MATH 181: Calculus I

GENERAL COURSE INFORMATION

MATH 181: Calculus I, 4 credits

A. Prerequisites
A grade of C or better in MATH 165, appropriate score on mathematics assessment test, or consent of department. Assessment Level(s): ENGL 101/ ENGL 101A or AELW 940/ELAI 990, READ 120 or AELR 930/ELAR 980.

B. Course Description
MATH 181 and MATH 182 are intended primarily for students of the physical sciences, engineering, and mathematics. An introduction to major ideas of single variable calculus including limits, derivatives, and integrals of algebraic and transcendental functions; applications. For computation of tuition, this course is equivalent to five semester hours. Five hours each week. Formerly MA 181.

C. Course Format
This course will be conducted entirely online. There will be no on-campus meetings. Active participation in the online activities and completion of homework and online assignments is required in order to pass this course.

This course will use Blackboard. Information about Blackboard Technical Support can be found at https://cms.montgomerycollege.edu/distance/support/blackboard/. If you need technical assistance with College-supported IT resources, you can reach the Montgomery College IT Service Desk at 240-567-7222.

COMMON COURSE STUDENT LEARNING OUTCOMES

Upon course completion, a student will be able to:

- Determine when and how to apply the Fundamental Theorem of Calculus.
- Evaluate limits graphically, algebraically, and numerically.
- Explain and distinguish between average and instantaneous rates of change and be able to interpret each within the context of an applied problem.
- Find a derivative directly from the definition of a derivative.
- Identify and apply the appropriate rule(s) for symbolic differentiation.
- Implicitly differentiate a function.
- Interpret derivatives verbally in the context of an application.

- Interpret limits verbally.
- Interpret the definite integral as a limit of sums.
- Interpret the indefinite integral as an inverse process of differentiation and evaluate indefinite integrals.
- Set up and evaluate definite integrals to solve applied problems, such as problems involving area, motion, and net change.
- Use derivatives to determine the extreme values of a function.
- Use derivatives to model and analyze a variety of applications, such as problems involving optimization, related rates, and motion.
- Use first and second derivatives to obtain information about the graph of a function and use the graph of a function to obtain information about its first and second derivatives.
- Use technology to discover, explore, illustrate, and understand limits, derivatives, and integrals.

For a listing by chapter, see the "Course Outcomes by Chapter" learning module under Course Content on Blackboard.

TEXTBOOK AND SUPPLIES

A. **MyOpenMath (Required):** an online course/homework system. **This is a free online course/homework system!** It includes a textbook – *Contemporary Calculus*, by Dale Hoffman; instructional videos; online homework assignments; and a discussion board. Our course site is organized by topics. See the Start Here – Course Orientation module on the course Blackboard page for more details on signing up for our MyOpenMath course.

B. **Calculator:** You will need a graphing calculator for this course. I would recommend a TI-83 or TI-83 Plus. While you are allowed to use a graphing calculator for tests/assignments, you may **not** use a CAS calculator such as a TI-89 for any tests/assignments in this course! (If you do not have a graphing calculator, you can rent one at any MC campus.)

COURSE REQUIREMENTS

A. Homework

Homework will be assigned for each course topic. Homework assignments will be completed online through MyOpenMath. You are responsible for completing ALL problems that are on MyOpenMath. Even though the homework is completed through MyOpenMath, you should get in the habit of writing out your work for each problem.

You are given two attempts at every problem in MyOpenMath. Once you have used two attempts at a problem, the correct answer will be displayed. If you did not answer the problem correctly, you will need to click on "Try another similar question". A new similar problem will be displayed and you will then have two attempts to correctly answer this problem. You can repeat this process an unlimited number of times until you correctly answer the problem. There is no score deduction for using multiple attempts on homework problems.

**** YOU CAN REQUEST ONE THREE-DAY EXTENSION PER HOMEWORK ASSIGNMENT IN MYOPENMATH. THIS IS CALLED "LATEPASS" IN MYOPENMATH. LATE HW PROBLEM SUBMISSIONS WILL BE PENALIZED BY 20%.****

B. Discussions

Participating in online discussions is optional for this course and does not count towards your final grade in the class. Discussions give you the opportunity to interact with your peers in the course and the instructor, and to talk about the course material. We will use the discussion board in MyOpenMath (not Blackboard).

