Washtenaw Community College Comprehensive Report

MTH 180 Precalculus
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: 180
Org Number: 12200
Full Course Title: Precalculus
Transcript Title: Precalculus
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
    Objectives/Evaluation
Rationale: Requested by Calculus instructors and approved by department.
Proposed Start Semester: Winter 2024
Course Description: In this course, students will be introduced to analytic geometry, trigonometry, and advanced algebraic topics in preparation for calculus. Topics include trigonometric functions, identities and graphs, the conic sections, and the algebra of limits. A graphing calculator is required for this course. See the time schedule for the current brand and model. Successful completion of this course with a minimum grade of "C" will raise your Academic Math level to 7.

Course Credit Hours

Variable hours: No
Credits: 5
Lecture Hours: Instructor: 75 **Student:** 75
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 75 **Student:** 75
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

College-level Reading & Writing

College-Level Math

Level 5

Requisites

Prerequisite
Academic Math Level 5

or
Prerequisite
MTH 176 minimum grade "C"; may enroll concurrently

General Education
Degree Attributes
 Assoc in Applied Sci - Area 3
 Assoc in Science - Area 3
 Assoc in Arts - Area 3
 MACRAO Science & Math
Michigan Transfer Agreement - MTA
 MTA Mathematics

Request Course Transfer
Proposed For:

Student Learning Outcomes

1. Solve, graph and perform operations of the conic sections.
   ### Assessment 1
   Assessment Tool: Outcome-related common departmental exam questions
   Assessment Date: Winter 2026
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: A random sample of 30% of all students
   How the assessment will be scored: Departmentally-developed rubric
   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: Course coordinator

2. Solve and perform operations and problem representations with sequences, series and binomial expansions.
   ### Assessment 1
   Assessment Tool: Outcome-related common departmental exam questions
   Assessment Date: Winter 2026
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: A random sample of 30% of all students
   How the assessment will be scored: Departmentally-developed rubric
   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: Course coordinator

3. Graph, transform identities, and solve problem representations of trigonometric functions.
   ### Assessment 1
   Assessment Tool: Outcome-related common departmental exam questions
   Assessment Date: Winter 2026
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: A random sample of 30% of all students
   How the assessment will be scored: Departmentally-developed rubric
   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: Course coordinator

Course Objectives

1. Sketch a graph of conic sections and identify its distinguishing features (i.e. the center, radius, focus, etc.)
2. Simplify the equation of a conic section and identify the conic as a circle, ellipse, hyperbola, or parabola.
3. Identify a sequence as geometric or arithmetic.
4. Solve for a part of a right triangle using the trigonometric ratios.
5. Graph a trigonometric function.
6. Simplify a trigonometric expression using fundamental trigonometric identities.
7. Solve word problems using trigonometric properties.
8. Evaluate the limit of a rational, polynomial, or radical function.
9. Use algebraic techniques to evaluate infinite limits of polynomial, rational, and radical functions.
10. Find the slope of a function using the limit of a difference quotient.

New Resources for Course

TI-84 calculator
An online homework system using an OER or WebAssign.

Course Textbooks/Resources

Textbooks
Larson, R. Hostetler, R.. *Precalculus With Limits/with Webassign*, 7th ed. New York: Cengage, 2021, ISBN: 1-4390-4909-2.
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Lisa Manoukian	*Faculty Preparer*	*Dec 13, 2023*
Department Chair/Area Director:		
Nichole Klemmer	*Recommend Approval*	*Dec 15, 2023*
Dean:		
Tracy Schwab	*Recommend Approval*	*Dec 19, 2023*
Curriculum Committee Chair:		
Randy Van Wagnen	*Recommend Approval*	*Sep 12, 2024*
Assessment Committee Chair:		
Jessica Hale	*Recommend Approval*	*Sep 17, 2024*
Vice President for Instruction:		
Brandon Tucker	*Approve*	*Sep 18, 2024*

Washtenaw Community College Comprehensive Report

MTH 180 Precalculus
Effective Term: Fall 2022

Course Cover

College: Math, Science and Engineering Tech
Division: Math, Science and Engineering Tech
Department: Math & Engineering Studies
Discipline: Mathematics
Course Number: 180
Org Number: 12200
Full Course Title: Precalculus
Transcript Title: Precalculus
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.
Rationale: Syllabus review - no major changes.
Proposed Start Semester: Winter 2022
Course Description: This course provides the necessary background in analytic geometry, trigonometry and advanced algebraic topics for calculus. Topics include trigonometric functions, identities and graphs, the conic sections, sequences and series and the binomial theorem. A graphing calculator is required for this course. See the time schedule for the current brand and model. Successful completion of this course with a minimum grade of "C" will raise your Academic Math level to 7.

Course Credit Hours

Variable hours: No
Credits: 5
Lecture Hours: Instructor: 75 **Student:** 75
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 75 **Student:** 75
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

College-level Reading & Writing

College-Level Math

Level 5

Requisites

Prerequisite
Academic Math Level 5
or

Prerequisite
MTH 176 minimum grade "C"; may enroll concurrently

General Education
Degree Attributes
Assoc in Applied Sci - Area 3
Assoc in Science - Area 3
Assoc in Arts - Area 3
MACRAO Science & Math
Michigan Transfer Agreement - MTA
MTA Mathematics

Request Course Transfer
Proposed For:

Student Learning Outcomes

1. Solve, graph and perform operations of the conic sections.
   Assessment 1
   Assessment Tool: Outcome-related common departmental exam questions
   Assessment Date: Winter 2023
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: A random sample of 30% of all students
   How the assessment will be scored: Departmentally-developed rubric
   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 coordinator

