MATH 1060

Division: Natural Science and Mathematics
Department: Mathematics
Course: MATH 1060
Title: Trigonometry
Catalog Description:

The study of trigonometric functions, identities, solutions of triangles.

General Education Requirements: N/A
Semesters Offered: Fall, Spring
Credit/Time Requirement: Credit: 2; Lecture: 2; Lab: 0
Clock/Hour Requirements: 0
Offered for Non-Credit: No
Prerequisites: A grade of C or better in Math 1050. Graphing calculator required.

Justification:

Many students decide on a scientific major after leaving high school and are deficient in the knowledge of trigonometry. This course is roughly equivalent to high school trigonometry, but available at the college level.

Student Learning Outcomes:

Upon successful completion of this course, students will:

- have memorized the unit circle as well as the basic trigonometric definitions and be able to recall them when answering questions and solving problems
- be able to use algebraic techniques to derive trigonometric identities and solve trigonometric equations
- feel that knowledge of basic mathematics has prepared them to better understand the world around them

Content:

This course includes:

- prerequisites for trigonometry
    - distance formula
    - functions
    - inverse functions

- trigonometric Functions
    - definitions using a unit circle
    - definitions using triangles
    - right angle applications
    - graphs of the trigonometric functions
    - inverse trigonometric functions
- trigonometric identities and equations
    - fundamental identities
    - sum and difference identities
    - half angle and multiple angle identities
    - trigonometric equations
- applications
    - law of sines and cosines
    - vectors
    - complex numbers

General Education Outcomes:

6) Apply computational skills to a variety of contexts.

Homework exercises and exam problems require computational skills in a variety of theoretical and applied situations.

Key Performance Indicators:

- weekly quizzes (short answers): 10%-15% of the final grade
- 5 examinations: 40%-55% of the final grade
- 1 final examination: 15%-20% of the final grade
- daily home work assignments: 10% of the final grade

Representative Text and/or Supplies:

- Larson, *Trigonometry*, current edition.

Optimum Class Size: 25
Maximum Class Size: 30

Signatures:

I hereby submit this course syllabus:

Kari Arnoldsen, PhD, Professor

I hereby find this course consistent with the goals and resources of the Mathematics Department:

Kari Arnoldsen, PhD, Professor, Chair

I hereby find this course consistent with the goals and resources of the Natural Science and Mathematics Division:

Dan Black, EdD, Associate Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)