C. Exams

We will have three exams during the semester and a comprehensive two hour final exam. You will need to take each exam in person at an assessment center on one of the MC campuses. Exams are closed book, closed note, and closed all other resources (the internet, etc.) unless otherwise noted. Each exam will be completed on paper (not taken on a computer).

****TEST GRADES ARE FINAL. THERE ARE NO RETAKES FOR TESTS. I DO NOT DROP ANY TEST GRADES.****

If you cannot take an exam during the specified time frame on the course schedule due to extenuating circumstances (for example, a serious illness) you must contact the instructor before the due date for the exam. If you provide the instructor with appropriate documentation (for example, a doctor's note describing a week long illness) a make-up exam may be scheduled. However, discretion to give a make-up exam lies with the instructor.

Make sure you give yourself enough time to complete each assignment before the deadline!

Course Grade Breakdown

Homework	**21%**
Exam 1	**18%**
Exam 2	**18%**
Exam 3	**18%**
Final Exam	**25%**

Course Grading Scale

90-100%	**A**
80-89%	**B**
70-79%	**C**
60-69%	**D**
<60%	**F**

STUDENT CODE OF CONDUCT/COLLEGEWIDE POLICIES AND PROCEDURES

Important Student Information Link: http://cms.montgomerycollege.edu/mcsyllabus/

In addition to course requirements and objectives that are in this syllabus, Montgomery College has information on its web site (see link above) to assist you in having a successful experience both inside and outside of the classroom. It is important that you read and understand this information. The link above provides information and other resources to areas that pertain to Student Success such as: Student Behavior (Student Code of Conduct); Student e-mail, College Tobacco Free Policy; Course Withdrawal and Refund Information; Resources for Military Service Members, Veterans and Dependents; how to access information on delayed openings and closings; how to register for Montgomery College's Alert System and how closings and delays can impact your classes.

Finally, any student who may need accommodations due to a disability, please contact the Disability Support Services office on your campus as soon as possible (R-CB122; G-SA172; or TP/SS-ST233). If you have an accommodation letter from DSS, please contact me to discuss arrangements for your accommodations. Any student who may

need assistance in the event of an emergency evacuation must identify to the Disability Support Services Office; guidelines for emergency evacuations are at: https://cms.montgomerycollege.edu/EDU/Plain2.aspx?id=4162

If you have any questions please bring them to your professor. As rules and regulations change they will be updated and you will be able to access them through the link. If any student would like a written copy of these policies and procedures, the professor would be happy to provide them. By registering for this class and staying in this class, you are indicating that you acknowledge and accept these policies.

Note that:

** An instructor can drop a student from a course if (s)he has not logged into the course for a period of time that is longer than one week.

** Any student auditing this course should contact me before or during the first class session. You are still required to complete all course activities unless otherwise agreed upon.

**** The Montgomery College e-mail account is the official means of communication between the instructor and the student. It is your responsibility to routinely check your MC e-mail for College and class information. **All correspondence for this course between instructor and student should be completed through Blackboard's Course Mail. It is recommended that you check your Course Mail daily.**

** **If the college is closed (for inclement weather or another reason), online work will continue for this course unless otherwise communicated by the instructor!** If you are experiencing a power outage and cannot continue work on the course, please leave a voice mail message on my office phone.

COURSE POLICIES FOR AN ONLINE COURSE

A. Getting Started

First of all, **Are You Ready for Online Learning?** To find out take the Pre-Assessment Survey: http://cms.montgomerycollege.edu/distance/before/preassessment/. After you have completed this survey, login to Blackboard using the following steps:

1. Log in to MyMC.
2. Click on the Blackboard icon in the upper right-hand corner.
3. Click on the course title, MATH 181 DL – Spring 2019, CRN 32809.

Once you are in the course Blackboard site, print or save a copy of the syllabus (found under the Syllabus tab on the course menu), and read it over.

