Instructor: Mahesh Agarwal
Contact information:

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Class timings:
Mon, Wed 11:30 a.m. - 12:45 p.m. 1015CB
Fri 11:30 a.m. - 12:20 p.m. 2046CB

Office hours:
Mon, Wed, Fri 10:15 a.m. - 11:15 a.m.

Textbook:
Calculus by James Stewart 7th edition. You are free to use an edition of your choice. Most of the time the class discussions will be self sufficient. Though if you intend to take Math 116 then it is advisable to get the suggested textbook.

Course description:
The goal of this course is to give an introduction to some of the fundamental ideas of calculus. This course will assume a good understanding of Math 105 (i.e. functions and algebra). We will introduce the concept of derivatives, learn how to calculate them and also study their applications to real life. We will then study antiderivatives with the aim of computing areas and volumes.

Participation/Attendance (5%):
You are expected to attend each class meeting and participate in the class activities. While there is no formal grade assigned for attendance, there will be credit for participation. Prolonged absence will be penalized. Each student will be required to present their work on the board on at least 3 occasions during the semester, doing so at least once each month. This can be done in forms of presenting your assignment solutions or quiz solutions, extra reading etc. as mentioned by the instructor. Your answers do
not have to be perfect but must display effort and at least the makings of a solution. If you

**Assignments (20%):**
There will be weekly assignments with around 10-15 problems each. These assignments will be given on an online platform called WeBWorK. You can access it using your CTools page for this course. To access CTools use the link:

https://ctools.umich.edu/

To directly access WeBWorK for this course you can use the following link:

https://instruct.math.lsa.umich.edu/webwork2/ma115-009-umd-w13

You are encouraged to discuss the problems with your classmates. But since each student will have a different problem you will have to work out the steps on your own. It is also advisable to work out the problems on paper first and then enter the answers online. Late assignments will NOT be accepted as sufficient time will be given to finish them.

**Quizzes (15%):**
There will be 5-6 quizzes given during the course of the semester. Most quizzes will be announced in the previous lecture. At least one half of each quiz will directly test you on a result discussed in class or problems given on the homework. They will be used to review and reinforce the ideas that we encounter in the course. So you are expected to perform well on them. There will be no make up quizzes but the lowest quiz score will be dropped.

**Examinations:(60%)**
There will be 2 one hour exams and a final. They are scheduled as follows:

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Exam 1</td>
<td>February 11</td>
<td>in class</td>
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<tr>
<td>Exam 2</td>
<td>March 11</td>
<td>in class</td>
</tr>
<tr>
<td>Final Exam</td>
<td>April 22</td>
<td>11:30-2:30 p.m.</td>
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</tbody>
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**Grading scheme:**
Your final grade will be determined by the following scheme:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments and Participation</td>
<td>25%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Hour exams</td>
<td>30%</td>
</tr>
<tr>
<td>Final exam</td>
<td>30%</td>
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</tbody>
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The grades will be curved and the grades assigned will NOT be worse than:
Gateway tests:
There will be two gateway tests that will be given during the first half of the course. The first test will be exclusively on concepts of functions and basic algebra. The second gateway will test your understanding of the rules of differentiation. To pass the second test you need to demonstrate proficiency in finding derivatives. You can take multiple attempts on the gateway and will be given sufficient time to pass it. **Passing the gateways demonstrates a minimum proficiency required to graduate from this course.** If you do not pass the gateway in the stipulated time frame, you will loose one-third of a letter grade for each gateway that you do not pass.

In the past almost every student who has succeeded in the course has passed both the gateways. More details on the gateway will be provided during the second week of class.

Class Policy:
Your attendance and full participation in class is important for you and your career. For this reason, and out of respect of others, we would like to eliminate distractions to you and others in the classroom. Think ahead and **silence and put away your phones** at the beginning of class. Also put away any other electronic devices such as ipods or mp3 players. Do not plan to use the calculator on your phone or ipod. These devices should be stored and not used in class. A laptop/ipad should be used only for instructor-requested, course-related activities. Text messaging is **never** appropriate during class.

