Glendale College

Course Outline of Record Report

Course ID 010704

Revision - November 2025

MATH101E : Algebra and Trigonometry for Calculus

General Information

Author:	• Suzanne Palermo
Course Code (CB01) :	MATH101E
Course Title (CB02) :	Algebra and Trigonometry for Calculus
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) :	CCC000646449
Curriculum Committee Approval Date:	11/12/2025
Board of Trustees Approval Date:	12/09/2025
Last Cyclical Review Date:	05/22/2024
Course Description and Course Note:	MATH 101E is a course that prepares students for calculus. Topics include polynomial, absolute value, radical, rational, exponential, logarithmic, trigonometric functions and their graphs, inverses, expressions, equations, inequalities, and trigonometric identities. Note: No credit will be given for MATH 101E if you have completed MATH 110 or MATH 110A AND MATH 110B. The maximum number of units given for MATH 101E AND MATH 100, MATH 110A or MATH 111 is 6 units.
Justification:	Content Change
Academic Career:	• Credit
Mode of Delivery:	No value
Author:	No value
Course Family:	No value

Academic Senate Discipline

Primary Discipline:	• Mathematics
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 both UC and CSU

Transferability Status

Approved

Cal-GETC	Area	Status	Approval Date	Comparable Course
Area 2: Mathematical Concepts and Quantitative Reasoning	Mathematical Concepts and Quantitative Reasoning	Approved	09/02/2025	No Comparable Course defined.

GCC General Education Requirements	Area	Status	Approval Date	Comparable Course
Area 2: Mathematical Concepts and Quantitative Reasoning	Mathematical Concepts and Quantitative Reasoning	Approved	09/02/2025	No Comparable Course defined.

Units and Hours

Summary

Minimum Credit Units (CB07)	4
Maximum Credit Units (CB06)	4
Total Course In-Class (Contact) Hours	108
Total Course Out-of-Class Hours	108
Total Student Learning Hours	216

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	3	0
Studio Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	54
Course In-Class (Contact) Hours	
Lecture	54
Laboratory	54
Studio	0
Total	108
Course Out-of-Class Hours	
Lecture	108
Laboratory	0
Studio	0
Total	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.

Entry Standards

Entry Standards	Description
No value	No value

Course Limitations

Cross Listed or Equivalent Course	Description
No value	No value

Requisite Validation

Upload Statistical Validation and/or other documents (if necessary)

No Value

Specifications

Methods of Instruction

Methods of Instruction	Lecture
Methods of Instruction	Laboratory
Methods of Instruction	Demonstrations
Methods of Instruction	Collaborative Learning

Out of Class Assignments

- Homework (e.g. problem sets related to course content)
- Group assignments
- Online graphing software or computer assignments

Methods of Evaluation	Description of Activity/Interaction
Exam/Quiz/Test	Quizzes

Exam/Quiz/Test	Four to seven chapter examinations are required
Exam/Quiz/Test	A comprehensive final examination is required

Textbook Rationale

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
Robert Blitzer	Precalculus Essentials	Pearson	2022	9780137417698

Other Instructional Materials (i.e. OER, handouts)

Description	OpenStax Algebra and Trigonometry 2e
Author	Jay Abramson
Citation	https://openstax.org/books/algebra-and-trigonometry-2e/pages/1-introduction-to-prerequisites
Online Resource(s)	

Learning Outcomes

Course Objectives

Solve equations including rational, linear, polynomial, exponential, absolute value, radical, and logarithmic.

Solve linear, non-linear, and absolute value inequalities.

Graph the following types of functions and relations: polynomial, rational, exponential, and logarithm.

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

Apply transformations to the graphs of functions and relations.

Recognize the relationship between functions and their inverses graphically and algebraically.

Evaluate inverse trigonometric functions.

Solve exponential and logarithmic equations.

Evaluate a trigonometric function at an angle whose measure is given in degrees and radians.

Simplify trigonometric expressions.

Solve trigonometric equations.

Apply various trigonometric identities.

SLOs

Solve algebraic equations and inequalities as well as graph functions. Expected Outcome Performance: 70.0

ST DV Liberal Arts: Science and Mathematics Emphasis A.A. Degree	Apply mathematical and scientific ideas to analyze real-world situations.

