Moberly Area Community College
Common Syllabus
MTH150 Precalculus

Current Term

Instructor: [Name]
Office number: [Number]
Office hours: [Hours]
Contact information: [Information]
Classroom number: [Number]
Class days and time: [Days and Time]

Catalog Description: MTH150 Precalculus (5-0-5)
Unified study of MTH140 - Precalculus Algebra and MTH145 - Precalculus Trigonometry designed to prepare students for Calculus. (FA, SP)

Prerequisite: Eligible placement score or grade of “C” or higher in MTH095.

Text(s): The text is an ebook included with the class. Print books are optional and available in the MACC bookstore.
Title: A Graphical Approach to Precalculus with Limits
Author: Hornsby, Lial and Rockswold
Edition: 7th Edition
Publisher: Pearson

Other Required Materials: scientific calculator (recommended TI-30XS Multiview) Calculators with graphing capabilities are prohibited on all tests, exams, and quizzes in this course

Purpose of Course: Precalculus may be used to meet the mathematics requirement for the AA degree. It is intended to serve as a Calculus preparatory course.

Course Objectives: Upon successful completion of this course, students will be able to understand and solve problems involving:
- Function notation
- Linear functions, graphs, equations with applications
- Quadratic, polynomial, rational and absolute value inequalities
- Graphs of basic functions and their transformations
- Absolute value and piecewise functions
- Function operations and compositions
- Complex numbers
- Quadratic functions, graphs and equations
- Polynomial functions, graphs and equations
- Rational functions, graphs and equations
- Root functions, graphs and equations
• Power functions and equations
• Inverse functions and graphs
• Exponential and logarithmic functions, graphs and equations
• Systems of equations in two and three variables with applications
• Matrix operations
• Graphing systems of inequalities
• Radian and degree measures
• Arc length, area of a sector
• Linear and angular velocity
• Unit circle definitions of trig functions
• Right triangle trigonometry
• Graphs of six trigonometric functions
• Trigonometric identities
• Trigonometric equations
• Law of Sines and Law of Cosines
• Inverse trigonometric functions
• Vectors and vector operations
• Polar coordinates

Course Content:
Chapter 1 – Linear Functions, Equations, and Inequalities
Chapter 2 – Analysis of Graphs and Functions
Chapter 3 – Quadratic Functions
Chapter 4 – Polynomial Functions of Higher Degree
Chapter 5 – Rational, Power, and Root Functions
Chapter 6 – Inverse, Exponential, and Logarithmic Functions
Chapter 7 – Systems and Matrices
Chapter 8 – The Unit Circle and the Functions of Trigonometry
Chapter 10 – Trigonometric Identities and Equations
Chapter 11 – Applications of Trigonometry and Vectors

Assessment of Student Learning:
Grades will be calculated in the Canvas gradebook where 70% mastery will be necessary to meet the prerequisite requirements for Analytic Geometry and Calculus 1. Students will need to have 60% mastery for completion of the course to satisfy the requirements for the AA degree, however students who wish to transfer or who are enrolled in special programs may have a minimum of 70% mastery required. Please check with your transfer institution or program director. Grades will be updated at least after each chapter test throughout the semester in the Canvas gradebook.

The grading scale will be structured as follows:
A - 90 - 100%
B - 80 - 89%
C - 70 - 79%
D - 60 - 69%
F - 59% or below
Points will be accumulated by:
Homework/Quizzes: 20%
Chapter/Unit Tests: 60%
Final Exam: 20%

Expected Study Time Commitments: Students should expect to spend approximately 2 to 4 hours per week studying, reading, and working on assignments for each registered credit hour. For example, 6 to 12 study hours per week may be expected for a 3 credit hour class.

Testing Expectations: This is a credit-bearing course. Retakes of tests are not allowed for individual students. Contact the Math Department Coordinator and/or refer to the course pages in the Math Department Canvas Shell for guidelines.

Make-up and late work: Per instructor’s policy

Tardiness: Per instructor’s policy in relationship to points given in the course and not in relationship to attendance.

Schedule of Student Assignments/Activities: Instructors will identify a Student Assignment/Activities schedule. Instructors have the prerogative to construct the schedule by class periods or weeks in order to cover the entire curriculum. A sample schedule is attached.

Statement to Connect Course with General Education Outcomes: In compliance with MACC’s General Education outcomes, the student who successfully completes this course will be able to:

- Higher Order Thinking: Students will demonstrate the ability to distinguish among opinions, facts, and inferences; to identify underlying or implicit assumptions; to make informed judgments; to solve problems by applying evaluative standards; and to reflect upon and refine those problem-solving skills. This outcome involves creative thinking, critical thinking, and quantitative literacy.

