Washtenaw Community College Comprehensive Report

MTH 097 Foundations of Algebra
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: 097
Org Number: 12200
Full Course Title: Foundations of Algebra
Transcript Title: Foundations of Algebra
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: Inactivation
Change Information:
   Consultation with all departments affected by this course is required.
Rationale: We were asked by administration to stop offering developmental education classes.
Proposed Start Semester: Winter 2025
Course Description: In this developmental math course, students will focus on algebra. Topics include linear equations, linear functions, polynomials and systems of linear equations. Other functions such as constant, quadratic, cubic, and absolute value functions are also introduced. Students who successfully complete this course with a minimum grade of "C" will raise their Academic Math level to 3.

Course Credit Hours
Variable hours: No
Credits: 4
Lecture Hours: Instructor: 60 **Student:** 60
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 60 **Student:** 60
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
Prerequisite
Academic Reading Level 5; no minimum writing level

General Education

Degree Attributes
Below College Level Pre-Reqs

Request Course Transfer
Proposed For:

Student Learning Outcomes

1. Represent and solve linear equations analytically and verbally.
   Assessment 1
   Assessment Tool: Outcome-related questions on common departmental final exam
   Assessment Date: Fall 2024
   Assessment Cycle: Annually
   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: A rubric developed by the course mentor with input from the department. Each question will be scored on a scale from 0 to 4.
   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 MTH 097 course mentor

2. Solve systems of two linear equations in two variables graphically and analytically.
   Assessment 1
   Assessment Tool: Outcome-related questions on common departmental final exam
   Assessment Date: Fall 2024
   Assessment Cycle: Annually
   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: A rubric developed by the course mentor with input from the department. Each question will be scored on a scale from 0 to 4.
   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 MTH 097 course mentor

3. Add, subtract, multiply, and factor polynomial expressions.
   Assessment 1
   Assessment Tool: Outcome-related questions on common departmental final exam
   Assessment Date: Fall 2024
   Assessment Cycle: Annually
   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: A rubric developed by the course mentor with input from the department. Each question will be scored on a scale from 0 to 4.
   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 MTH 097 course mentor

4. Analyze relations to determine if a relation is a function, find the domain and range of relations, and use function notation to evaluate functions.
   Assessment 1
   Assessment Tool: Outcome-related questions on common departmental final exam

Assessment Date: Fall 2024
Assessment Cycle: Annually
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: A rubric developed by the course mentor with input from the department. Each question will be scored on a scale from 0 to 4.
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 MTH 097 course mentor

Course Objectives

1. Use the addition, subtraction, multiplication and division properties of equality to solve linear equations in a real-world context.
2. Read and interpret information on a graph; graph linear equations of the form $y=mx + b$ and $Ax + By = C$; graph horizontal and vertical lines; solve applications involving graphs of lines.
3. Find the slope of a line given two points or the equation of the 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 elimination, substitution, or graphically.
6. Represent and solve systems of linear equations with matrices.
7. Represent and solve real-life application problems with systems of linear equations.
8. Use the multiplication, division and power rules for exponents to simplify expressions; simplify expressions involving negative exponents; solve applications involving scientific notation.
9. Add, subtract and multiply polynomials.
10. Determine the greatest common factor (gcf) of a polynomial and factor the gcf accordingly; factor trinomials in the form $ax^2 + bx + c$; factor difference of squares, difference of cubes and sum of cubes polynomials.
11. Evaluate a function represented with function notation.
12. Determine if a relation is a function.
13. Determine the domain and range of a function.

New Resources for Course

Along with the new OER textbook to be used in all section starting Winter 2024, students and instructors will begin to use MyOpenMath.com as the homework management system for the course. These resources have been developed by the course mentor in cooperation with colleagues in the department.

Course Textbooks/Resources

Textbooks
   Tyler Wallace and Robert Hatcher. *Beginning Algebra*, ed. Creative Commons, 2015
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Nichole Klemmer	*Faculty Preparer*	*Nov 12, 2024*
Department Chair/Area Director:		
Nichole Klemmer	*Recommend Approval*	*Nov 13, 2024*
Dean:		
Tracy Schwab	*Recommend Approval*	*Nov 15, 2024*

Curriculum Committee Chair:

Randy Van Wagnen   *Reviewed*   *Feb 11, 2025*

Assessment Committee Chair:

Vice President for Instruction:

