

MATH-86: SUPPORT FOR COLLEGE ALGEBRA

Effective Term

Fall 2026

CC Approval

11/07/2025

AS Approval

11/13/2025

BOT Approval

11/20/2025

SECTION A - Course Data Elements

Send Workflow to Initiator

No

CB04 Credit Status

Credit - Non-degree Applicable

Discipline

Minimum Qualifications	And/Or
Mathematics (Master's Degree)	

Subject Code

MATH - Mathematics

Course Number

86

Department

Mathematics

Division

Mathematics (MATH)

Full Course Title

Support for College Algebra

Short Title

Support for College Algebra

CB03 TOP Code

1702.00 - Mathematics Skills

CB08 Basic Skills Status

NBS - Not Basic Skills

CB09 SAM Code

E - Non-Occupational

Rationale

Routine update.

SECTION B - Course Description

Catalog Course Description

This course is open only to students concurrently enrolled in College Algebra. Concepts will be covered using a just-in-time approach for understanding of the corresponding concepts as they are presented in College Algebra. This course is designed to offer support for students who lack the strong algebra background needed to succeed in College Algebra.

SECTION C - Conditions on Enrollment

Open Entry/Open Exit

No

Repeatability

Not Repeatable

Grading Options

Pass/No Pass Only

Allow Audit

Yes

Requisites

Corequisite(s)

Concurrent enrollment in MATH-106 or equivalent.

Requisite Justification

Requisite Description

Course Not in a Sequence

Subject

MATH

Course

106

Level of Scrutiny

Content Review

Upon entering this course, students should be able to:

Math 86 is open entry, and will provide students with the algebra needed to succeed in Math 106, College Algebra. Students who would like more time to build their algebra foundation than this concurrent course will provide, should consider taking Math 95. In addition, Math 86, requires that students have a fundamental understanding of topics from beginning Algebra such as operations on fractions and solving equations. Students without this understanding should consider taking Math 85.

SECTION D - Course Standards

Is this course variable unit?

No

Units

2

Lecture Hours

18

Activity Hours

36

Outside of Class Hours

54

Total Contact Hours

54

Total Student Hours

108

Distance Education Approval

Is this course offered through Distance Education?

Yes

Online Delivery Methods

DE Modalities	Permanent or Emergency Only?
Entirely Online	Emergency Only
Hybrid	Permanent
Online with Proctored Exams	Permanent

SECTION E - Course Content

Student Learning Outcomes

Upon satisfactory completion of the course, students will be able to:	
1.	Graph functions.
2.	Solve equations.
3.	Simplify expressions.

Course Objectives

Upon satisfactory completion of the course, students will be able to:	
1.	Solve polynomial, rational, absolute value, radical, exponential and logarithmic equations.
2.	Solve systems of linear equations.
3.	Graph linear and nonlinear functions, parabolas and circles.
4.	Solve linear and absolute value inequalities.
5.	Perform basic operations on functions.
6.	Find inverse functions.
7.	Use mathematical modeling to solve problems relating to exponential growth and decay, mixing, and optimization.
8.	Use function notation and evaluate domain and range for all functions types studied.
9.	Study for a math class effectively.

Course Content

Using a just-in-time approach, the following content will be covered as required for success in the corequisite College Algebra course.

1. Linear and absolute value equations and inequalities
 - a. Linear functions (finding and graphing)
 - b. Graphing linear inequalities
 - c. Solving absolute value equations
 - d. Absolute value inequalities
2. Graphing linear equations
 - a. Equations in two variables
 - b. Slope and graphing
 - c. Using slope-intercept and point-slope formulas
 - d. Horizontal and vertical lines
 - e. Parallel and perpendicular lines
3. Systems of equations
 - a. Solving systems of two equations with two unknowns (graphing, substitution, elimination)
 - b. Applications of systems
 - c. Solving systems of linear inequalities by graphing
 - d. Solving systems of three equations with three unknowns
4. Exponents and polynomials
 - a. Review of order of operations
 - b. Review exponent rules
 - c. Negative exponents
 - d. Scientific notation (including arithmetic operations)
 - e. Addition and subtraction of polynomials with several variables