College Policies:

Academic Dishonesty: MACC board policy is as follows: “Academic dishonesty by students damages institutional credibility and unfairly jeopardizes honest students; therefore, it will not be tolerated in any form.” Forms of academic dishonesty include but are not limited to the following: violations of copyright law, plagiarism, fabrication, cheating, collusion, and other academic misconduct. Incidents of dishonesty regarding assignments, examinations, classroom/laboratory activities, and/or the submission of misleading or false information to the College will be treated seriously. The procedure for handling academic dishonesty is outlined in the Student Handbook (Policy Handbook, M.010). In cases of alleged academic dishonesty, the burden of proof is on the student, not on the instructor.

Attendance Policy: Students are expected to attend all class sessions for which they are enrolled. The College reserves the right to drop or withdraw students from courses due to lack of attendance.
Students need to be aware that dropping/being dropped from a course and their last date of attendance in the course may impact their financial aid.

MACC faculty are required to track attendance and report lack of attendance. An instructor must complete the appropriate steps to drop a student within one week following the student’s violation of the attendance policy. Additionally, a student’s attendance rate will be calculated based upon the first day the academic session begins (not the student’s date of enrollment in the course). If a student does not attend a course as defined below, the student will be dropped as “Never Attended.”

**Term Length Drop Calculations**

- **16-week:** Any student who misses two (2) consecutive weeks of class will be dropped from the course by the instructor unless acceptable justification is provided by the student and the student still has the opportunity to be successful in the course.
- **8-week:** Any student who misses one (1) consecutive week of class will be dropped from the course by the instructor unless acceptable justification is provided by the student and the student still has the opportunity to be successful in the course.
- **4-week:** Any student who misses two (2) consecutive days of class will be dropped from the course by the instructor unless acceptable justification is provided by the student and the student still has the opportunity to be successful in the course.
- **Intersession:** Any student who misses one (1) day of class will be dropped from the course by the instructor unless acceptable justification is provided by the student and the student still has the opportunity to be successful in the course.

Acceptable justification may include, but is not limited to, family emergencies, illness or injury, college-approved co-curricular and extra-curricular activities, and religious holidays.

**Definition of Course Attendance**

<table>
<thead>
<tr>
<th>In Seat Course</th>
<th>Physically attending scheduled, face-to-face, class meetings</th>
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<tbody>
<tr>
<td>Virtual Course</td>
<td>Being present, via appropriate platform, for scheduled class meetings/activities</td>
</tr>
<tr>
<td>Hybrid Course</td>
<td>Physically attending scheduled, face-to-face, class meetings and active participation in the online portion of the course which may include any or all of the following:</td>
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<tr>
<td></td>
<td>• Completion of quizzes or exams during class meetings and online</td>
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<tr>
<td></td>
<td>• Submission of assignments during class meetings and online</td>
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<td></td>
<td>• Participation in discussions during class meetings and online</td>
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</table>
Online Course

Active participation in an online course includes the following:

- Completion of quizzes or exams
- Submission of assignments
- Participation in threaded discussions

Simply logging into the Learning Management System (Canvas) and/or accessing the course and course related material does not constitute active participation for the online component of hybrid courses or for online courses. (Policy Handbook, I.090 & M.095)

Student Email: MACC Mail is the official student email system at MACC. Official college communication is sent via this email system. Students are responsible for checking their MACC Mail account regularly. Students may also receive notifications and reminders from MACC through the online learning platform. However, students should remain aware that the online learning platform messaging system and MACC Mail (student email) system are two separate systems.

ADA Statement: Students who have disabilities that qualify under the Americans with Disabilities Act may register for assistance through the Office of Access and ADA Services. Students are invited to contact the Access/ADA Office to confidentially discuss disability information, academic accommodations, appropriate documentation and procedures. The Office of Access and ADA Services is located in the Main Library and the phone number is (660) 263-4110 ext. 11240. Students may also contact the Columbia office at 573-234-1067 ext. 12120.

Title IX Statement: MACC maintains a strict policy prohibiting sexual misconduct in any form, including sexual harassment, sexual discrimination, and sexual violence. All MACC employees, including faculty members, are considered mandated reporters of sexual misconduct and as such are expected to contact the Title IX Coordinator when they become aware, in conversation or in writing, of an incident of sexual misconduct. For more information on this policy or to learn about support resources, please see http://www.macc.edu/sexual-misconduct-policy (links to an external site) or contact Ms. Cheryl Lybarger, MACC’s Title IX Coordinator, at 660-263-4110, ext. 11369 or CherylLybarger@macc.edu.
## Tentative Schedule MTH150 - Precalculus

This content is a minimum requirement.

<table>
<thead>
<tr>
<th>Week 1</th>
<th>1.3 – Linear Functions &amp; Inequalities</th>
<th>1.5 – Linear Equations &amp; Inequalities</th>
<th>Quiz 1</th>
<th>2.1 – Graphs of Basic Functions</th>
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</thead>
<tbody>
<tr>
<td>1.4 – Equations of Lines</td>
<td>1.6 – Applications</td>
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<tr>
<td>Week 2</td>
<td>2.2 – Shifts &amp; Reflecting</td>
<td>2.4 – Absolute Value</td>
<td>2.5 – Piecewise Defined Functions</td>
<td>2.6 – Operations &amp; Composition</td>
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<tr>
<td>2.3 – Stretching and Reflecting</td>
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<tr>
<td>Week 3</td>
<td>Review</td>
<td></td>
<td>TEST 1</td>
<td></td>
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<td></td>
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<td></td>
<td>3.1 – Complex Numbers</td>
<td>3.3 – Quadratic Equations &amp; Inequalities</td>
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<td></td>
<td>3.2 – Quadratic Functions</td>
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<tr>
<td>Week 4</td>
<td>3.3 – Quadratic Equations &amp; Inequalities</td>
<td>Quiz 2</td>
<td>4.2 – Synthetic Division, Factors, Zeros</td>
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<td></td>
<td>4.1 – End Behavior &amp; Zeros</td>
<td>4.3 – Finding Zeros</td>
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<tr>
<td>Week 5</td>
<td>4.4 – Polynomial Equations &amp; Inequalities</td>
<td>Review</td>
<td>TEST 2</td>
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<td></td>
<td></td>
<td></td>
<td>5.1 &amp; 5.2 – Rational Functions &amp; Graphs</td>
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<tr>
<td>Week 6</td>
<td>5.3 – Rational Equations &amp; Inequalities</td>
<td>5.4 – Power &amp; Root Functions</td>
<td>5.5 – Equations &amp; Inequalities with Roots</td>
<td>Quiz 3</td>
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<tr>
<td>Week 7</td>
<td>6.1 – Inverse Functions</td>
<td>6.2 – Exponential Functions</td>
<td>6.3 &amp; 6.4 – Logarithmic Functions</td>
<td>6.5 – Exponential/Log Equations</td>
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<tr>
<td>Week 8</td>
<td>6.6 – Applications of Exponents/Logarithms</td>
<td>TEST 3</td>
<td>7.1 – Systems of Eq. &amp; 7.2 – Three Var. Systems</td>
<td>7.3 – Row Transformations</td>
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<tr>
<td>Week 9</td>
<td>Quiz 4</td>
<td>7.4 – Matrix Properties &amp; Operations</td>
<td>7.7 – Systems of Inequalities</td>
<td>TEST 4</td>
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<tr>
<td>Week 10</td>
<td>9.1 – Angles, Arcs &amp; their Measures</td>
<td>9.1 – Angles, Arcs &amp; their Measures</td>
<td>9.2 – The Unit Circle &amp; its Functions</td>
<td>9.3/9.4 – Graphs of Trig Functions</td>
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<tr>
<td>Week 11</td>
<td>9.3/9.4 – Graphs of Trig Functions</td>
<td>Quiz 5</td>
<td>9.5 – Functions of Angles</td>
<td>9.6 – Evaluating Trig Functions</td>
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<td>Week 12</td>
<td>9.7 – Applications of Right Triangles</td>
<td>9.8 – Harmonic Motion</td>
<td>Review</td>
<td>TEST 5</td>
</tr>
<tr>
<td>Week 13</td>
<td>10.1 – Trig Identities</td>
<td>10.2 – Sum &amp; Difference Identities</td>
<td>10.3 – Double Angle Identities</td>
<td>10.4 – Inverse Circular Functions</td>
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<tr>
<td>Week 14</td>
<td>10.5 – Trig Equations</td>
<td>10.6 – Trig Equations</td>
<td>Quiz 6</td>
<td>11.1 – Law of Sines</td>
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<tr>
<td>Week 15</td>
<td>11.2 – Law of Cosines</td>
<td>TEST 6</td>
<td>11.3 – Vectors &amp; 11.4 – Polar Form</td>
<td>Final Review</td>
</tr>
<tr>
<td>Week 16</td>
<td>Finals Week</td>
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**Instructors: Please see posted curriculum for details on each section. You are required to get through all of these sections to meet the Student Learning Outcomes set forth by the state.**