Brandon Tucker   *Approve*   *Feb 12, 2025*

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Effective Term: Winter 2024

Course Cover

College: Math, Science and Engineering Tech
Division: Math, Science and Engineering Tech
Department: Math & Engineering Studies
Discipline: Mathematics
Course Number: 097
Org Number: 12200
Full Course Title: Foundations of Algebra
Transcript Title: Foundations of Algebra
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: Three Year Review / Assessment Report
Change Information:
    Consultation with all departments affected by this course is required.
    Course description
    Outcomes/Assessment
    Objectives/Evaluation
Rationale: The department is in the process of reorganizing the topics in the traditional math sequence of courses: MTH 067, 097, 169, 176, and 180. The changes to the objectives are a result of this process. In addition, the department has decided to use an OER for all sections of this course to significantly reduce costs for students.
Proposed Start Semester: Winter 2024
Course Description: In this developmental math course, students will focus on algebra. Topics include linear equations, linear functions, polynomials and systems of linear equations. Other functions such as constant, quadratic, cubic, and absolute value functions are also introduced. Students who successfully complete this course with a minimum grade of "C" will raise their Academic Math level to 3.

Course Credit Hours

Variable hours: No
Credits: 4
Lecture Hours: Instructor: 60 **Student:** 60
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 60 **Student:** 60
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
Prerequisite
Academic Reading Level 5; no minimum writing level

General Education
Degree Attributes
Below College Level Pre-Reqs

Request Course Transfer
Proposed For:

Student Learning Outcomes

1. Represent and solve linear equations analytically and verbally.
    ### Assessment 1
    Assessment Tool: Outcome-related questions on common departmental final exam
    Assessment Date: Fall 2024
    Assessment Cycle: Annually
    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: A rubric developed by the course mentor with input from the department. Each question will be scored on a scale from 0 to 4.
    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 MTH 097 course mentor

2. Solve systems of two linear equations in two variables graphically and analytically.
    ### Assessment 1
    Assessment Tool: Outcome-related questions on common departmental final exam
    Assessment Date: Fall 2024
    Assessment Cycle: Annually
    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.
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    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 MTH 097 course mentor

3. Add, subtract, multiply, and factor polynomial expressions.
    ### Assessment 1
    Assessment Tool: Outcome-related questions on common departmental final exam
    Assessment Date: Fall 2024
    Assessment Cycle: Annually
    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: A rubric developed by the course mentor with input from the department. Each question will be scored on a scale from 0 to 4.
    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 MTH 097 course mentor

4. Analyze relations to determine if a relation is a function, find the domain and range of relations, and use function notation to evaluate functions.

Assessment 1

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

Assessment Date: Fall 2024

Assessment Cycle: Annually

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

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 MTH 097 course mentor

Course Objectives

1. Use the addition, subtraction, multiplication and division properties of equality to solve linear equations in a real-world context.
2. Read and interpret information on a graph; graph linear equations of the form $y=mx + b$ and $Ax + By = C$; graph horizontal and vertical lines; solve applications involving graphs of lines.
3. Find the slope of a line given two points or the equation of the 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 elimination, substitution, or graphically.
6. Represent and solve systems of linear equations with matrices.
7. Represent and solve real-life application problems with systems of linear equations.
8. Use the multiplication, division and power rules for exponents to simplify expressions; simplify expressions involving negative exponents; solve applications involving scientific notation.
9. Add, subtract and multiply polynomials.
10. Determine the greatest common factor (gcf) of a polynomial and factor the gcf accordingly; factor trinomials in the form $ax^2 + bx + c$; factor difference of squares, difference of cubes and sum of cubes polynomials.
11. Evaluate a function represented with function notation.
12. Determine if a relation is a function.
13. Determine the domain and range of a function.

New Resources for Course

Along with the new OER textbook to be used in all section starting Winter 2024, students and instructors will begin to use MyOpenMath.com as the homework management system for the course. These resources have been developed by the course mentor in cooperation with colleagues in the department.

Course Textbooks/Resources

Textbooks

Tyler Wallace and Robert Hatcher. *Beginning Algebra*, ed. Creative Commons, 2015

Manuals

Periodicals

Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Robert Hatcher	*Faculty Preparer*	*Jul 13, 2023*

Department Chair/Area Director:

Nichole Klemmer	*Recommend Approval*	*Jul 19, 2023*

Dean:

Tracy Schwab	*Recommend Approval*	*Jul 20, 2023*

Curriculum Committee Chair:

Randy Van Wagnen	*Recommend Approval*	*Dec 29, 2023*

Assessment Committee Chair:

Jessica Hale	*Recommend Approval*	*Jan 04, 2024*

Vice President for Instruction:

