MATH M905: BRIDGE TO COLLEGE ALGEBRA (MATH M05, MATH M07 OR MATH M11)

Originator
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College
Moorpark College

Attach Support Documentation (as needed)
MATH M905_state approval letter_CCC000612676.pdf

Discipline (CB01A)
MATH - Mathematics

Course Number (CB01B)
M905

Course Title (CB02)
Bridge to College Algebra (MATH M05, MATH M07 or MATH M11)

Banner/Short Title
Bridge to MATH M05, M07 or M11

Credit Type
Noncredit

Start Term
Fall 2023

Formerly
MATH M707 - Bridge to MATH M07

Catalog Course Description
Reviews the prerequisite material necessary to be successful in either MATH M05, MATH M07 or MATH M11. Includes factoring expressions; equations of lines; rational, radical and quadratic expressions and equations; and logarithms.

Taxonomy of Programs (TOP) Code (CB03)
1701.00 - Mathematics, General

Course Credit Status (CB04)
N (Noncredit)

Course Transfer Status (CB05) (select one only)
C (Not transferable)

Course Basic Skills Status (CB08)
B - The Course is a Basic Skills Course

SAM Priority Code (CB09)
E - Non-Occupational

Course Cooperative Work Experience Education Status (CB10)
N - Is Not Part of a Cooperative Work Experience Education Program

Course Classification Status (CB11)
K - Other Noncredit Enhanced Funding

Educational Assistance Class Instruction (Approved Special Class) (CB13)
N - The Course is Not an Approved Special Class

Course Prior to Transfer Level (CB21)
A - One level below transfer

Course Noncredit Category (CB22)
C - Elementary and Secondary Basic Skills

Funding Agency Category (CB23)
Y - Not Applicable (Funding Not Used)

Course Program Status (CB24)
2 - Not Program Applicable

General Education Status (CB25)
Y - Not Applicable

Support Course Status (CB26)
N - Course is not a support course

Field trips
Will not be required

Grading method
(P) Pass/No Pass Grading

Does this course require an instructional materials fee?
No

Repeatable for Credit
Yes
Number of times a student may enroll in this course
Unlimited

Units and Hours

Carnegie Unit Override
Yes

Total in-Class (full semester or term)
Total Minimum Contact/In-Class Hours (for full semester or term; not weekly)
8.0
Total Maximum Contact/In-Class Hours (for full semester or term; not weekly)
8.0

Total Student Learning

Total Student Learning
Total Minimum Student Learning Hours
8.0

Total Maximum Student Learning Hours
8.0

Student Learning Outcomes (CSLOs)

	Upon satisfactory completion of the course, students will be able to:
1	gain an understanding of mathematical topics in preparation for a college level algebra course by studying various intermediate algebra topics through participating in the review session with the provided materials.

Course Objectives

	Upon satisfactory completion of the course, students will be able to:
1	factor polynomials including the sum and difference of cubes.
2	write the equation of a line in point-slope form, slope-intercept form, and standard form.
3	graph linear inequalities in two variables.
4	simplify rational and radical expressions.
5	solve linear and rational equations.
6	solve systems of equations in two variables.
7	solve quadratic equations.
8	solve rational equations.
9	solve radical equations.
10	solve absolute value equations.
11	solve absolute value inequalities with solutions in interval notation.
12	graph quadratic functions.
13	find the value of a logarithm.
14	find the length and midpoint of a line segment.

Course Content

Lecture/Course Content

20 % A. Factoring polynomials
1. Factoring the Greatest Common Factor
2. Factoring the sum and difference of cubes
3. Factoring by grouping
4. Factoring trinomials

20 % B. Linear equations
1. Determine the slope of a line
2. Write the equation of a line in point-slope form
3. Write the equation of a line in slope-intercept form
4. Write the equation of a line in standard form
5. Solve linear and rational equations

10 % C. Graph in two dimensions
1. Graph linear inequalities in two variables
2. Graph quadratic functions

10 % D. Simplify expressions
1. Simplify rational expressions
2. Simplify radical expressions by adding, subtracting, multiplying and dividing

20 % E. Solve equations and inequalities
1. Solve quadratic equations
2. Solve rational equations
3. Solve radical equations
4. Solve absolute equations and inequalities
5. Solve systems of equations

10 % F. Logarithms
1. Write an equation in its equivalent exponential form
2. Find the exact value of a logarithmic expression

10 % G. Distance and midpoint formulas

1. Write an equation in its equivalent exponential form
2. Find the exact value of a logarithmic expression

Methods of Evaluation

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

Written expression
Problem solving exercises
Skills demonstrations

Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):

Other (specify)

Other

Since this is a non-graded module, students receive credit for attendance to the full hours of the course.

Instructional Methodology

Specify the methods of instruction that may be employed in this course

Class activities
Class discussions
Demonstrations
Distance Education
Instructor-guided interpretation and analysis
Instructor-guided use of technology
Lecture
Small group activities
Other (specify)

Specify other method of instruction

All instructors will use best practices to provide an inclusive learning
environment that respects all forms of racial, ethnic, age, and gender
diversity, and provides for the individual needs of students of all learning
styles.

Describe specific examples of the methods the instructor will use:

- Demonstrate graphing using a magnetic coordinate grid board.
- Engage students in group work exercises, with the assistance of a student tutor, such as practice exercises on solving quadratic equations.