- f. Multiplying polynomials (including special products and several variables)
 - g. Dividing polynomials (including long division)
 - h. Factoring polynomials (grouping, binomials, trinomials)
 - i. Solving polynomial equations by factoring
5. Rational expressions and equations
 - a. Rational expressions and functions (including domain)
 - b. Multiplication and division
 - c. Adding and subtracting with common and uncommon denominators
 - d. Complex fractions
 - e. Proportions and dimensional analysis
 - f. Solving rational equations
 6. Radical expressions and equations
 - a. Roots and radical notation with rational exponents
 - b. Simplifying radicals and radical expressions
 - c. Adding and subtracting
 - d. Multiplying and dividing
 - e. Solving radical equations
 - f. Radical functions (simple graphs and domain restrictions)
 - g. Complex numbers (brief, but include conjugates)
 7. Quadratics
 - a. Solving by factoring, square root property, completing the square and quadratic formula
 - b. Quadratic functions and graphs
 - c. Finding maximums and/or minimums
 8. Functions
 - a. Function notation
 - b. Analyzing the graphs of functions
 - c. Composition of functions
 - d. Evaluating piecewise defined functions from equation and graph
 - e. Domain and range
 9. Logarithms and exponentials
 - a. Inverse functions (including domain and range)
 - b. Exponential functions and their graphs (including domain and range)
 - c. Logarithmic functions and their graphs (including domain and range)
 - d. Properties of logarithms
 - e. Solving logarithmic and exponential equations
 - f. Applications including growth, decay and interest
 10. Equations of circles and their graphs (centered at origin)
 11. Study skills / affective domain (this should be integrated into the class, not taught as a separate section)
 - a. Growth mindset and grit
 - b. How to study for a math class
 - c. Test taking strategies
 - d. Campus resources

Methods of Instruction

Methods of Instruction

Types	Examples of learning activities
Activity	<p>Activity Examples: Identify each of the parent functions by graph, description and equation.</p> <p>Use pattern recognition to determine the meaning of zero and negative integers as exponents.</p>
Discussion	<p>Discussion Examples: Meet with your group and discuss strategies used to solve different types of equations.</p> <p>Meet with your groups to review common errors in Order of Operations problems and explain.</p>

Lecture	Lecture Examples: Lecture on basic properties of exponents. Lecture on the definition of logarithms.
Lab	Work individually or in groups on basic skills as needed.

Online Adaptation

Types	Examples of learning activities
Activity	Activity Examples: Identify each of the parent functions by graph, description and equation. Use pattern recognition to determine the meaning of zero and negative integers as exponents.
Discussion	Discussion Examples: Discuss with your group and discuss strategies used to solve different types of equations. Discuss with your groups to review common errors in Order of Operations problems and explain.
Lecture	Watch recorded or participate in Zoom lectures on basic properties of exponents or the definition of logarithms.

Instructor-Initiated Online Contact Types

Announcements/Bulletin Boards
Chat Rooms
Discussion Boards
E-mail Communication
Video or Teleconferencing

Student-Initiated Online Contact Types

Chat Rooms
Discussions
Group Work

Course design is accessible

Yes

Methods of Evaluation

Methods of Evaluation

Types	Examples of classroom assessments
Exams/Tests	Course content should be embedded in the corequisite course exams. Except in the event of an emergency, exams should be proctored in person.
Quizzes	Quizzes on class material.
Homework	Individualize homework assignments adapted to specific student learning needs.
Other	In face-to-face classes, it is recommended that one hour a week in the Math Success Center be assigned as a homework assignment worth 3 - 5% of the semester grade. The Mathematics Department maintains a commitment to diverse teaching methods in courses emphasizing vital quantitative skills and qualitative reasoning ability. To that end, it is expected that sufficient formative assessments will be given to students that in frequency, length and rigor adequately assess both quantitative skills and qualitative reasoning.

Assignments

Reading Assignments

Read the section on maximum/minimum function values before our next class period and be prepared to do an in-class activity.
Read the section on properties of exponents and be prepared to discuss.

Writing Assignments

Example 1) Online or Paper Homework: Complete assigned exercises from the applicable section in the text.

Example 2) Group Activity: Given a quadratic equation, find all the zeros, the maximum or minimum value, and at least two other points, then graph.

Outside-of-Class Assignments

Other assignments such as research into applications or group projects assigned at instructors' discretion.

SECTION F - Textbooks and Instructional Materials

Material Type

Other required materials/supplies

Description

ALEKS 360 Adaptive Homework Term Long Subscription

SECTION G - Diversity, Equity and Inclusivity

How does your course and/or course outline of record reflect strategies for accommodating and engaging diverse student populations, advancing equitable outcomes, and fostering inclusion for all students?

This course supports diverse student populations through the use of multiple representations of concepts, varied applications, and technology. Strategies may also include collaborative learning, transparent assessment practices, online resources, and opportunities for students to connect course material to their own experiences, fostering equitable outcomes and an inclusive classroom environment.

Course Codes (Admin Only)

CB00 State ID

CCC000601129

CB10 Cooperative Work Experience Status

N - Is Not Part of a Cooperative Work Experience Education Program

CB11 Course Classification Status

Y - Credit Course

CB13 Special Class Status

N - The Course is Not an Approved Special Class

CB23 Funding Agency Category

Y - Not Applicable (Funding Not Used)

CB24 Program Course Status

Not Program Applicable

Allow Pass/No Pass

Yes

Only Pass/No Pass

Yes