

Washtenaw Community College Comprehensive Report

MTH 168 Intermediate Algebra with Foundations

Conditional Approval

Effective Term: Winter 2025

Course Cover

College: Math, Science and Engineering Tech

Division: Math, Science and Engineering Tech

Department: Math & Engineering Studies

Discipline: Mathematics

Course Number: 168

Org Number: 12200

Full Course Title: Intermediate Algebra with Foundations

Transcript Title: Intermediate Algebra Fndtns

Is Consultation with other department(s) required: No

Publish in the Following: College Catalog , Time Schedule , Web Page

Reason for Submission:

Change Information:

Rationale: As the state moves to a corequisite model for developmental courses, this course is meant to provide students with academic math level 2 to progress to academic math level 4 in one semester. The faculty does not agree that this is the best pathway for students as students who take our traditional route of MTH 097 to MTH 169 perform quite well in their college level courses.

Proposed Start Semester: Winter 2025

Course Description: In this course, students will explore the following functions: linear, quadratic, rational, radical, logarithmic, and exponential. Polynomials and systems of equations will also be covered and constant, cubic, and absolute value functions will be introduced. This course includes additional instructor contact hours and is open to Math Level 2 students only - successful completion of this course with a minimum grade of "C" will raise students' Academic Math Level to 4. This course contains material previously taught in MTH 097 and MTH 169.

Course Credit Hours

Variable hours: No

Credits: 4

Lecture Hours: Instructor: 90 **Student:** 90

Lab: Instructor: 0 **Student:** 0

Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 90 **Student:** 90

Repeatable for Credit: NO

Grading Methods: Letter Grades

Audit

Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

Reduced Reading/Writing Scores

College-Level Math

Level 2

Requisites

Enrollment Restrictions

Academic Reading Level 3 and concurrently enrolled in ENG 111 and ENG 111S; or Academic Reading Level 5. Open to Math Level Level 2 students only.

General Education

Request Course Transfer

Proposed For:

Eastern Michigan University
Jackson Community College
Michigan State University
Western Michigan University

Student Learning Outcomes

1. Represent and solve linear equations analytically and verbally.

Assessment 1

Assessment Tool: Outcome-related questions on a common departmental final exam.

Assessment Date: Winter 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: A random sample of approximately 30% of the students taking the course during the semester assessed.

How the assessment will be scored: Each question will be scored on a scale from 0 to 4 with a rubric developed by the course mentor.

Standard of success to be used for this assessment: 75% of all students assessed will score 75% or higher on all outcome-related common exam questions.

Who will score and analyze the data: The course mentor for MTH 168

2. Solve systems of two linear equations in two variables graphically and analytically.

Assessment 1

Assessment Tool: Outcome-related questions on a common departmental final exam.

Assessment Date: Winter 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: A random sample of approximately 30% of the students taking the course during the semester assessed.

How the assessment will be scored: Each question will be scored on a scale from 0 to 4 with a rubric developed by the course mentor.

Standard of success to be used for this assessment: 75% of all students assessed will score 75% or higher on all outcome-related common exam questions.

Who will score and analyze the data: The course mentor for MTH 168

3. Graph and transform graphs of linear, quadratic, rational, radical, exponential, and logarithmic functions.

Assessment 1

Assessment Tool: Outcome-related questions on a common departmental final exam.

Assessment Date: Winter 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: A random sample of approximately 30% of the students taking the course during the semester assessed.

How the assessment will be scored: Each question will be scored on a scale from 0 to 4 with a rubric developed by the course mentor.

Standard of success to be used for this assessment: 75% of all students assessed will score 75% or higher on all outcome-related common exam questions.

Who will score and analyze the data: The course mentor for MTH 168

4. Simplify expressions and solve problems involving functions and equations using algebraic concepts.

Assessment 1

Assessment Tool: Outcome-related questions on a common departmental final exam.

Assessment Date: Winter 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: A random sample of approximately 30% of the students taking the course during the semester assessed.

How the assessment will be scored: Each question will be scored on a scale from 0 to 4 with a rubric developed by the course mentor.

Standard of success to be used for this assessment: 75% of all students assessed will score 75% or higher on all outcome-related common exam questions.

Who will score and analyze the data: The course mentor for MTH 168

5. Identify the mapping between two sets of numbers as a function or relation and use the concept of functions to classify and analyze different types of functions.

Assessment 1

Assessment Tool: Outcome-related questions on a common departmental final exam.

Assessment Date: Winter 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: A random sample of approximately 30% of the students taking the course during the semester assessed.

How the assessment will be scored: Each question will be scored on a scale from 0 to 4 with a rubric developed by the course mentor.

Standard of success to be used for this assessment: 75% of all students assessed will score 75% or higher on all outcome-related common exam questions.

Who will score and analyze the data: The course mentor for MTH 168

Course Objectives

1. Read and interpret information on a graph
2. Graph linear equations written in standard form, slope-intercept form, and point-slope form.
3. Find the slope of a line given two points on the line, the equation of the line, or an equation of a parallel or perpendicular line.
4. Find an equation of a line given its graph, its slope and a point on the line, or two points on the line.
5. Solve a system of linear equations by substitution or graphically.
6. Represent and solve real-life application problems with systems of linear equations.
7. Use the properties of exponents to simplify expressions; simplify expressions involving negative and rational exponents; solve applications involving scientific notation.
8. Add, subtract, and multiply polynomial expressions.
9. Determine the greatest common factor (GCF) of a polynomial and factor the GCF accordingly.
10. Factor various types of polynomials, including, but not limited to trinomials of the form $ax^2 + bx + c$, difference of two squares, difference of two cubes, and sum of two cubes.
11. Evaluate the value of a function represented with function notation or a graph.
12. Determine if a relation is a function.
13. Determine the domain and range of relations and functions.
14. Graph the parent functions of the following functions: quadratic, rational, radical, exponential, and logarithmic.

15. Graph translations of the following functions: quadratic, rational, radical, exponential, and logarithmic.
16. Use properties of equality to solve linear, quadratic, rational, radical, exponential, and logarithmic equations.
17. Simplify polynomial, linear, quadratic, rational, radical, exponential and logarithmic expressions.
18. Add, subtract, multiply, and divide radical, rational expressions, and exponential expressions.

New Resources for Course

Course Textbooks/Resources

Textbooks

Marecek, L., Mathis, A. H. . *Intermediate Algebra*, 2e ed. OpenStax.

<https://openstax.org/details/books/intermediate-algebra-2e/>, 2020, ISBN: 978-1-975076-.

Manuals

Periodicals

Software

Equipment/Facilities

Level III classroom

Testing Center

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
Faculty Preparer: <i>Robert Hatcher</i>	<i>Faculty Preparer</i>	<i>Sep 27, 2024</i>
Department Chair/Area Director: <i>Nichole Klemmer</i>	<i>Recommend Approval</i>	<i>Sep 27, 2024</i>
Dean: <i>Tracy Schwab</i>	<i>Request Conditional Approval</i>	<i>Sep 27, 2024</i>
Curriculum Committee Chair:		
Assessment Committee Chair:		
Vice President for Instruction: <i>Brandon Tucker</i>	<i>Conditional Approval</i>	<i>Sep 27, 2024</i>