

Naugatuck Valley Community College
STEM Division
Science, Technology, Engineering and Mathematics

Common Course Syllabus
Trigonometric Functions MAT*H185

COURSE TITLE: Trigonometric Functions, MAT*H185

COURSE DESCRIPTION: This course offers the student a development of trigonometry through a functional approach. The trigonometric functions are considered as circular functions with applications of these to the solution of triangulation problems. Topics include trigonometric identities, inverse trigonometric functions, oblique triangle trigonometry and the graphs of the trigonometric functions. Vectors will be introduced and the polar coordinate system will also be considered.

NUMBER OF CREDITS: 3 credit hours

PREREQUISITE: Grade of "C" or better in MAT*H172 (College Algebra) or an appropriate score on a college placement exam.

COURSE OBJECTIVES:

1. Provide students with a thorough exposure to the areas of trigonometry and its applications to a variety of disciplines and real life scenarios.
2. Provide students with the necessary background for the study of differential and integral calculus.
3. Develop student understanding of trigonometry integrating numerical, analytical and graphical approaches.

LEARNING OUTCOMES: At the end of this course the student will be able to do the following:

- A. Angles and the Trigonometric Functions —
 1. Represent an angle in either degree or radian measure and convert angles between each type of measure.
 2. Compute arc length, linear velocity and angular velocity in an appropriate application.
 3. Determine the trigonometric function value for any acute angle and be able to use this concept to solve applied problems.
 4. Determine the trigonometric function value for any angle employing the use of reference angles.
 5. Determine the trigonometric function value of a real number through the use of the circular function concept.
- B. Graphs of Trigonometric Functions —
 1. Graph each of the six trigonometric functions and be able to find the amplitude, period, frequency and phase shift for each.
 2. Find the amplitude, period and frequency for the equation of simple harmonic motion.
- C. Trigonometric Identities and Equations —
 1. Simplify a trigonometric expression using the fundamental identities.
 2. Verify a trigonometric identity.
 3. Determine an exact value for a specific angle by applying the trigonometric identities.
 4. Solve a trigonometric equation by using algebraic principles and trigonometric identities.

- D. Inverse Trigonometric Functions —
1. Find the angle determined by any inverse trigonometric function.
 2. Identify the graph of an inverse trigonometric function.
- E. Oblique Trigonometry and Vectors —
1. Solve an oblique triangle using the law of sines and/or the law of cosines.
 2. Use the law of sines and/or the law of cosines to solve applied problems including those involving heading, bearing and area.
 3. Find the components for a vector and perform simple vector operations.
 4. Use vectors to solve applied problems.
- F. Introduction to Polar Coordinates —
1. Graph points and equations in the polar coordinate system.
 2. Convert between the rectangular and polar coordinate systems.
 3. Graph a polar equation.

GRADING SYSTEM: For the purpose of computing numerical credit point averages, grades are evaluated as follows for each semester hour of credit. Grades on exams, papers, and quizzes, will be based on this grading system.

Numeric Grade	Acceptable Letter Grade Range to be used by the instructor	Description
90 –100	A– to A	Excellent
80 – 89	B–, B, B+	Above Average
70 – 79	C–, C, C+	Average
60 – 69	D–, D, D+	Below Average
Below 60	F	Failing

CLASS CANCELLATION PROCEDURE: *If the instructor is late, the class is expected to wait 15 minutes before leaving or until informed of a cancellation by a college official. Information on weather related closings/late openings concerning Naugatuck Valley Community College can be obtained through local radio and television stations, or via the college website (<http://www.nvcc.comnet.edu>).*

NOTE: *An alternative assignment may be given if classes are canceled due to weather.*

ACADEMIC HONESTY STATEMENT: *At NVCC we expect the highest standards of academic honesty. Academic dishonesty is prohibited in accordance with the Board of Trustee's Proscribed Conduct Policy in Section 5.2.1 of the BOT Policy Manual. This policy prohibits cheating on examinations, unauthorized collaboration on assignments, unauthorized access to examinations or course materials, plagiarism, and other proscribed activities. Plagiarism is defined as the use of another's idea(s) or phrase(s) and representing that/those idea(s) as your own, either intentionally or unintentionally. Anyone who is caught cheating on exams, plagiarizing another's work or published material will fail the course regardless of progress made in the course.*

CHILDREN ON CAMPUS: *With permission of the instructor only – Children must be attended at all times by a responsible adult. The student must notify the instructor or supervisor prior to the beginning of the class or activity that a child is present. Instructors and/or supervisors are authorized to ask the student or program participants to leave should the presence of a child be disruptive.*

CELL PHONE/PAGER USE POLICY: *Students are hereby notified that cellular phones and beepers are allowed in class only if they are turned off or turned to a silent mode. Under no circumstances are telephones to be answered in class. Students who ignore this policy may be asked to leave class. When there are extenuating circumstances that require that a student be available by phone or beeper, the student should speak to the instructor prior to class, so that together they can arrive at an agreement concerning the device.*

STUDENTS WITH SPECIAL NEEDS: *Students who may require accommodations on the basis of a learning disability are encouraged to contact the Coordinator of Learning Disabilities. Students who may require accommodations on the basis of all other disabilities should contact the Coordinator of Disability Services. After providing documentation and completing the disability disclosure process, students are then encouraged to meet with their instructor(s) to discuss the accommodations approved by the appropriate Coordinator and to complete the Accommodations Agreement form. Accommodations are not retroactive, students are therefore encouraged to meet with their instructor(s) at the beginning of each semester. Instructors, in conjunction with appropriate college personnel, will provide assistance and/or accommodations only to those students who have completed the disability disclosure and accommodations process.*

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