Then complete the course orientation by working through the Start Here – Course Orientation module (which can be found under Course Content on the course menu).

B. Technical Requirements and Technical Support

You will need the following to participate online:

- Regular use of a computer with Internet access. Expect to spend several hours (about 12 – 16) online each week.
- A web browser such as Internet Explorer or Firefox.

For technical assistance with college supported resources, call the Montgomery College IT Service Desk at 240-567-7222.

System Downtime
The Office of Information Technology conducts computer network maintenance on Sunday morning from 12:01 AM to 6:00 AM each week. During this time you may be not be able to access MyMC to login to Blackboard. Do not rely on this time to submit course work.

C. Discussion Participation

First of all, **what is an online discussion?**
An online discussion is similar to an email conversation with some important differences.

- An online discussion can involve a number of participants, such as a group or the entire class.
- All messages stay posted in the discussion area for participants to read and re-read at any time throughout the course.
- An online discussion can last for a week or longer.

If you are new to online discussions, you will find them as rigorous as any on-campus classroom discussion. The purpose of a discussion is dialogue as a means of learning. In this course, you may spend a good deal of time in online discussions.

Guidelines for Participating in an Online Discussion

- *You are expected to read all posted messages!*
- Respond to each other promptly.
- Use a person's name when you reply to a message, and add your name at the bottom of your message. It helps all of us maintain a clearer sense of who is speaking and who is being spoken to. As we begin to associate names with tone and ideas, we come to know each other better.
- Change the subject line when you introduce a new topic. The value of this tip will become apparent as the number of messages grows.
- Reinforce each other's ideas with comments such as "Good Point" or "I agree" or "Thanks for the comments." (These comments won't add to your grade in the course, but they are nice to hear!)
- Avoid angry or rude comments. The use of objectionable, sexist, or racist language is notacceptable.
- Use emoticons to communicate humor, e.g. :-) ;-) :-0 :-/ :-(and so on...
- Oh, and have fun!

For this course, we will use the discussion board as a question and answer forum for content/homework questions. As the instructor, I will read all posted messages and generally respond to the questions posted **within two business days**. However, if I have not answered a question yet, students can answer the question as well.

Remember that in this course, using the discussion board is optional and does not count towards your final grade in the class.

D. Use of Email

- **Use Course Mail in Blackboard for all private communication.**
- Use my Montgomery College email **only** if Blackboard is unavailable.
- **Generally, I will respond to emails within two business days.**

- If a time arises when I will be unable to respond to email within two business days, I will let the class know.
- **Use the discussion board forums to pose questions about assignments and course content.** Your fellow students may have similar questions. **I will check these topics regularly and will generally respond within two business days.**

E. Assignments

Submitting discussion posts and homework electronically
Homework and discussion posts can only be completed directly through MyOpenMath. Because technology can be unreliable when you least expect it, plan accordingly to complete assignments! Do not wait until the last minute!

Submitting exams
You will take each exam in person at an assessment center on one of the MC campuses. Each exam will be completed on paper (not taken on a computer) in the assessment center; thus, you will submit each exam while at the assessment center.

Feedback
You will receive instant feedback/grades on homework in MyOpenMath. You can view all of your course grades in the MyOpenMath gradebook as well.

You can expect grades to be posted for all exams within 5 business days of the due date for that exam. I will post grades for these exams on MyOpenMath which you can view under Gradebook on the course menu.

Backing up your work
In this course you will complete most of your assignments on a computer. You are responsible for ensuring the safety of your work by making regular backups (extra copies). "The computer ate my homework, I lost my flash drive, my hard drive crashed, or my printer isn't working," are not acceptable excuses. Make frequent backups of your work and save the work in multiple places.

F. Privacy
Electronic communications do not guarantee privacy. In addition to the instructor, technical staff or administrative personnel may also access this course. Also, in order to respect students' privacy, sharing personal information or posting photographs is voluntary, not required.

G. Accessibility
There is a link to Blackboard's Accessibility Statement at the bottom of each course home page. Look for the link to http://access.blackboard.com.

