

# TRIGONOMETRY

## Course Description

This course covers connections between right triangle trigonometry and circular functions. Graphing utilities are used to enhance learning and scientific calculators are used in finding the values of trigonometric functions and their inverses. <Prerequisites: Algebra II>

(Noncredit course: 20 lect/pres hrs, 45 lab hrs, 70 other hrs)

## Text and References

Trigonometry. Prentice-Hall Publishing, 1990

Scientific Calculator: commonly purchased include Casio, Sharp, Texas-Instrument

Graphing Calculator: Texas-Instrument 81, 83, and 86 provided by the school

## Course Goals

The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives (Addendum A). (\*designates a CRUCIAL goal)

- 1.\* define trigonometric functions
2. convert degree measures (PO 3)
3. convert radian angle measures
- 4.\* evaluate trigonometric functions
5. recall special angle values
- 6.\* find the angle measure
- 7.\* solve triangle problems
8. find triangle area
- 9.\* solve practical problems
10. connect trig and circular functions
11. identify domain and range
12. graph trigonometric functions
13. recognize inverse function restrictions
14. use a graphing calculator
15. verify trig identities
- 16.\* solve trig equations
17. evaluate complex number operations

### **Course Evaluation**

93- 100    A  
85- 92    B  
77- 84    C  
70- 76    D  
0 - 69    F

### **Course Schedule**

Monday - Friday, 1 semester on block scheduling (82 minutes/period)

## ADDENDUM A

### PERFORMANCE OBJECTIVES

1. The student will not be allowed references. The student will define trigonometric functions. Performance will be satisfactory if the student is able to define using  $x$ ,  $y$ , and  $r$  or using the relationships between the sides of a right triangle.
3. The student will be allowed a scientific calculator. The student will convert angle measures. Performance will be satisfactory if measures is/are converted and the conversion is/are to the indicated unit of measure. The following Content Goals are related to this PO: 2, 3.
4. The student will be allowed to use a scientific calculator. The student will evaluate trigonometric functions. Performance will be satisfactory if functions is/are evaluated and the value is/are to the specified unit of measure.
5. The student will not be allowed references. The student will recall special angle values. Performance will be satisfactory if values of special angles is/are recalled and the recall is/are consistent with exact values.
6. The student will be allowed a scientific calculator. The student will find the angle measure. Performance will be satisfactory if the student will be able to find the measure of an angle to the specified unit of measure.
7. The student will be allowed to use a scientific calculator. The student will solve triangle problems. Performance will be satisfactory if problems is/are solved and the procedure is appropriate.
8. The student will not be allowed references. The student will find triangle area. Performance will be satisfactory if the area is/are found and the findings is/are to a specified square unit of measure.
9. The student will not be allowed references. The student will solve practical problems. Performance will be satisfactory if the solution and procedure fit the given information.
10. The student will not be allowed references. The student will connect trig and circular functions. Performance will be satisfactory if circular functions is/are connected and the connection is/are consistent with acceptable definitions.
11. The student will not be allowed references. The student will identify domain and range. Performance will be satisfactory if domain and range are identified correctly for the given equation.

12. The student will be allowed a scientific calculator. The student will graph trigonometric functions. Performance will be satisfactory if functions is/are graphed and the graph is/are correct for the given equation.
13. The student will not be allowed references. The student will recognize restrictions on the domain of inverse functions. Performance will be satisfactory if domains is/are recognized.
14. The student will be allowed references. The student will use a graphing calculator. Performance will be satisfactory if student can discuss/ write how changes in these quantities change the graph of the equation.
15. The student will be allowed references. The student will verify trig identities. Performance will be satisfactory if trig identities is/are verified.
16. The student will be allowed a scientific calculator.  
The student will solve trig equations. Performance will be satisfactory if equations is/are solved and the solution is/are to a specified unit of measure.
17. The student will not be allowed references. The student will evaluate complex number operations. Performance will be satisfactory if operations is/are evaluated and the value is/are given in the specified form.

Developed/Revised: April 25, 1999