

# Moberly Area Community College Common Syllabus

## MTH202 Analytic Geometry and Calculus II

### Current Term

**Instructor:**

**Office number:**

**Office hours:**

**Response Time:** I typically respond to student emails within 24 hours, Monday through Friday.

**Contact information:**

**Classroom number:**

**Section number(s):**

**Class days and time:**

**Catalog Description:** MTH202 Analytic Geometry and Calculus II (5-0-5)

This course is a continuation of MTH 201. Topics include logarithmic and exponential derivatives and integrals, integration techniques, sequences and series, and parametric and polar curves.. (FA,SP)

**Prerequisite:** MTH201 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: 3<sup>rd</sup> 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 (CO):** Extension of material covered in Analytic Geometry and Calculus I to the transcendental functions. Upon successful completion of this course, students will be able to:

1. define logarithm and exponential function by means of an integral.
2. integrate using the methods of substitution, integration by parts, trigonometric substitution, partial fractions, and improper integrals.
3. solve geometric and physical problems using the processes of integration.

4. work with sequences and infinite series including the test for divergence, integral test, as well as the ratio, root and comparison tests.
5. determine convergence and divergence of infinite series and be able to use power series.
6. introduction to parametric and polar curves.

**Course Content:** A minimum course consists of the material in Chapters 7, 8, 10, 11, and 12.

Chapter 7 – Logarithmic and Exponential Functions

Chapter 8 – Integration Techniques

Chapter 10 – Sequences and Infinite Series

Chapter 11 – Power Series

Chapter 12 – Parametric and Polar Curves

**Statement to Connect Course with Institutional Student Level Outcomes:**

In compliance with MACC's Institutional Student Level Outcomes, the student who successfully completes this course will be able to meet the following institutional learning outcomes:

- **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.

**Evaluation 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%

**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:**

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.

**Collegewide Policies:**

All faculty and students need to be aware of collegewide policies and procedures. Statements on Academic Dishonesty, ADA, Attendance, Title IX, and other important collegewide policies can be accessed by clicking on the following: [Collegewide Policies in Student Resources](#).

**Sample Schedule MTH 202 – Calc. II**

<b>Week 1</b>	Derivative Review Integration Review	7.1 – Inverse Functions	7.2 – Natural Log/Exp Fct
<b>Week 2</b>	7.3 – Log/Exp -Any Base	<i>Practice &amp; Review</i>	7.5-Inverse Trig
<b>Week 3</b>	7.5-Inverse Trig	7.6- L’Hopital	<i>Practice &amp; Review</i>
<b>Week 4</b>	<b>Test #1</b>	8.1-Basic Approaches	8.1-Basic Approaches
<b>Week 5</b>	8.2-Integration by Parts	8.2-Integration by Parts	<i>Practice &amp; Review</i>
<b>Week 6</b>	8.3-Trig Integrals	8.3-Trig Integrals	8.4-Trig Substitution
<b>Week 7</b>	8.4-Trig Substitution	8.5-Partial Fractions	8.6 Integration Strategies <i>Practice &amp; Review</i>
<b>Week 8</b>	8.9-Improper Integrals	<i>Practice &amp; Review</i>	<b>Test #2</b>
<b>Week 9</b>	10.1-Overview	10.2-Sequences	10.3-Infinite Series
<b>Week 10</b>	Review & Practice	10.4-Divergence and Integral Test	10.5- Comparison Test 10.6 – Alternating Series
<b>Week 11</b>	10.7-Ratio & Root Tests	10.8 Choosing a Test	<i>Practice &amp; Review</i>
<b>Week 12</b>	<b>Test #3</b>	11.1 – Approx. Functions w/ Polynomials	11.2-Power Series
<b>Week 13</b>	11.3-Taylor Series	<i>Practice &amp; Review</i>	12.1-Parametric Equatns
<b>Week 14</b>	12.2-Polar Coordinates	12.3-Calculus in Polar Coordinates (if time permits)	12.4 – Conic Sections (if time permits)
<b>Week 15</b>	<i>Practice &amp; Review</i>	<b>Test #4</b>	<i>Final Review</i>
<b>Week 16</b>	<b>Finals Week</b>		

**Calculators are not allowed on quizzes, tests or exams.**

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