

## College Trigonometry Essential Outcomes

The primary purpose of this course is to develop a sound knowledge of circular functions, right triangle functions, trigonometric equations, vectors, logarithms, exponential functions, and complex numbers. The following rubric can be used for all learning targets.

5	3	3	2	1	0
Student has completely <b>performed the learning targets</b> without error.	Student has completely <b>performed the learning targets</b> with minor errors.	Student has <b>performed the learning targets</b> but with major errors	Student has a start but fails to demonstrated how to <b>perform the given learning targets</b> but made an attempt.	Student has not demonstrated how to <b>perform the given learning targets</b> but made an attempt.	No attempt nor direction on possible solution.

A student who successfully completes this course will be able to:

1. Demonstrate mastery in solving exponential and logarithmic equations by:
  - a. Applying the definition of an Exponential Functions.
  - b. Defining natural exponential and logarithmic functions.
  - c. Solving compound and continuous interest functions.
  - d. Applying the definition of a Logarithmic Functions.
  - e. Use the Properties of Logarithms to find solutions.
  - f. Solve Exponential and Logarithmic Equations and Applications.
2. Solve Trigonometric Functions by:
  - a. Calculating Degree and Radian Measures.
  - b. Deriving the six Trigonometric Functions.
  - c. Verifying trigonometric relations by using the Standard Trigonometric Identities (Recognition, Use, and Proof).
  - d. Analyzing the graphs of Trigonometric Functions.
  - e. Analyzing Inverse Trigonometric Functions.
  - f. Solving problems involving the Law of Sines.
  - g. Solving problems involving the Law of Cosines.
  - h. Using Heron's Area Formula to find area of a triangle.
  - i. Solve applications to Real-Life Problems.
3. Solving Vectors by:
  - a. Defining what is a vector.
  - b. Label vectors on a coordinate system.
  - c. Determine magnitude and direction of a vector.
  - d. Apply basic Vector Operations in systems.
4. Solve Complex Numbers and Complex Arithmetic by:
  - a. Converting a complex number into vector form.
  - b. Find the nth power of a complex number.
  - c. Using DeMoivres Theorem to find the nth root of a complex number.

5. Solve conic sections by:
  - a. Deriving the vertex, directrix, and focus of a parabola.
  - b. Deriving the major vertices, minor vertices, and foci of an ellipse.
  - c. Deriving the major vertices, minor vertices, foci, and the asymptote lines of a hyperbola.