Use trigonometric identities as well as solve trigonometric equations and graph trigonometric functions. Expected Outcome Performance: 70.0

ST DV Liberal Arts: Science and Mathematics Emphasis A.A. Degree	Apply mathematical and scientific ideas to analyze real-world situations.

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

Foundational Algebra (12 hours)

- Exponents
- Rational exponents
- Radical expressions
- Adding and subtracting radical expressions
- Multiplying and dividing radical expressions
- Solving equations with radicals
- Adding and subtracting polynomials
- Multiplying polynomials and dividing polynomials
- The greatest common factor and factoring by grouping
- The difference of two squares; the sum and difference of two cubes
- Factoring trinomials
- Solving equations by factoring
- Algebraic expressions
- Rational Expressions

College Algebra (28 hours)

- Equations and Inequalities
    - First degree equations
    - Quadratic equations
    - Other types of equations (rational, radical, absolute value)
    - Linear and absolute value inequalities
    - Quadratic and other non-linear inequalities
- Functions and Their Graphs
    - Cartesian Coordinate System
    - Function (linear, polynomial, rational, radical, absolute value) definition, evaluation, domain and range
    - Graphs of functions (linear, quadratic, polynomial, rational, radical, absolute value) including vertices, asymptotic behavior, intercepts, and symmetry
    - Graphs of piecewise functions
    - Transformations of functions (linear, quadratic, rational, radical, absolute value)
    - Quadratic functions
    - Algebra of functions
    - One-to-one functions and inverses
- Rational Expressions
    - Complex fractions
    - Factoring for Calculus
        - Multiplying by conjugates
        - Factoring fractional exponents
    - Difference quotients
- Exponential and Logarithmic Functions
    - Exponential functions
    - Logarithmic functions
    - Transformations of exponential and logarithmic functions
    - Properties of logarithms
    - Exponential and logarithmic equations
    - Common and natural logarithms

Trigonometry (14 hours)

- Trigonometric Functions
    - Definition of the six trigonometric functions of a right triangle
    - Definition of the six trigonometric functions of any angle on the rectangular coordinate system Inverse trigonometric functions
    - Right triangle trigonometry
- Graphing Trigonometric Functions
    - The six trigonometric functions on the unit circle
    - Graphs of functions involving sine, cosine, tangent, secant, cosecant and cotangent
    - Graphs of the trigonometric functions: period, amplitude, phase shift, and asymptotes
- Trigonometric Identities
    - Simplifying trigonometric expressions
    - Identities involving sums and differences of two angles
    - Double-angle identities
    - Half-angle identities
    - Sum-to-product and product-to-sum identities
- Trigonometric Equations and Inverse Trigonometric Functions

- Solving trigonometric equations
- Inverse trigonometric functions

Total Hours: 54

Laboratory/Studio Content

Foundational Algebra (15 hours)

- Exponents
- Rational exponents
- Radical expressions
- Adding and subtracting radical expressions
- Multiplying and dividing radical expressions
- Solving equations with radicals
- Adding and subtracting polynomials
- Multiplying polynomials and dividing polynomials
- The greatest common factor and factoring by grouping
- The difference of two squares; the sum and difference of two cubes
- Factoring trinomials
- Solving equations by factoring
- Algebraic expressions
- Rational Expressions

Geometry (2 hours)

- Area and volume of geometric figures
- Secant lines
- Tangent lines

College Algebra (23 hours)

- Equations and Inequalities
  - Quadratic and other non-linear inequalities
- Functions and Their Graphs
  - Cartesian Coordinate System
  - Function (linear, polynomial, rational, radical, absolute value) definition, evaluation, domain and range
  - Graphs of functions (linear, quadratic, polynomial, rational, radical, absolute value) including vertices, asymptotic behavior, intercepts, and symmetry
  - Graphs of piecewise functions
  - Transformations of functions (linear, quadratic, rational, radical, absolute value)
  - Quadratic functions
  - Algebra of functions
  - One-to-one functions and inverses
- Factoring for Calculus
  - Multiplying by conjugates
  - Factoring fractional exponents
- Sigma notation

Trigonometry (14 hours)

- Angles
  - Degree and radian measure
  - Reference angles
  - Standard form
  - Coterminal
- Trigonometric Equations and Inverse Trigonometric Functions
  - Solving trigonometric equations
  - Inverse trigonometric functions

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