Alexandria Technical and Community College

MATH 1432: Principles of Trigonometry

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: 3
Lab Hours/Week: *.*
OJT Hours/Week: *.*

Prerequisites:
This course requires any of these three prerequisites
   MATH 1421 - College Algebra
   MATH 1420 - College Algebra
   MATH 1425 - Precalculus

Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning
This course meets Minnesota Transfer Curriculum (MnTC) goal area 4. Instruction regards right angle and oblique triangle trigonometry and use of the sine law and cosine law. The focus of this course is on geometric shapes. Prerequisite: MATH1421.

B. COURSE EFFECTIVE DATES: 05/17/1999 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Analytically use the trigonometric identities.
2. Application of trigonometric functions to non right triangles.
3. Applying the Sum, Difference, Multiple-Angle, and Project-to-sum formulas.
4. Complex numbers in trigonometric form.
5. Evaluating trigonometric functions of acute angles.
6. Inverse trigonometric functions.
7. Parabolas, Ellipses, and Hyperbolas.
8. Understand and apply the radian and degree measurement system.
9. Use trigonometric functions to model and solve real-life problems.
10. Vectors in the plane and dot products.

D. LEARNING OUTCOMES (General)

1. The learner will be able to apply right angle and oblique trigonometry formulas to solve for the indicated values.
2. The learner will be able to use sine law and cosine law to solve for the indicated values.
3. The learner will be able to use sine, cosine, and tangent formulas to find all indicated values.

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. Explain what constitutes a valid mathematical/logical argument(proof).
3. Apply higher-order problem-solving and/or modeling strategies.
F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted