Moberly Area Community College
Common Syllabus

MTH201 Analytic Geometry and Calculus I

Current Term

Instructor: 
Office number: 
Office hours: 
Contact information: 
Classroom number: 
Class days and time: 

Catalog Description: MTH 201: Analytic Geometry and Calculus I (5-0-5) Students are introduced to plane analytic geometry, including limits, continuity, derivative for functions of a single variable, differentials, indefinite and definite integrals, and applications of the derivative and integral. (FA, SP)

Prerequisite: Eligible placement, or MTH145 with a grade of “C” or higher, or MTH150 with a grade of “C” or higher.

Text: An access card for MyMathLab which includes the ebook is required. There is no print option available in the MACC bookstore.
Title: MyMathLab with Pearson eText – Standalone Access Card – for Calculus
Author: Briggs, Cochran, and Gillett
Edition: 3rd Edition 2019
Publisher: Pearson
ISBN: 978-0-13-485683-4

Other Required Materials: None

Calculator policy: The use of calculators is prohibited on all tests, exams, and quizzes in this course.

Purpose of Course: Understanding of the calculus is essential for further course work in any area requiring applied mathematics of physical science.

Course Objectives: Upon successful completion of this course, students will be able to:
  • apply the definition of limit to evaluate limits by multiple methods.
  • use the concept of a limit to determine continuity.
  • find the derivative of polynomial functions, rational functions, power functions, trigonometric functions, and implicit functions following the rules of differentiation.
  • demonstrate how the derivative can be used as a tool for analyzing the behavior of a function.
  • use the derivative to write the equation of a tangent line.
  • apply the derivative to a variety of numerical, geometrical, and physical problems.
• graph functions using the first and second derivative tests.
• define the integral as the limit of a Riemann sum.
• compute definite and indefinite integrals.
• integrate using the substitution method.
• use the Fundamental Theorem of Calculus.
• apply the integral to finding the region between curves and the volume of solids of revolution.

Course Content: A minimum course consists of the material in chapter 1 through chapter 6.
Chapter 1 - Functions
Chapter 2 - Limits
Chapter 3 - Derivatives
Chapter 4 - Applications of the Derivative
Chapter 5 - Integration
Chapter 6 - Applications of Integration

Assessment of Student Learning:
Grades will be calculated in the Canvas gradebook where 60% mastery will be necessary for completion of the course, however 70% mastery is the prerequisite for the next calculus course in the sequence. Students who wish to transfer or who are enrolled in special programs may also 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: 15%
   Chapter/Unit Tests: 65%
   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, weeks, or an overview of topics to be covered. A sample schedule is attached as a guide.

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.

Interession: 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>Place physically attending scheduled, face-to-face, class meetings</th>
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</thead>
<tbody>
<tr>
<td>Virtual Course</td>
<td>Being present, via appropriate platform, for scheduled class meetings/activities</td>
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<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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<tr>
<td></td>
<td>• Participation in discussions during class meetings and online</td>
</tr>
<tr>
<td>Online Course</td>
<td>Active participation in an online course includes the following:</td>
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<tr>
<td></td>
<td>• Completion of quizzes or exams</td>
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<tr>
<td></td>
<td>• Submission of assignments</td>
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<td>• Participation in threaded discussions</td>
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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](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.
Sample Schedule MTH201

<table>
<thead>
<tr>
<th>Week 1</th>
<th>1.1 – Function Review</th>
<th>1.2 – Function Families Review</th>
<th>1.3 – Trig Functions Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 2</td>
<td>2.1 &amp; 2.2 – Intro. to Limits</td>
<td>2.3 – Computing Limits</td>
<td>2.4 – Infinite Limits</td>
</tr>
<tr>
<td>Week 3</td>
<td>2.5 – Limits at Infinity</td>
<td>2.6 - Continuity</td>
<td>Review &amp; Practice</td>
</tr>
<tr>
<td>Week 4</td>
<td>2.7 – Precise Definition of Limits</td>
<td>Review &amp; Practice</td>
<td><strong>Test #1 (Chapter 2 only)</strong></td>
</tr>
<tr>
<td>Week 5</td>
<td>3.1 – Intro. To Derivatives 3.2 – Working with Derivatives</td>
<td>3.3 – Rules of Differentiation</td>
<td>3.4 – Product &amp; Quotient Rules</td>
</tr>
<tr>
<td>Week 6</td>
<td>3.5 – Derivatives of Trig Functions</td>
<td>Review &amp; Practice</td>
<td>3.7 – Chain Rule</td>
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<tr>
<td>Week 7</td>
<td>Review &amp; Practice</td>
<td>3.8 – Implicit Differentiation</td>
<td>Review &amp; Practice</td>
</tr>
<tr>
<td>Week 8</td>
<td>3.6 – Derivatives as Rate of Change 3.9 – Related Rates</td>
<td>Review &amp; Practice</td>
<td><strong>Test #2</strong></td>
</tr>
<tr>
<td>Week 9</td>
<td>4.1 – Maxima &amp; Minima 4.2 – Info from Derivative</td>
<td>4.3 – Graphing Functions</td>
<td>Review &amp; Practice</td>
</tr>
<tr>
<td>Week 10</td>
<td>4.4 – Optimization Problems</td>
<td>4.5 – Linear Approximation &amp; Differentials 4.6 – Mean Value Theorem</td>
<td>4.7 – L’Hopital’s Rule</td>
</tr>
<tr>
<td>Week 11</td>
<td>Review &amp; Practice</td>
<td>4.9 - Antiderivatives</td>
<td>Review &amp; Practice</td>
</tr>
<tr>
<td>Week 12</td>
<td><strong>Test #3</strong></td>
<td>5.1 – Approximating Area 5.2 – Definite Integrals</td>
<td>5.3 – Fundamental Theorem of Calculus</td>
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<tr>
<td>Week 13</td>
<td>5.5 – Substitution Rule</td>
<td>Review &amp; Practice</td>
<td>6.2 – Regions between Curves</td>
</tr>
<tr>
<td>Week 14</td>
<td>6.3 – Volume by Slicing</td>
<td>6.4 – Volume by Shells</td>
<td>Practice and Review</td>
</tr>
<tr>
<td>Week 15</td>
<td><strong>Test #4</strong></td>
<td>4.8 – Newton’s Method (if time permits)</td>
<td>Final Review</td>
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<tr>
<td>Week 16</td>
<td>Final Exams</td>
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**Calculators are not allowed on quizzes, tests or exams.**

**Note to instructors:** At least one quiz is suggested between every test in order to give students feedback prior to the test.