There is also a link to MyOpenMath's Accessibility Statement on its home page. Look for the Accessibility link on the bottom of the home page.

ADDITIONAL GENERAL INFORMATION

The instructor reserves the right to make changes to this syllabus to provide the best educational experience for the student. Changes will be announced (in writing) on Blackboard before they are implemented.

COURSE SCHEDULE & ASSIGNMENTS

This course will be conducted entirely online. There will be no on-campus meetings. This is a tentative schedule and is subject to change.

***** section numbers correspond to sections from the course textbook and MyOpenMath

Week	Topics to Learn *	Assignments *	Topics to Learn/Assignments Due Dates
1: Tuesday 1/22 – Thursday 1/24 **1/21: MC CLOSED**	**Start Here – Course Orientation module**: entire module **1.0**	MyOpenMath HW: 1.0	Thursday 1/24, 11:59pm
2: Friday 1/25 – Thursday 1/31	**1.1 – 1.3**	MyOpenMath HW: 1.1 – 1.3	Thursday 1/31, 11:59pm
3: Friday 2/1 – Thursday 2/7	**2.0 – 2.2**	MyOpenMath HW: 2.0 – 2.2 **Prepare for Exam 1**	Thursday 2/7, 11:59pm
4: Friday 2/8 – Thursday 2/14	**Exam 1** **2.3 – 2.4**	**Exam 1 on 1.0 – 1.3, 2.0, 2.1: You can take on 2/8, 2/9, 2/11 or 2/12** MyOpenMath HW: 2.3 – 2.4	Tuesday 2/12, closing time for your preferred assessment center Thursday 2/14, 11:59pm
5: Friday 2/15 – Thursday 2/21	**2.5 – 2.6**	MyOpenMath HW: 2.5 – 2.6	Thursday 2/21, 11:59pm
6: Friday 2/22 – Thursday 2/28	**2.7 – 2.9**	MyOpenMath HW: 2.7 – 2.9 **Prepare for Exam 2**	Thursday 2/28, 11:59pm
7: Friday 3/1 – Thursday 3/7	**Exam 2** **3.1 – 3.2**	**Exam 2 on 2.2 – 2.9: You can take on 3/1, 3/2, 3/4, or 3/5** MyOpenMath HW: 3.1 – 3.2	Tuesday 3/5, closing time for your preferred assessment center Thursday 3/7, 11:59pm

8: Friday 3/8 – Thursday 3/21 **3/11 – 3/17: SPRING BREAK**	**3.3 – 3.4**	MyOpenMath HW: 3.3 – 3.4	Thursday 3/21, 11:59pm
9: Friday 3/22 – Thursday 3/28	**3.5 – 3.7**	MyOpenMath HW: 3.5 – 3.7	Thursday 3/28, 11:59pm
10: Friday 3/29 – Thursday 4/4	**4.0 – 4.2**	MyOpenMath HW: 4.0 – 4.2	Thursday 4/4, 11:59pm
11: Friday 4/5 – Thursday 4/11	**4.3 – 4.5**	MyOpenMath HW: 4.3 – 4.5 **Prepare for Exam 3**	Thursday 4/11, 11:59pm
12: Friday 4/12 – Thursday 4/18	**Exam 3** **4.6 – 4.7**	**Exam 3 on 3.1 – 3.7, 4.0 – 4.3: You can take on 4/12, 4/13, 4/15 or 4/16.** MyOpenMath HW: 4.6 – 4.7	Tuesday 4/16, closing time for your preferred assessment center Thursday 4/18, 11:59pm
13: Friday 4/19 – Thursday 4/25	**7.0 – 7.2**	MyOpenMath HW: 7.0 – 7.2	Thursday 4/25, 11:59pm
14: Friday 4/26 – Thursday 5/2	**7.3**	MyOpenMath HW: 7.3 **Prepare for the Final Exam**	Thursday 5/2, 11:59pm
15: Friday 5/3 – Thursday 5/9	**Final Exam**	**Final Exam - cumulative! You can take on any day from 5/3 – 5/9**	Thursday 5/9, closing time for your preferred assessment center