MATH 58 Course Outline as of Fall 2026

CATALOG INFORMATION

Dept and Nbr: MATH 58 Title: PRECALCULUS TRIGONOMETRY
Full Title: Precalculus Trigonometry
Last Reviewed: 10/20/2025

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	6.5	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00 Total Student Learning Hours: 157.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade Only
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
Students will study topics from college trigonometry, including trigonometric identities, equations, functions, inverse functions, graphs, polar coordinates, parametric equations, complex numbers, vectors, and applications.

Prerequisites/Corequisites:
Course Completion of MATH 25

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Students will study topics from college trigonometry, including trigonometric identities, equations, functions, inverse functions, graphs, polar coordinates, parametric equations, complex numbers, vectors, and applications. (Grade Only)
Prerequisites/Corequisites: Course Completion of MATH 25
Recommended:
Limits on Enrollment:

Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**		Effective:	Inactive:
	B	Communication and Analytical Thinking	Fall 2025	
	L2	Mathematical Concepts & Quantitative Reasoning		
	MC	Math Competency		
	B	Communication and Analytical Thinking	Fall 2006	Fall 2025
	B	Communication and Analytical Thinking	Fall 1981	Fall 1999
	MC	Math Competency		
CSU GE:	**Transfer Area**		Effective:	Inactive:
	B4	Math/Quantitative Reasoning	Fall 2006	
	B4	Math/Quantitative Reasoning	Fall 1981	Fall 1996
IGETC:	**Transfer Area**		Effective:	Inactive:

CSU Transfer: Transferable Effective: Fall 2006 Inactive:

UC Transfer: Effective: Inactive:

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

Approval and Dates

Version:	010	Course Created/Approved:	8/1/1981
Version Created:	9/9/2024	Course Last Modified:	10/21/2025
Submitter:	Dean Gooch	Course last full review:	10/20/2025
Version Status:	Approved (Changed Course)	Prereq Created/Approved:	10/20/2025
Version Status Date:	10/20/2025	Semester Last Taught:	
Version Term Effective:	Fall 2026	Term Inactive:	

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Define and graph the six trigonometric functions and their inverses, solve equations involving trigonometric functions symbolically and graphically, and verify trigonometric identities.
2. Use trigonometric functions, identities, and the Laws of Sines and Cosines to solve application problems.
3. Define, graph, and demonstrate appropriate applications of vectors, complex numbers in trigonometric form, polar coordinates, and parametric equations.

Objectives:

At the conclusion of this course, the student should be able to:
1. Define and apply the trigonometric functions, using right triangle and unit circle approaches, and using degree and radian measures.
2. Verify and apply trigonometric identities.
3. Solve equations involving trigonometric functions both graphically and analytically.
4. Graph trigonometric functions and their transformations.
5. Define and graph the inverse trigonometric functions.
6. Solve applications and modeling problems using the trigonometric functions, identities, and the laws of sines and cosines.
7. Represent complex numbers in trigonometric form and perform operations.
8. Use vectors to model applications in mathematics and science.
9. Leverage technology to solve trigonometric equations.
10. Employ technology to analyze and graph polar and parametric equations.

Topics and Scope:

I. Trigonometric Functions
- A. Radian and degree measures of angles
  - 1. Arc length
  - 2. Area of a sector
  - 3. Linear and angular velocity
- B. Right triangle and unit circle definitions
- C. Characteristics of trigonometric functions

II. Identities and Conditional Equations
- A. Fundamental identities
- B. Sum and difference identities
- C. Related identities and their derivations
- D. Conditional trigonometric equations and applications
- E. Solving trigonometric equations graphically using technology

III. Graphical Representation of Trigonometric Functions
- A. Amplitude
- B. Reflections
- C. Period
- D. Phase (horizontal) shift
- E. Vertical shifts
- F. Modeling

IV. Inverse Trigonometric Functions
- A. Definitions
- B. Properties
- C. Graphs

V. Solutions of Triangles
- A. Right triangles
- B. Oblique triangles
- C. Laws of Sines and Cosines
- D. Applications

VI. Complex Numbers, Polar Coordinates, and Parametric Equations
- A. Complex numbers
  - 1. Graphical representation
  - 2. Trigonometric form of complex numbers
- B. DeMoivre's Theorem
- C. Polar coordinates
  - 1. Converting between polar and Cartesian coordinates

2. Converting between polar and Cartesian equations
3. Graphs of polar equations
a. Characteristics of graphs
b. Graphing with and without technology

D. Parametric equations

VII. Two Dimensional Vectors

A. Geometric and analytic definitions
B. Algebra of vectors
C. Trigonometric form of vectors
D. Dot product
E. Applications

Assignment:

1. Reading assignments (10-60 pages per week)
2. Problem sets (1-8 per week)
3. Quiz(zes) (0-4 per week)
4. Project(s) (0-10)
5. Exams (2-6)
6. Final exam

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Problem sets	Problem solving 5 - 20%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None	Skill Demonstrations 0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Quiz(zes), exams, final exam	Exams 70 - 90%

Other: Includes any assessment tools that do not logically fit into the above categories.

Project(s)	Other Category 0 - 10%

Representative Textbooks and Materials:
Precalculus: Mathematics for Calculus. 7th ed. Stewart, James and Redlin, Lothar and Watson, Saleem. Cengage L. 2016. (classic).
Precalculus. 3rd corrected ed. Stitz, Carl and Zeager, Jeffrey. Open Source Text. 2013. (classic).
Precalculus. 3rd corrected ed. Stitz, Carl and Zeager, Jeffrey, https://www.stitz-zeager.com/szprecalculus07042013.pdf, NC SA
Trigonometry: A Unit Circle Approach. 12th ed. Sullivan, Michael. Pearson. 2025.

OTHER REQUIRED ELEMENTS

STUDENT PREPARATION

Matric Assessment Required:	M	Requires Math Assessment
Prerequisites-generate description:	U	User Generated Text
Advisories-generate description:	NA	No Advisory
Prereq-provisional:	N	NO
Prereq/coreq-registration check:	Y	Prerequisite Rules Exist
Requires instructor signature:	N	Instructor's Signature Not Required

BASIC INFORMATION, HOURS/UNITS & REPEATABILITY

Method of instruction:	02	Lecture
Area department:	MATH	Mathematics
Division:	73	Science, Technology, Engineering & Mathematics
Special topic course:	N	Not a Special Topic Course
Program status:	1	Both Certificate and Major Applicable
Repeatability:	00	Two Repeats if Grade was D, F, NC, or NP
Repeat group id:		

SCHEDULING

Audit allowed:	N	Not Auditable
Open entry/exit:	N	Not Open Entry/Open Exit
Credit by exam:	N	Credit by examination not allowed
Budget code: Program:	0000	Unrestricted
Budget code: Activity:	1701	Mathematics-General

OTHER CODES

Discipline:	Mathematics	
Basic skills:	N	Not a Basic Skills Course
Level below transfer:	Y	Not Applicable
CVU/CVC status:	N	Not Distance Ed
Distance Ed Approved:	N	
Emergency Distance Ed Approved:	Y	Fully Online Partially Online Online with flexible in-person activities
Credit for Prior Learning:	N	Agency Exam
	N	CBE
	N	Industry Credentials
	N	Portfolio
Non-credit category:	Y	Not Applicable, Credit Course
Classification:	Y	Liberal Arts and Sciences Courses
SAM classification:	E	Non-Occupational
TOP code:	1701.00	Mathematics, General
Work-based learning:	N	Does Not Include Work-Based Learning
DSPS course:	N	Not a DSPS Course
In-service:	N	Not an In-Service Course