

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

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Course section(s)/other population: All sections

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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

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Course section(s)/other population: All sections

Number students to be assessed: A random sample of 30% of all students

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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

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

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Division: Math, Science and Engineering Tech

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Discipline: Mathematics

Course Number: 180

Org Number: 12200

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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.

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Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Solve, graph and perform operations of the conic sections.

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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.

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- 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.

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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:

| | | |
|--|---------------------------|---------------------|
| <i>Kristin Good</i> | <i>Recommend Approval</i> | <i>Aug 23, 2017</i> |
| Curriculum Committee Chair: | | |
| <i>Lisa Veasey</i> | <i>Recommend Approval</i> | <i>Oct 23, 2017</i> |
| Assessment Committee Chair: | | |
| <i>Michelle Garey</i> | <i>Recommend Approval</i> | <i>Oct 24, 2017</i> |
| Vice President for Instruction: | | |
| <i>Kimberly Hurns</i> | <i>Approve</i> | <i>Oct 25, 2017</i> |