Math 151: Calculus 1
Spring 2016

Note: This syllabus is subject to change.
Instructor: Dr. H. Moon
Office: SH168
email: hamoon@smcm.edu
Phone: 240.895.2197
Office hours:
Website: http://faculty.smcm.edu/hamoon
TA:
email:

Course Description

Calculus is the study of how things change. In our world, things change all around us. Rockets fly high above the earth, all the while the mass changes based on fuel consumption and gravitational forces change as it gets further from the earth's atmosphere. A satellite's position change as it orbits and falls toward earth, adjusts and continues to orbit. A cancerous mass grows and shrinks. A company's profits increase and decrease as demand for the product changes. A person's mood changes depending on location, job security, relationships, financial success, and much more. In this class, you will learn to describe how quantities are related and change with respect to each other. In particular, we will cover limits, derivatives, integrals, and the Fundamental Theorem.

Suggested Text

Matthew Boelkins, David Austin, and Steven Schlicker. *Active Calculus*, 2015 Edition. http://scholarworks.gvsu.edu/books/10/

Homework

Homework will be assigned each day of the class. Homework will be due at the beginning of class on the due date. All work is to be shown on every homework problem. Your homework should be **stapled and written neatly**. Homework is worth 30% of your grade. Neatness is worth 10% of your homework score.

Notebook (Changed)

It is a good practice to keep notes organized and complete. At each exam, you will turn in your notes. In your notes, you should write out in class exercises, other class materials, questions you have after revisiting class notes and answers to these questions, notes taken while reading the text, clearly worked out activities from the reading, questions about material you read, and answers to these questions. You can ask me for help in answering these questions. Many of you may have already taken Calculus. So, the questions you ask will be questions that help you gain a deeper understanding. I will no longer grade your notebook.

Exams

There will be a total of four exams, three during the evening sessions (on Feb 17th, Mar 23rd, and April 13th), and a final on Tuesday May 10th from 9am-11:15am. Since mathematics builds on previous concepts, you can expect to see old material as well as new on every exam.
No make up exams will be given. Barring a serious, incapacitating illness, religious conflict, or some very similar reason, **no excuses will be accepted for a missed exam**. No notes, books, or electronic devices (such as cell phones and calculators) will be allowed in the exam room. Each of the first three exams is worth 15% of your grade and the final exam is worth 20% of your final grade. (This part is exactly the same as the old syllabus.)

Evening Sessions and Morning Session Participation

Attendance is required at the evening sessions. 5% of your grade is reserved for class participation which includes both morning and evening session participation. There is value in being present for yourself and also for your peers. Each of you may have a way of describing or asking something that will make concepts clearer for your classmates. This contribution is invaluable and so I will incorporate it into this class.

NEW!!! In class quizzes

Every day in class, there will be a quiz. The quiz will cover material we've discussed in class this semester. Your quiz scores are worth 10% of you exam 3 and 10% of your final exam. No make-up quizzes will be given.

How to succeed

A successful student will use all of his/her resources. To start, you should be prepared for each class by reading ahead in the textbook and attempting exercises in the text before we discuss the section.
It is also very important to communicate with me throughout the semester. I am available during my office hours to discuss any concerns or problems you might have and to help you with understanding. I will be free at other times so feel free to drop by my office. If you cannot find me, try emailing me to make an appointment.
Form study groups with your classmates. Sharing you ideas with others will help you understand the material better. Also, hearing a classmates explanation can also be invaluable.
Finally, your TA is available to help with questions also. Bring your questions to the TA sessions.

Attendance and Disabilities

Students are expected to attend all class sessions including the evening sessions. Any conflicts should be resolved as soon as possible. Too many missed classes will be reflected in your class grade. As stated above, 10% of your grade is class participation. If you are not in class, you will not get participation points.
Any student with a disability requiring accommodations in this class is encouraged to contact me after class or during my office hours. Students with a disability may also wish to contact William Howard in the Office of Academic Services, Glendening Hall, suite 230, x4388.

Schedule

Month	Date	Plan	Reading
January			
	20	Rates of Change	Section 1.1
	22	Limits	Section 1.2
	25, 27, 29	Understanding the meaning of a Derivative	Sections 1.3, 1.4, 1.5
February			
	1	Understanding the meaning of the second derivative	Section 1.6
	3	Understanding Limits and how they tell us about Continuity and Differentiation	Section 1.7
	5	Linear Approximation and Tangent Lines	Section 1.8
	8, 10, 12	Differentiation Rules	Sections 2.1, 2.2, 2.3, 2.4
	15, 17, 19	The Chain Rule	Section 2.5
	17 eve	**Exam 1**	covering up to 2.5
	22, 24, 26	Newton's Method, The Intermediate Value Theorem The Mean Value Theorem	Handout
	29	Implicit Differentiation	Sections 2.6
March			
	2, 4	Implicit Differentiation	Sections 2.6, 2.7
	7, 9	More on Limits	Section 2.8
	11	L'Hôpital's Rule	Section 2.9
	14, 16, 18	Spring Break	
	21	L'Hôpital's Rule	
	23, 25, 28	Curve Sketching	Sections 3.1, 3.2
	23 eve	**Exam 2**	Covering Chapters 1 and 2
	30	Optimization	Section 3.3
April			
	1	Optimization	
	4, 6	Related Rates	Sections 3.4, 3.5
	8, 11	Integrals	Sections 4.1, 4.2
	13, 15,	Antiderivatives	Sections 4.3, 4.4
	13 eve	**Exam 3**	Covering Chapters 1, 2, and 3
	18, 20, 22	Integration and techniques	Sections 5.1, 5.2, 5.3
	25, 27, 29	More on Integration techniques	Section 5.3
May			
	10	**Final Exam 9am-11:15 am**	