

Lassen Community College Course Outline

MATH 167 Trigonometry Lab

0.0 Units

I. Catalog Description

This course is to assist students in their successful completion of college level Trigonometry. Students will study numerical, graphical, and analytical properties of trigonometric functions, oblique triangles, inverse functions, and applications as well as the algebraic properties required for these topics. This course uses the text required in MATH 7 and additional materials supplied by the instructor. This course has been approved for online, hybrid and correspondence delivery.

Prerequisite:

Co-requisite: Math 7 Trigonometry

Does not transfer to UC/CSU

51 Hours Lab

Scheduled: Fall

II. Coding Information

Repeatability: Non repeatable, Take 1 time

Grading Option: Pass/No Pass

Credit Type: Credit - Not Degree Applicable

TOP Code: 170100

III. Course Objectives

A. Course Student Learning Outcomes

Upon completion of this course the student will be able to:

Use algebraic properties and rules to calculate trigonometric functions and solve problems involving right and oblique triangles.

B. Course Objectives

Upon completion of this course the student will be able to:

1. Convert degrees to radians and vice versa.
2. Define and calculate the six trigonometric functions corresponding to any given angle.
3. Graph the six basic trigonometric functions, their variations and inverses.
4. Solve trigonometric equations and use trigonometric identities in a variety of contexts and applications.
5. Use various methods, including the law of cosines and the law of sines, to solve triangles.
6. Write the algebraic representation of a vector.
7. Use vector operations to: find the angle between two vectors and determine whether two vectors are orthogonal.
8. Solve applied word problems.

IV. Course Content

The following topics may be included.

- A. Angles and degree measure
- B. Trigonometric functions
- C. Graphs of trigonometric functions and their inverses
- D. Trigonometric equations
- E. Trigonometric identities
- F. Solutions of triangles and their applications
- G. Vectors

V. Assignments

A. Appropriate Readings

Students will be required to read and study the assigned MATH 7 textbook chapters. Supplemental readings may be assigned.

B. Writing Assignments

1. Applications of representative symbol systems and application problems.
2. Understand and apply the theories and techniques taught in Math 7.
3. Additional course work may be assigned.

C. Expected Outside Assignments

Assignments may include: reading the MATH 7 text, application of formulas and theorems, application of algebraic properties, and other selections as assigned.

D. Specific Assignments that Demonstrate Critical Thinking

Students will be required to interpret mathematical principles and techniques to solve broader and more difficult problems than those presented in class. Students will solve a variety of problems, including those that demand the application of principles in a number of different contexts. Multiple measures of student performance including in-class assignments and out-of-class work.

VI. Methods of Evaluation

Traditional Delivery Evaluation

Traditional measures of student performance, including: in-class work, out of class work, and daily practice problems.

Correspondence Delivery Evaluation

Same as face to face with the exception the exclusion of participation in classroom activities. Students will be expected to complete assignments and activities equivalent to in-class assignments and activities. To fulfill correspondence students' collaborative activity requirements, there will be additional worksheets/assignments (for students to complete individually), which mirror the collaborative activities. Written correspondence and a minimum of six opportunities for feedback will be utilized to maintain effective communication between instructor and student.

Online Delivery Evaluation

Same as face to face with the use of discussion forums as participation in class activities. Students are expected to complete exercises, written responses and quizzes consistent with expectations for face-to-face class.

Hybrid Delivery Evaluation

All quizzes and exams will be administered during the in-person class time. Students will be expected to complete online assignments and activities equivalent to in class assignments and activities for the online portion of the course. Electronic communication, both synchronous and asynchronous (chat/forum) will be evaluated for participation and to maintain effective communication between instructor and students.

Web-enhanced Delivery Evaluation

Additional information and resources may be made available to students online, and students may be required to do research and complete and/or submit assignments online. Quizzes may be administered online, but exams and summative assessments must be administered face-to-face.

VII. Methods of Delivery

Check those delivery methods for which, this course has been separately approved by the Curriculum/Academic Standards Committee.

Traditional Classroom Delivery Correspondence Delivery

Hybrid Delivery

Online Delivery

Traditional Classroom Course Delivery

Methods of instruction may include, but are not limited to:

Lecture, laboratory, demonstrations, discussion, and computer assisted instruction.

Correspondence Course Delivery

Assigned readings, instructor-generated handouts, lecture materials, exercises and assignments equal to face to face instructional delivery. Written correspondence and a minimum of six opportunities for feedback will be utilized to maintain effective communication between instructor and student.

Online Course Delivery

Assigned readings, instructor-generated typed handouts, typed lecture materials, web links to videos or resources, and assignments equivalent to face to face instructional delivery. Student-student and teacher-student interaction and a minimum of six opportunities for feedback will be utilized to maintain effective communication between instructor and student.

Hybrid Course Delivery

A combination of traditional classroom and online instruction will be utilized. Each semester a 34 hours will be taught face-to face by the instructor and 17 hours will be instructed online through the technology platform adopted by the District. Traditional class instruction will consist of exercises/assignments, lectures, visual aids, and practice exercises. Online delivery will consist of exercises/assignments, lecture posts, discussions, adding extra resources and other media sources as appropriate.

VIII. Representative Texts and Supplies

Open Educational Resource Textbook: *Pre-Calculus*, Jay Abramson Senior Contributing Editor, Openstax, 2017, Available in class Canvas section (free), online (free at <https://openstax.org/details/books/precalculus>) or LCC Bookstore (minimal cost for printing).

Supplies: Scientific Calculator, Instructor provided handouts.

IX. Discipline/s Assignment

Mathematics

X. Course Status

Current Status: Active

Original Approval Date: 03/05/2019

Board Approval: 03/12/2019

Chancellor's Office Approval: 03/15/2019

Revised By: Robert Schofield

Curriculum/Academic Standards Committee Revision Date: 03/15/2022