2. Solve and perform operations and problem representations with sequences, series and binomial expansions.
   Assessment 1
   Assessment Tool: Outcome-related common departmental exam questions
   Assessment Date: Winter 2023
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: A random sample of 30% of all students
   How the assessment will be scored: Departmentally-developed rubric
   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 coordinator

3. Graph, transform identities, and solve problem representations of trigonometric functions.
   Assessment 1
   Assessment Tool: Outcome-related common departmental exam questions
   Assessment Date: Winter 2023
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: A random sample of 30% of all students
   How the assessment will be scored: Departmentally-developed rubric
   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 coordinator

Course Objectives

1. Sketch a graph of conic sections and identify its distinguishing features (i.e. the center, radius, focus, etc.)
2. Simplify the equation of a conic section and identify the conic as a circle, ellipse, hyperbola, or parabola.
3. Evaluate a series.
4. Identify a sequence as geometric or arithmetic.
5. Expand a binomial using the Binomial Theorem.
6. Solve for a part of a right triangle using the trigonometric ratios.
7. Graph a trigonometric function.
8. Simplify a trigonometric expression using fundamental trigonometric identities.
9. Solve word problems using trigonometric properties.

New Resources for Course

TI-84 calculator

Course Textbooks/Resources

Textbooks
Larson, R. Hostetler, R.. *Precalculus With Limits/with Webassign*, 5th ed. New York: Cengage, 2021, ISBN: 1-4390-4909-2.
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Lisa Manoukian	*Faculty Preparer*	*Sep 22, 2021*
Department Chair/Area Director:		
Lawrence David	*Recommend Approval*	*Oct 06, 2021*
Dean:		
Victor Vega	*Recommend Approval*	*Oct 12, 2021*
Curriculum Committee Chair:		
Randy Van Wagnen	*Recommend Approval*	*Mar 01, 2022*
Assessment Committee Chair:		
Shawn Deron	*Recommend Approval*	*Mar 03, 2022*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Mar 04, 2022*

Washtenaw Community College Comprehensive Report

MTH 180 Precalculus
Effective Term: Winter 2018

Course Cover

Division: Math, Science and Engineering Tech
Department: Mathematics
Discipline: Mathematics
Course Number: 180
Org Number: 12200
Full Course Title: Precalculus
Transcript Title: Precalculus
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.
    Pre-requisite, co-requisite, or enrollment restrictions
Rationale: master syllabus update as result by assessment report
Proposed Start Semester: Winter 2018
Course Description: This course provides the necessary background in analytic geometry, trigonometry and advanced algebraic topics for calculus. Topics include trigonometric functions, identities and graphs, the conic sections, sequences and series and the binomial theorem. A graphing calculator is recommended for this course. See the time schedule for the current brand and model. Successful completion of this course with a minimum grade of "C" will raise your Academic Math level to 7.

Course Credit Hours

Variable hours: No
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or
Prerequisite
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Degree Attributes
Assoc in Applied Sci - Area 3
Assoc in Science - Area 3
Assoc in Arts - Area 3
MACRAO Science & Math
Michigan Transfer Agreement - MTA
MTA Mathematics

Request Course Transfer
Proposed For:

Student Learning Outcomes

1. Solve, graph and perform operations of the conic sections.
   Assessment 1
   Assessment Tool: Common departmental exam questions
   Assessment Date: Winter 2017
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: Number of students to be assessed is 8 randomly selected students per section
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: 75% of the students should score 75% or higher on the questions for each outcome
   Who will score and analyze the data: The course coordinator will score the student responses to the questions and then analyze the data

2. Solve and perform operations and problem representations with sequences, series and binomial expansions.
   Assessment 1
   Assessment Tool: Common departmental exam questions
   Assessment Date: Winter 2017
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All sections
   Number students to be assessed: Number of students to be assessed is 8 students (randomly selected) per section
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: 75% of the students should score 75% or higher on the questions for each outcome
   Who will score and analyze the data: The course coordinator will score the student responses to

the questions and then analyze the data

3. Graph, transform identities, and solve problem representations of trigonometric functions.

Assessment 1

Assessment Tool: Common departmental exam questions

Assessment Date: Winter 2017

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: Number of students to be assessed is 8 (randomly selected) per section

How the assessment will be scored: Departmentally-developed rubric

Standard of success to be used for this assessment: 75% of the students should score 75% or higher on the questions for each outcome

Who will score and analyze the data: The course coordinator will score the student responses to the questions and then analyze the data

Course Objectives

1. Sketch a graph of a conic section and identify the distinguishing features (i.e. the center, radius, focus, etc.) of the conic section.
2. Simplify the equation of a conic section and identify the conic as a circle, ellipse, hyperbola, or parabola.
3. Evaluate a series.
4. Identify a sequence as geometric or arithmetic.
5. Expand a binomial using the Binomial Theorem.
6. Solve for a part of a right triangle using the trigonometric ratios.
7. Evaluate the graph of a trigonometric function.
8. Simplify a trigonometric expression using fundamental trigonometric identities.
9. Solve word problems using trigonometric properties.

New Resources for Course

Course Textbooks/Resources

Textbooks

Larson, R. Hostetler, R.. *Precalculus With Limits*, ed. New York: Cengage, 2010, ISBN: 1-4390-4909-2.

Manuals

Periodicals

Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Lisa Manoukian	Faculty Preparer	Aug 21, 2017
Department Chair/Area Director:		
Lisa Rombes	Recommend Approval	Aug 21, 2017
Dean:		

Kristin Good	*Recommend Approval*	*Aug 23, 2017*
Curriculum Committee Chair:		
Lisa Veasey	*Recommend Approval*	*Oct 23, 2017*
Assessment Committee Chair:		
Michelle Garey	*Recommend Approval*	*Oct 24, 2017*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Oct 25, 2017*