



High School Course of Study Approval Request Form

High School Site	Signature - Principal or Academic AP Designee	Signature - Teacher Leader <small>(enter N/A if no Teacher Leader)</small>	Comments:
American Canyon HS	Andrew Goff	Ron Eick	
Napa HS	Kate Gauger	Heather Oja	
Napa Valley Independent Studies	Susan Wilson	NA	
New Tech HS	Riley Johnson	Jon Southam	
Valley Oak HS	Maria Cisneros	Rafael Garcia Avila	
Vintage HS	Katelyn Estudillo	Brandon DeJesus	

Course submitted by:	Annie Petrie	School Site:	NVUSD Instructional Services
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Executive Director, Secondary Education: _____

New Revised

COMPUTER (Short) TITLE:	CLG Math
TRANSCRIPT SPECIAL COURSE TITLE:	College Trig
COURSE NUMBER:	CC401 [NVC Math 108]
GRADE LEVEL:	11 - 12
LENGTH OF COURSE:	1 College Semester (1 year)
GRAD REQUIREMENT:	Mathematics (H)
CSU/UC REQUIREMENT:	"c" (Mathematics)
COLLEGE PREP:	Yes
HONORS:	Yes
VOCATIONAL ED:	No
CALPADS CODE:	2490 (Dual Enrollment College Course - Mathematics)
PATHWAY CODE:	No
NCLB :	Yes
NCLB CORE SUBJECT:	MT

Course Description

The course provides a strong trigonometric foundation for the study of Calculus. Included are trigonometric functions, their inverses and their graphs, identities and proofs related to trigonometric expressions, trigonometric equations, solving right triangles, solving triangles using the Law of Cosines and the Law of Sines, polar coordinates, and an introduction to vectors. A graphing calculator is required.

Course Outline Information

1. Student Learning Outcomes:

- A. Graph trigonometric equations by hand and by calculator.
- B. Solve trigonometric equations and triangles.
- C. Establish trigonometric identities.

2. Course Objectives: Upon completion of this course, the student will be able to:

- A. Identify special triangles and their related angle and side measures;
- B. Evaluate the trigonometric function of an angle in degree and radian measure;
- C. Manipulate and simplify a trigonometric expression;
- D. Solve trigonometric equations, triangles, and applications;
- E. Graph the basic trigonometric functions and apply changes in period, phase and amplitude to generate new graphs;
- F. Evaluate and graph inverse trigonometric functions;
- G. Prove trigonometric identities;
- H. Convert between polar and rectangular coordinates and equations;
- I. Graph polar equations;
- J. Calculate powers and roots of complex numbers using DeMoivre's Theorem;
- K. Represent a vector (a quantity with magnitude and direction) in the form $a\mathbf{i} + b\mathbf{j}$.

3. Course Content

- 1) Rectangular coordinates, angles and circular/radian measure;
- 2) Definitions of the six trigonometric functions according to the right triangle, the unit circle, and the rectangular coordinate system;
- 3) Applications of the right triangle;
- 4) Simplification of trigonometric expressions;
- 5) Proofs of trigonometric identities;
- 6) Graphs of trigonometric functions: period, amplitude, phase shift, asymptotes;
- 7) Inverse trigonometric functions and their graphs;
- 8) Trigonometric equations;
- 9) Solving Triangles: Law of Sines and Law of Cosines;
- 10) Polar coordinates and equations; and
- 11) DeMoivre's Theorem and applications
- 12) Introduction to vectors.

4. Methods of Instruction:

- Discussion
- Lecture
- In-class practice problems.

5. Methods of Evaluation: Describe the general types of evaluations for this course and provide at least two, specific examples.

Typical classroom assessment techniques

Exams/Tests -- For example, an exam on applications of trigonometric functions might include a selection of computational and application problems involving right-triangle trigonometry, The Law of Sines and The Law of Cosines. An exam on graphing trigonometric functions might

include a selection of functions to graph involving the six trigonometric functions and their transformations.

Quizzes -- For example, a quiz on angle measurements might include a selection of problems involving the conversion between radian and degree measurement. A quiz on the unit circle might ask the student to identify the coordinates of points on the unit circle corresponding to the common angles.

Class Work -- For example, students might be asked to solve example problems involving The Law of Sines or using DeMoivre's Theorem, either in groups or individually.

Home Work -- A typical homework assignment might include a selection of problems from the corresponding section of the book, or a worksheet or project to be completed outside of class.

Final Exam --

6. Minimal Percentage for Passing: 60%
Letter Grade Only

7. Assignments: State the general types of assignments for this course under the following categories and provide at least two specific examples for each section.

A. Reading Assignments

Reading assignments will be given from the text or other materials such as:

1. Read the section on the Properties of the Trigonometric Functions.
2. Read the section on The Law of Sines.

B. Writing Assignments

Writing assignments will involve students solving problems from the text or other materials such as:

1. Find the exact value of: $\sin 90 + \tan 45$
2. Solve the equation on the interval zero to 2π : $\cos(2x) = \cos x$

C. Other Assignments

As needed

Instructional Materials

Title: ***Trigonometry, 8th Ed***

Author: **McTeague**

Publisher: **Cengage**

[New - request for adoption approval submitted at this Board Meeting.]