MATH 27 Course Outline as of Fall 1999

CATALOG INFORMATION

Dept and Nbr: MATH 27 Title: COL ALG AND TRIG
Full Title: College Algebra and Trigonometry
Last Reviewed: 10/20/2025

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	5.00	Lecture Scheduled	5.00	17.5	Lecture Scheduled	87.50
Minimum	5.00	Lab Scheduled	0	8	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	5.00		Contact Total	87.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 175.00 Total Student Learning Hours: 262.50

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:	MATH 57

Catalog Description:
Topics from college algebra and trigonometry, including analytic geometry, functions and their graphs, trigonometric functions of angles, trigonometric identities, trigonometric solution of triangles, complex numbers, vectors, sequences and series.

Prerequisites/Corequisites:
Completion of MATH 155 or higher (VE) OR Completion of MATH 155 or higher (VF) OR Completion of MATH 155 or higher (V1)

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: College algebra and trigonometry topics, including analytic geometry, functions and graphs, trigonometric functions of angles, trigonometric identities, trigonometric solution of triangles, complex numbers, vectors, sequences and series. (Grade Only)
Prerequisites/Corequisites: Completion of MATH 155 or higher (VE) OR Completion of MATH 155 or higher (VF) OR Completion of MATH 155 or higher (V1)

Recommended:
Limits on Enrollment:
Transfer Credit: CSU;UC.
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 1981	Fall 2025
	MC	Math Competency		
CSU GE:	**Transfer Area**		Effective:	Inactive:
	B4	Math/Quantitative Reasoning	Fall 1996	
	B4	Math/Quantitative Reasoning	Fall 1981	Spring 1984
IGETC:	**Transfer Area**		Effective:	Inactive:
	2A	Mathematical Concepts & Quantitative Reasoning	Fall 1998	

CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive:
UC Transfer:	Transferable	Effective:	Fall 1998	Inactive:

CID:

Certificate/Major Applicable:
Not Certificate/Major Applicable

COURSE CONTENT

Outcomes and Objectives:
To be successful, students should be able to:
1. Perform advanced operations with functions (using symbolic, graphical, and numerical representations) and apply knowledge to modeling problems.
2. Define and graph inverse functions.
3. Solve algebraic equations over the complex numbers.
4. Define and apply characteristics of functions (including intercepts, turning points, intervals of positive/negative, increasing/decreasing value) in graphing polynomial, rational, algebraic, exponential, logarithmic, and trigonometric functions.
5. Solve algebraic and trigonometric equations graphically and symbolically.
6. Graph circles, functions, parametric representations, and polar functions using polar coordinates.
7. Apply trigonometric functions and identities to solve problems in mathematics and science.

8. Solve right and oblique triangles using the trigonometric functions and the laws of sines and cosines.
9. Use vectors to model applications in mathematics and science.
10. differentiate between an asymptote and a hole in the graph.

Topics and Scope:

INTRODUCTION TO ANALYTIC GEOMETRY
Symmetry, Distance formula, Equations of circles,Introduction to parametric equations, Systems of nonlinnear equations.
FUNCTIONS
Symbolic, graphical, and numerical representations,Operations and composition, Inverse functions, Modeling.
GRAPHS OF FUNCTIONS
Definition and characteristics, Horizontal and vertical shifts, scaling, Graphical solutions and numerical solutions of equations.
CATALOG OF GRAPHS
Graphs of polynomial, rational, algebraic, exponential and logarithmic functions, Introduction to limit concepts, Graphs of of Inverse functions.
TRIGONOMETRIC FUNCTIONS
Definition, Characteristics of trigonometric functions, Radian measure, arc length ond area of a sector, Inverse trigonometric functions,Graphs.
IDENTITIES AND CONDITIONAL EQUATIONS
Fundamental identities, Sum and difference of angles and related identities, Trigonometric equations.
SOLUTIONS OF TRIANGLES
Right triangles, Oblique triangles, Laws of Sines and Cosines.
COMPLEX NUMBERS
Definitions and operations, Graphical representation.
VECTORS-2 DIMENSIONAL
Geometric and analytic definitions,Sum, differences, scalar multiplication 01d dot product.
EQUENCES AND SERIES
Finite and infinite geometric sequences and series.

Assignment:

The student will have daily outside reading, problem set assignments from required text(s), or instructor chosen supplementary materials. Instructional methodology may include, but not limited to: lecture, demonstrations, oral recitation, discussion, supervised practice, independent study, outside project or other assignments.

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 and skill demonstrations 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.

Homework problems, Quizzes, Exams	Problem solving 25 - 50%

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

Performance exams	Skill Demonstrations 30 - 70%

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

Multiple choice, True/false	Exams 3 - 25%

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

WRITING ASSIGNMENTS	Other Category 2 - 10%

Representative Textbooks and Materials:
Text(s) required of each student will be selected by the department, a committee of the department, or the responsible instructor from the books currently available. Choices could include:

Larson/Hostetler/Edwards, PRECALCULUS, D.C. Heath, 1994
Ruud/Shell, PRELUDE TO CALCULUS, PWS, 1993
Swokowski, FUNDAMENTALS OF ALGEBRA AND TRIGONOMETRY, 8th Ed., 1993
Kaufmann, COLLEGE ALGEBRA AND TRIGONOMETRY, 2nd Ed., 1990