

# Minnesota State College Southeast

## MATH 1420: College Trigonometry

### A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites:

This course requires either of these prerequisites

MATH 1220 - College Algebra

MATH 2520 - College Algebra

Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

College Trigonometry will enable students to study the properties of triangles and trigonometric functions and their applications. Topics in this course may include trigonometric ratios, functions, graphs, identities, equations, inverse trigonometric functions, solutions of the triangle, and other applications such as but not limited to conic sections, polar coordinates, complex numbers, vectors, and DeMoivres Theorem. These topics will be introduced and skills will be developed through the use of applications in a number of areas including engineering, business, and economics. (MnTC Goal 4) (Prerequisite: MATH1220 College Algebra or equivalent) (3 credits: 3 lecture/0 lab)

**B. COURSE EFFECTIVE DATES:** 07/20/2016 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Trigonometric Functions
2. Right Triangles
3. Analytical Trigonometry
4. Polar Coordinates
5. Vectors

### D. LEARNING OUTCOMES (General)

1. Work with trigonometric functions and fundamental identities
2. Graph trigonometric functions
3. Solve inverse trigonometric functions
4. Graph inverse trigonometric functions
5. Study the trigonometry of right triangles
6. Solve problems with the law of sines and the law of cosines
7. Work with and solve trigonometric identities and formulas
8. Solve trigonometric equations
9. Convert between rectangular and polar coordinates
10. Graph polar coordinates
11. Describing and modeling vectors in two and three dimensions

## **E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

Goal 04 - Mathematical/Logical Reasoning

1. Illustrate historical and contemporary applications of mathematical/logical systems.
2. Clearly express mathematical/logical ideas in writing.
3. Explain what constitutes a valid mathematical/logical argument(proof).
4. Apply higher-order problem-solving and/or modeling strategies.

## **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

## **G. SPECIAL INFORMATION**

This course was previously MATH 2522.