Graphing polar equations and performing basic vector arithmetic.

V. INSTRUCTIONAL MATERIALS

A. Required Text(s):

1. Sullivan, *Algebra & Trigonometry* (MyMathLab access code), 12th Edition, Pearson DDA, 2024.

B. Other Resources:

1. A Scientific Calculator, and access for MyMathLab materials will be required.

VI. METHODS OF PRESENTATION/INSTRUCTION

A. Methods of presentation typically include a combination of the following:

1. Lecture
2. Small Group Discussion
3. Using Graphing Calculators to analyze functions
4. MyMathLab Resources

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:

1. Homework and Attendance
2. Quizzes and/or Worksheets
3. MyMathLab Exercises
4. Hour Exams
5. Comprehensive Final Exam

B. SCC GRADING SCALE

A+	95-100	C+	75-79	F	59 or less
A	90-94	C	70-74		
B+	85-89	D+	65-69		
B	80-84	D	60-64		

VIII. SPECIFIC COURSE REQUIREMENTS

A. None