

Glendale College  
**Course Outline of Record Report**

Course ID 003243  
 Revision - September 2025

**MATH102 : Trigonometry**

**General Information**

Author:	<ul style="list-style-type: none"> <li>Suzanne Palermo</li> </ul>
Course Code (CB01) :	MATH102
Course Title (CB02) :	Trigonometry
Department:	MATH
Proposal Start:	Fall 2026
TOP Code (CB03) :	(1701.00) Mathematics, General
CIP Code:	(27.0101) Mathematics, General.
SAM Code (CB09) :	E - Non-Occupational
Distance Education Approved:	No
Will this course be taught asynchronously?:	No
Course Control Number (CB00) :	CCC000140907
Curriculum Committee Approval Date:	09/24/2025
Board of Trustees Approval Date:	11/11/2025
Last Cyclical Review Date:	04/01/2020
Course Description and Course Note:	MATH 102 is a course in plane trigonometry. The course emphasizes the analytic aspects of the subject. Topics include properties of geometric figures, trigonometric functions of any angle, trigonometric identities, half-angles, trigonometric equations, applications of trigonometric functions, functions, complex numbers, and polar and parametric equations.
Justification:	Content Change
Academic Career:	<ul style="list-style-type: none"> <li>Credit</li> </ul>
Mode of Delivery:	<ul style="list-style-type: none"> <li>In-Person</li> <li>Remote</li> <li>Hybrid</li> <li>Proctored Online</li> </ul>
Author:	No value
Course Family:	No value

**Academic Senate Discipline**

Primary Discipline:	<ul style="list-style-type: none"> <li>Mathematics</li> </ul>
Alternate Discipline:	No value
Alternate Discipline:	No value

### Course Development

**Basic Skill Status (CB08)**

Course is not a basic skills course.

Allow Students to Gain Credit by Exam/Challenge

**Course Special Class Status (CB13)**

Course is not a special class.

**Pre-Collegiate Level (CB21)**

Not applicable.

**Grading Basis**

- Grade with Pass / No-Pass Option

**Course Support Course Status (CB26)**

Course is not a support course

### General Education and C-ID

**General Education Status (CB25)**

GE Status (CSU) B4, (UC) 2

**Transferability**

Transferable to CSU only

**Transferability Status**

Approved

**GCC General Education Requirements**

Area 2: Mathematical Concepts and Quantitative Reasoning

**Area**

Mathematical Concepts and Quantitative Reasoning

**Status**

Approved

**Approval Date**

09/02/2025

**Comparable Course**

No Comparable Course defined.

### Units and Hours

**Summary**

**Minimum Credit Units (CB07)** 3

**Maximum Credit Units (CB06)** 3

**Total Course In-Class (Contact Hours)** 54

**Total Course Out-of-Class Hours** 108

**Total Student Learning Hours** 162

**Credit / Non-Credit Options**

**Course Type (CB04)**

Credit - Degree Applicable

**Noncredit Course Category (CB22)**

Credit Course.

**Noncredit Special Characteristics**

No Value

**Course Classification Code (CB11)**

Credit Course.

**Funding Agency Category (CB23)**

Not Applicable.

Cooperative Work Experience Education Status (CB10)

Variable Credit Course

**Weekly Student Hours**

	In Class	Out of Class
Lecture Hours	3	6
Laboratory Hours	0	0
Studio Hours	0	0

**Course Student Hours**

<b>Course Duration (Weeks)</b>	18
<b>Hours per unit divisor</b>	54

**Course In-Class (Contact) Hours**

Lecture	54
Laboratory	0
Studio	0
<b>Total</b>	54

**Course Out-of-Class Hours**

Lecture	108
Laboratory	0
Studio	0
<b>Total</b>	108

**Time Commitment Notes for Students**

No value

**Units and Hours - Weekly Specialty Hours**

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

**Prerequisites, Corequisites, Recommended Corequisites, and Recommended Preparation**

**Prerequisite**

Placement is based on academic background or satisfactory completion of Intermediate Algebra or the equivalent.

**Entry Standards**

Entry Standards	Description
No value	No value

<b>Course Limitations</b>	
Cross Listed or Equivalent Course	Description
No value	No value

<b>Requisite Validation</b>
<p><b>Upload Statistical Validation and/or other documents (if necessary)</b></p> <p>No Value</p>

<b>Specifications</b>	
<b>Methods of Instruction</b>	
Methods of Instruction	Lecture
Methods of Instruction	Discussion
Methods of Instruction	Demonstrations
<b>Out of Class Assignments</b>	
<ul style="list-style-type: none"> <li>• Computer or graphing calculator assignments</li> <li>• Homework (e.g. problem sets)</li> </ul>	
<b>Methods of Evaluation</b>	<b>Description of Activity/Interaction</b>
In-Class Activity (answering journal prompt, group activity)	Group assignments and projects
Exam/Quiz/Test	Quizzes
Exam/Quiz/Test	4 or more assessments are required
Exam/Quiz/Test	A comprehensive final examination is required
<b>Textbook Rationale</b>	
No Value	
<b>Textbooks</b>	

Author	Title	Publisher	Date	ISBN
McKeague, Charles	Trigonometry with Support for Glendale Community College	XYZ Textbooks	2025	1630984396
<b>Other Instructional Materials (i.e. OER, handouts)</b>				
No Value				

## Learning Outcomes

### Course Objectives

Identify special triangles and their related angle and side measures.

