

# C-ID Descriptor

## Trigonometry

### Descriptor Details

- **Descriptor Title:** Trigonometry
- **C-ID Number:** 851
- **Units:** 3.0
- **Date of Last Revision:** 10/12/2017 04:44:05 PM PDT

### General Description

The study of trigonometric functions, their inverses and their graphs, identities and proofs related to trigonometric expressions, trigonometric equations, solving right triangles, solving triangles using the Law of Cosines and the Law of Sines, polar coordinates, and introduction to vectors.

### Prerequisites

Intermediate Algebra

### Corequisites

No information provided

### Advisories

Geometry

### Content

1. Rectangular coordinates, angles and circular/radian measure;
2. Definitions of the six trigonometric functions according to the right triangle, the unit circle, and the rectangular coordinate system;

3. Applications of the right triangle;
4. Simplification of trigonometric expressions;
5. Proofs of trigonometric identities;
6. Graphs of trigonometric functions: period, amplitude, phase shift, asymptotes;
7. Inverse trigonometric functions and their graphs;
8. Trigonometric equations;
9. Solving Triangles: Law of Sines and Law of Cosines;
10. Polar coordinates and equations; and
11. DeMoivre's Theorem and applications
12. Introduction to vectors.

### **Lab Activities**

No information provided

### **Objectives**

*Upon successful completion of the course, students will be able to:*

1. Identify special triangles and their related angle and side measures;
2. Evaluate the trigonometric function of an angle in degree and radian measure;
3. Manipulate and simplify a trigonometric expression;
4. Solve trigonometric equations, triangles, and applications;
5. Graph the basic trigonometric functions and apply changes in period, phase and amplitude to generate new graphs;
6. Evaluate and graph inverse trigonometric functions;
7. Prove trigonometric identities;
8. Convert between polar and rectangular coordinates and equations;
9. Graph polar equations;
10. Calculate powers and roots of complex numbers using DeMoivre's Theorem; and
11. Represent a vector (a quantity with magnitude and direction) in the form  $\langle a, b \rangle$  and  $ai + bj$ .

### **Evaluation Methods**

Tests, examinations, homework or projects where students demonstrate their mastery of the learning objectives and their ability to devise, organize and present complete solutions to problems.

### **Textbooks**

A college level text designed for science, technology, engineering and math majors, and supporting the learning objectives of this course.