



## MATH 1060

**Division:** Natural Science and Mathematics

**Department:** Mathematics

**Course:** MATH 1060

**Title:** Trigonometry

**Catalog Description:**

Trigonometric functions, definitions, radian measure, graphs, solving trigonometric equations, vectors, Law of Sines, Law of Cosines, complex numbers, polar coordinates.

**General Education Requirements:** N/A

**Semesters Offered:** Fall, Spring

**Credit/Time Requirement:** Credit: 3; Lecture: 3; 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:**

A strong foundation in trigonometry is vital for students' future success in calculus and other science related majors.

**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

**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:**

- quizzes (short answers): 0%-15% of the final grade
- midterm examinations: 40%-60% of the final grade
- comprehensive final examination: 15%-25% of the final grade
- regular home work assignments: 5%-35% of the final grade

**Representative Text and/or Supplies:**

- A representative text could be Dugopolski, *Trigonometry (current edition or edition specified by instructor)*

**Optimum Class Size: 25**

**Maximum Class Size: 32**

**Signatures:**

I hereby submit this course syllabus:

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Omel Contreras, M.A., Assistant Professor

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

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Kari Arnoldsen, PhD, Professor, Chair

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

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Dan Black, EdD, Associate Professor, Dean

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

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

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)