Representative Course Assignments

Writing Assignments

1. Practice problems selected from the bridge packet where answers require a written explanation of the solution, such as solving a quadratic equation by factoring.
2. Complete assignments requiring complete solutions using both written English and symbolic mathematical language, such as application problems.
3. Write solutions on the board using correct mathematical symbols and notation.

Critical Thinking Assignments

1. Describe and apply the algorithmic steps for obtaining the solution to a mathematical problem, such as solving a logarithmic equation.
2. Compare and contrast methods of solution to mathematical problems.
3. Apply analytic techniques for solving mathematical and application problems.

Reading Assignments

1. Read example problems from the bridge packet provided by the instructor, such as examples of solving radical and rational equations.
2. Read definitions to learn the proper formulas to be used in application problems.
3. Read application problems to set up appropriate equations for solving.

Skills Demonstrations
1. Graph quadratic functions.
2. Write problem solutions on the board such as how to solve a quadratic equation using the quadratic formula.
3. Answer instructor questions pertaining to relevant material using mathematical reasoning.

Problem-Solving and Other Assignments (if applicable)
1. Solve problems using systems of equations in two variables.
2. Solve problems involving absolute value equations and inequalities.

Outside Assignments

Representative Outside Assignments
1. Problems selected from the bridge packet where answers require a written explanation of the solution, such as graphing a quadratic function.
2. Assigned reading from bridge packet.

Textbooks and Lab Manuals

Resource Type
Textbook

Classic Textbook
No

Description
Miller, Julie, Molly O'Neill, Nancy Hyde. *Intermediate Algebra.* 6th ed., McGraw-Hill, 2022.

Resource Type
Textbook

Classic Textbook
Yes

Description
Martin-Gay, Elayn. *Intermediate Algebra.* 8th ed., Pearson, 2023.

Resource Type
Textbook

Classic Textbook
No

Description
Blitzer, Robert F. *Intermediate Algebra for College Students.* 8th ed., Pearson, 2021.

Library Resources

Assignments requiring library resources
Using the Library's print and online resources to provide support material for algebraic content and real world applications. May want to make use of the math textbooks on reserve at the Library Circulation Desk.

Sufficient Library Resources exist
Yes

Example of Assignments Requiring Library Resources
Research using books from the Library's collection to learn the history of the distance formula and Pythagorean Theorem. May want to discover different factoring techniques from books on reserve at the Circulation Desk.

Distance Education Addendum

Definitions

Distance Education Modalities

Hybrid (1%–50% online)
Hybrid (51%–99% online)
100% online

Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

Regular Effective/Substantive Contact

Hybrid (1%–50% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Use of student discussion boards to discuss concepts from the material, solutions to homework problems, general discussion of techniques in solving problems, study skills, or arranging study groups.
E-mail	Responding to student queries about material, grade information, course policies and procedures, scheduling and due dates, submitting homework assignments, or making general announcements to the class.
Face to Face (by student request; cannot be required)	Students requesting to speak to instructor in person for personal help on material, grade information, or discussion of policies and procedures.
Other DE (e.g., recorded lectures)	Posting of recorded lectures either by the instructor, recorded lessons available through campus resources, or use of public online resources available on the internet.
Synchronous Dialog (e.g., online chat)	Active live discussion with the instructor on material concepts, techniques for problem solving, feedback on solutions to problems, general chat on study skills, or answers to homework problems, quizzes or tests.

Hybrid (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Use of student discussion boards to discuss concepts from the material, solutions to homework problems, general discussion of techniques in solving problems, study skills, or arranging study groups.
E-mail	Responding to student queries about material, grade information, course policies and procedures, scheduling and due dates, submitting homework assignments, or making general announcements to the class.
Face to Face (by student request; cannot be required)	Students requesting to speak to instructor in person for personal help on material, grade information, or discussion of policies and procedures.
Other DE (e.g., recorded lectures)	Posting of recorded lectures either by the instructor, recorded lessons available through campus resources, or use of public online resources available on the internet.

Synchronous Dialog (e.g., online chat)	Active live discussion with the instructor on material concepts, techniques for problem solving, feedback on solutions to problems, general chat on study skills, or answers to homework problems, quizzes or tests.

100% online Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	Use of student discussion boards to discuss concepts from the material, solutions to homework problems, general discussion of techniques in solving problems, study skills, or arranging study groups.
E-mail	Responding to student queries about material, grade information, course policies and procedures, scheduling and due dates, submitting homework assignments, or making general announcements to the class.
Other DE (e.g., recorded lectures)	Posting of recorded lectures either by the instructor, recorded lessons available through campus resources, or use of public online resources available on the internet.
Synchronous Dialog (e.g., online chat)	Active live discussion with the instructor on material concepts, techniques for problem solving, feedback on solutions to problems, general chat on study skills, or answers to homework problems, quizzes or tests.

Examinations

Hybrid (1%–50% online) Modality

On campus
Online

Hybrid (51%–99% online) Modality

On campus
Online

Primary Minimum Qualification
MATHEMATICS

Review and Approval Dates

Department Chair
10/12/2022

Dean
10/17/2022

Technical Review
10/20/2022

Curriculum Committee
11/01/2022

DTRW-I
MM/DD/YYYY

Curriculum Committee
MM/DD/YYYY

Board
MM/DD/YYYY

CCCCO
MM/DD/YYYY

Control Number
CCC000612676

DOE/accreditation approval date
MM/DD/YYYY