When emailing me, your message should be well composed, thought out and proof-read. Do not forget to sign your name and mention the course that you belong to. **(This policy has been been adapted from that of the Math Education Team).**

Students with disabilities:
The university will make reasonable accommodations for persons with documented disabilities. Students need to register with Disabilities Resource Services (DRS) every semester they are enrolled for classes. DRS is located in Counseling and Support Services, 2157 UC. To be assured of having services when they are needed, students should register no later than the end of the add/drop deadline of each term.

Statement of academic integrity:
The University of Michigan-Dearborn values academic honesty and integrity. Each student has a responsibility to understand, accept, and comply with the University’s
standards of academic conduct as set forth by the Code of Academic Conduct, as well as policies established by the schools and colleges. Cheating, collusion, misconduct, fabrication, and plagiarism are considered serious offenses.

**Tentative course schedule:**
A tentative course schedule can be found on my webpage:

http://www-personal.umd.umich.edu/~mkagarwa
Survival Guide: Some Tips for Success in College Mathematics

**Slow and steady:** Learning mathematics is a process that takes prolonged, consistent effort. Cramming at the end of a semester is a poor strategy in any class, but it is spectacularly ineffective in math! Set aside time each week, if not each day, to devote to the course. It doesn’t have to take over your life, but it is important to incorporate the out-of-class coursework into your daily routine. If time management has not been your strong suit in the past, consider visiting the helpful people at the Student Success Center (http://www.umd.umich.edu/success) for some expert advice. As a thumb rule for every credit hour of class you should spend approximately two to three hours outside of class studying.

**Do the homework, and do it well:** Learning mathematics is often compared to playing a sport or practicing a musical instrument. Frequent effort is required to develop and hone your mathematical skills, and the best way to do this is by working on problems. You should endeavor to do every homework problem when it is assigned. In addition, your goal in working on a homework problem should not simply be to find an answer. Instead, strive to communicate in writing the steps and thought processes that bring you to an answer. In writing up the solution to problems, ask yourself if one of your classmates would be able to read through your work and understand how you solved a problem.

**Study together:** You should spend some individual time thinking about the subject matter and exercises, but working with your classmates is also an effective way to learn mathematics. A study group allows you to interact with people who are closely attuned to your questions and are likely to be struggling with the same issues. Conversely, explaining things to a peer involves you in understanding the subject more deeply. As if this weren’t enough, working in a study group is a great way to meet people and make friends!

I highly recommend that you get to know some of your classmates in order to work together outside of class. I am more than happy to help in facilitating this - please let me know if you are interested in being part of a study group. In the past my students have found the chat-room on CTools as a very useful platform for discussing their problems and ideas. I visit the chat room once in a while myself to help students out.

**Come to class:** Attending class meetings is a key ingredient for success in any college course. It is my goal to make each class meeting, even those that are lecture-oriented, an active and engaging experience. Be prepared to think, work on problems, and discuss things with your classmates.
Read the book: Reading a mathematics book is an acquired skill, as is reading in any technical discipline. Reading the relevant section or sections of the book is an excellent way to solidify the concepts that come up in lecture, especially if the reading is done beforehand. Try to make reading the text a regular activity; when you are stuck on a problem in the middle of the semester, it is difficult to glean anything from the book if you have not been regularly reading it. Reading a math book is an experience that requires active input from you as the reader - have paper and pencil handy, try to work examples on your own before reading over the supplied solutions, and make note of key concepts. Expect to get stuck from time to time, but don’t let this discourage you. Make note of where you are confused, and ask about it during class, office hours, or a group study session.

Review: A good way to stay prepared for quizzes and exams is to periodically review what has been discussed in the course. We will cover quite a lot of ground over the semester, and it can be very challenging to prepare for a final exam if much of the course is not fresh in your mind. Some useful ways to do this are to work on review problems, redo problems on old quizzes and midterms (especially if you made a mistake the first time), and review the boxed and highlighted parts of the textbook.

Come to office hours: Please feel free to stop by my office hours if you have any questions or concerns about the course. I have gladly set aside these hours to meet with students, so please do not hesitate to drop in. Also, don’t be shy about emailing me to schedule an appointment if you are not able to make my scheduled office hours.

I want for you to succeed in this course! Let me know how else I can help, and good luck in your studies!