

Math 124 – Instructional Objectives and Student Learning Outcomes

The goal of this course is to provide students with a better understanding of circular functions and triangles.

Instructional Objectives Students enrolled in this course will:	Corresponding Learning Outcomes Students that successfully complete this course will be able to:
1. Learn about angles and their measure.	<ul style="list-style-type: none"> a. Convert between degrees, minutes and seconds and decimal forms for angles. b. Find the arc length of a sector of a circle. c. Find the area of a sector. d. Convert between degrees and radians. e. Find the linear and angular speed of an object moving in circular motion.
2. Learn the trigonometric functions and their properties.	<ul style="list-style-type: none"> a. Define the trigonometric functions using the sides of a right triangle. b. Define the circular functions using the unit circle. c. Find the values of the trigonometric functions of acute angles. d. Find the values of the trigonometric functions of an angle using a point on the unit circle. e. Find the value of the trigonometric functions of an angle given the value of one function and the quadrant of the angle. f. Use the properties of trigonometric function to find their values. g. Use a calculator to find the values of the trigonometric functions. g. Graph of the trigonometric functions over one and several periods. h. Graph transformations of the trigonometric functions.
3. Learn the inverse trigonometric functions and their properties.	<ul style="list-style-type: none"> a. Define the inverse trigonometric functions. b. Find the exact value of the inverse trigonometric functions. c. Use a calculator to find the values of the inverse trigonometric functions. d. Find the value of expressions involving the inverse trigonometric functions.
4. Learn analytic trigonometry.	<ul style="list-style-type: none"> a. Learn to use algebraic techniques to simplify trigonometric expressions and establish trigonometric identities. b. Use the sum and difference identities to find exact values and to establish identities. c. Use the double-angle and half-angle formulas to find exact values and establish identities. d. Solve equations involving trigonometric functions.
5. Learn to use trigonometric functions to solve applications.	<ul style="list-style-type: none"> a. Solve right triangles. b. Solve applied problems requiring the use of right triangles. c. Solve triangles using the Law of Sines. d. Solve triangles using the Law of Cosines. e. Solve applied problems requiring the use of the Law of Sines of the Law of Cosines.

Math 124 – Instructional Objectives and Student Learning Outcomes

	f. Find the area of a triangle. g. Analyze simple harmonic motion.
6. Learn to work with polar coordinates.	a. Plot points using polar coordinates. b. Convert from polar coordinates to rectangular coordinates. c. Convert from rectangular coordinates to polar coordinates. d. Graph polar equations by plotting points.