Course Information Form (CIF)

Course Code: MAT 125

Course Title: College Trigonometry

Department: Mathematics
PCS Code: 1.1 - Baccalaureate/Transfer
CIP Code: 27.0101
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 3-0-3
Credit Hour Distribution:

Lecture: 3	Lab: 0	Clinical: 0	**Total: 3**

General Course Information

Catalog Description

Trigonometric functions, fundamental identities, graphing, solving trigonometric equations, inverse trigonometric functions, complex numbers, and vectors.

General Course Objectives

Students will gain an in-depth understanding of trigonometric functions, identities, and graphs and how they relate to real world applications. The students will develop a solid background for any subsequent course requiring trigonometry.

Minimum Placement Levels

English	Reading	Math
None	None	None

Prerequisites

Credit in MAT 124 with a grade of C or higher, or placement

Methods of Evaluation

3-4 exams, 8-30 quizzes and/or assignments, and a cumulative final exam.

Instructional Materials and Additional Supplies

Precalculus, Functions and Graphs, 13th edition, by Swokowski and Cole; Cengage Learning, 2019.
9781337552332 - Print Text
Required: TI-84 Plus graphing calculator; $85-$120.

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Angles, Trig Functions, Unit Circle Approach	1. Define radians, degrees, six trig functions, and fundamental identities.	5	0	0
Right Triangle Trig with Applications	1. Redefine the six trig functions as ratios and use them in applications.	5	0	0
Trigonometric Graphs	1. Graph the six trig functions, identifying: amplitude, period, phase shift, asymptotes. 2. Solve simple harmonic motion problems.	3	0	0
Inverse Trig Functions and Trig Equations	1. Define and graph the inverse trig functions. 2. Solve trigonometric equations.	5	0	0
Trig Identities, Sum/Difference Formulas, Double- and Half-Angle Formulas, Product-to-Sum and Sum-to-Product Formulas	1. Use fundamental trig relations to verify trigonometric identities.	7	0	0
Law of Sines and Law of Cosines	1. Solve oblique triangles and application problems.	3	0	0
Polar Coordinates and Graphs	1. Plot points in polar coordinates, graph polar equations, and change from polar to rectangular form and vice versa.	3	0	0
Vectors	1. Demonstrate the ability to work with vector operations, dot products, and vector applications.	3	0	0
Complex Numbers in Polar Form and DeMoivre's Theorem	1. Convert complex numbers from polar to rectangular form. 2. Multiply, divide, and find powers and roots of complex numbers in polar form.	5	0	0
Review and Tests	1. Earn at least a 70 percent on each of three hour exams and the cumulative final exam.	6	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	0	0