Brandon Tucker	*Approve*	*Jan 05, 2024*

Washtenaw Community College Comprehensive Report

MTH 097 Foundations of Algebra
Effective Term: Fall 2021

Course Cover

College: Math, Science and Engineering Tech
Division: Math, Science and Engineering Tech
Department: Math & Engineering Studies
Discipline: Mathematics
Course Number: 097
Org Number: 12200
Full Course Title: Foundations of Algebra
Transcript Title: Foundations of Algebra
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Time Schedule , Web Page
Reason for Submission: Three Year Review / Assessment Report
Change Information:
    Course description
    Outcomes/Assessment
    Objectives/Evaluation
Rationale: Update some of the language to new standards. Add some new objectives to reflect needs exposed by the latest course assessment.
Proposed Start Semester: Fall 2021
Course Description: In this developmental math course, students will focus on algebra. Topics include linear functions, linear inequalities, polynomials and systems of linear equations. Successful completion of this course with a minimum grade of "C" will raise your Academic Math level to 3.

Course Credit Hours

Variable hours: No
Credits: 4
Lecture Hours: Instructor: 60 **Student:** 60
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 60 **Student:** 60
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

Prerequisite
Academic Reading Level 5; no minimum writing level

General Education
Degree Attributes
Below College Level Pre-Reqs

Request Course Transfer
Proposed For:

Student Learning Outcomes

1. Represent and solve linear equations and inequalities graphically, analytically and verbally.
   Assessment 1
   Assessment Tool: Outcome-related questions on common departmental final exam
   Assessment Date: Fall 2022
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: A random sample of at least 75 exams with at least 4 student exams from each section
   How the assessment will be scored: A rubric developed by the course mentor with input from the department. Each question will be scored on a scale from 0 to 4.
   Standard of success to be used for this assessment: 75% of the students will score 75% or higher.
   Who will score and analyze the data: The course mentor

2. Solve systems of two linear equations graphically and analytically.
   Assessment 1
   Assessment Tool: Outcome-related questions on common departmental final exam
   Assessment Date: Fall 2022
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: A random sample of at least 75 exams with at least 4 student exams from each section.
   How the assessment will be scored: A rubric developed by the course mentor with input from the department. Each question will be scored on a scale from 0 to 4.
   Standard of success to be used for this assessment: 75% of the students will score 75% or higher.
   Who will score and analyze the data: The course mentor

3. Add, subtract, multiply, and factor polynomial expressions.
   Assessment 1
   Assessment Tool: Outcome related questions on common departmental final exam
   Assessment Date: Fall 2022
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: A random sample of at least 75 exams with at least 4 student exams from each section.
   How the assessment will be scored: A rubric developed by the course mentor with input from the department. Each question will be scored on a scale from 0 to 4.
   Standard of success to be used for this assessment: 75% of the students will score 75% or higher.
   Who will score and analyze the data: The course mentor

Course Objectives
1. Use the addition, subtraction, multiplication and division properties of equality to solve linear equations in a real-world context.

2. Use the addition, subtraction, multiplication and division properties of inequality to solve linear inequalities in a real-world context.
3. Express solutions to linear inequalities with set-builder notation and interval notation.
4. Read and interpret information on a graph; graph linear equations of the form y=mx + b and Ax + By = C; graph horizontal and vertical lines; solve applications involving graphs of lines.
5. Find the slope of a line given two points or the equation of the line.
6. Find an equation of a line given its graph, its slope and a point on the line, or two points on the line.
7. Graph linear inequalities; graph inequalities involving horizontal and vertical lines.
8. Solve a system of linear equations by elimination, substitution, or graphically.
9. Represent and solve systems of linear equations with matrices.
10. Represent and solve real-life application problems with systems of linear equations.
11. Use the multiplication, division and power rules for exponents to simplify expressions; simplify expressions involving negative exponents; solve applications involving scientific notation.
12. Add, subtract and multiply simple polynomials.
13. Find and factor the greatest common factor from a polynomial. Factor trinomials in the form $ax^2 + bx + c$; factor difference of squares, difference of cubes and sum of cubes polynomials.
14. Use function notation to evaluate functions; find the domain and range of a function.

New Resources for Course

Course Textbooks/Resources
Textbooks
Miller, Oneil, Hyde. *Intermediate Algebra*, 5th ed. McGraw-Hill, 2017, ISBN: 9781260500066.
Manuals
Periodicals
Software

Equipment/Facilities
Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Robert Hatcher	*Faculty Preparer*	*Apr 13, 2021*
Department Chair/Area Director:		
Lisa Manoukian	*Recommend Approval*	*Apr 26, 2021*
Dean:		
Victor Vega	*Recommend Approval*	*May 20, 2021*
Curriculum Committee Chair:		
Randy Van Wagnen	*Recommend Approval*	*Aug 04, 2021*
Assessment Committee Chair:		
Shawn Deron	*Recommend Approval*	*Aug 04, 2021*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Aug 05, 2021*