Evaluate the trigonometric function of an angle in degree and radian measure.

Manipulate and simplify a trigonometric expression.

Solve trigonometric equations, triangles, and applications.

Graph the basic trigonometric functions and apply changes in period, phase and amplitude to generate new graphs.

Evaluate and graph inverse trigonometric functions.

Prove trigonometric identities.

Convert between polar and rectangular coordinates and equations.

Graph polar equations.

Calculate powers and roots of complex numbers using DeMoivre's Theorem.

Represent a vector (a quantity with magnitude and direction) in the form  $\langle a,b \rangle$  and  $ai+bj$ .

**SLOs**

**Demonstrate the knowledge of definitions and graphs of the trigonometric functions.**

Expected Outcome Performance: 70.0

*ILOs*  
Core ILOs Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.

*ILOs*  
General Education apply techniques of analysis and critical thinking to critique real world and theoretical topics and issues

*MATH*  
Mathematics - A.A. Degree  
Major solve applications in math and science using derivatives, integrals, differential equations and linear algebra.

**Verify trigonometric identities and formulas.**

Expected Outcome Performance: 70.0

*ILOs*  
Core ILOs Analyze and solve problems using critical, logical, and creative thinking; ask questions, pursue a line of inquiry, and derive conclusions; cultivate creativity that leads to innovative ideas.

Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.

*ILOs*  
General Education apply techniques of analysis and critical thinking to critique real world and theoretical topics and issues

*MATH*  
Mathematics - A.A. Degree  
Major solve applications in math and science using derivatives, integrals, differential equations and linear algebra.

**Demonstrate the knowledge of vectors, complex numbers, and polar coordinates.**

Expected Outcome Performance: 70.0

*ILOs*  
Core ILOs Use quantitative and/or analytical mathematical skills to solve problems and to interpret, evaluate, and process information and data to draw logical conclusions and support claims.

*ILOs*  
General Education apply techniques of analysis and critical thinking to critique real world and theoretical topics and issues

*MATH*  
Mathematics - A.A. Degree  
Major solve applications in math and science using derivatives, integrals, differential equations and linear algebra.

**Additional SLO Information**

**Does this proposal include revisions that might improve student attainment of course learning outcomes?**

No

**Is this proposal submitted in response to learning outcomes assessment data?**

No

**If yes was selected in either of the above questions for learning outcomes, explain and attach evidence of discussions about learning outcomes.**

No Value

**SLO Evidence**

No Value

## Course Content

### Lecture Content

#### Algebra Review (8 hours)

- The rectangular coordinate system and the distance formula
- Function notation, domain and range of a function
- Inverses of functions
- Graphs of functions using transformations of functions
- Simplified form of square roots
- Factoring
- Complex fractions

#### The Trigonometric Functions (8 hours)

- Definition of trigonometric functions
- Trigonometric functions of any angle
- Right triangle trigonometry and applications

#### Angle Measure and Graphing (8 hours)

- Angle measure (degrees and radians)
- The unit circle
- Graph the basic trigonometric functions and apply changes in period, phase and amplitude to generate new graphs

#### Trigonometric Identities (9 hours)

- Fundamental trigonometric identities (reciprocal and Pythagorean identities)
- Identities involving sums and differences of two angles
- The double-angle identities
- The half-angle identities
- Simplify trigonometric expressions
- Prove trigonometric identities

#### Trigonometric Equations and the Inverse Trigonometric Functions (9 hours)

- Solving trigonometric equations
- Inverse trigonometric functions

#### Oblique Triangles (6 hours)

- The law of sines
- The law of cosines
- Vectors

#### Complex Numbers and Polar Coordinates (6 hours)

- Complex numbers and their graphs
- Trigonometric form of a complex number
- De Moivre's theorem
- Polar coordinates and equations
- Polar graphs

**Total Hours: 54**

## Additional Information

### Repeatability

Not Repeatable

### Justification (if repeatable was chosen above)

No Value

**Is it possible this course will have a material fee?**

No

**I have contacted my library liaison (<https://campusguides.glendale.edu/faculty/liaisons>):**

No

**What term(s) will this course be offered?**

Fall/Winter/Spring/Summer

**Will any additional resources be needed for this course? (Click all that apply)**

- No

**If additional resources are needed, add a brief description and cost in the box provided.**

No Value