

MATH 2250 – CALCULUS I FOR SCIENCE AND ENGINEERING

Fall 2019

Instructor:	Akram Alishahi	Time:	MWF 10:10 am-11:00 am	Forest Res-1 0303
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Office hours:	T 9:20 am-10:50 am			
	W 12:30 pm-2 pm			

Course Page: eLearning Commons (<https://uga.view.usg.edu>)

UGA math 2250 Website: <http://www.math.uga.edu/2250>

Textbook: *OpenStax Calculus I, UGA Custom Edition*

Available here: <https://cnx.org/contents/HBUT095p@3.1:BUxRn5Hd@18/Preface>; please download the PDF so that you can see problem numbers.

Course Description: In this course we will work to develop your critical thinking skills. This course focuses on using the derivative to better understand the behavior of functions. We will discuss the limit, the derivative, and the antiderivative, both conceptually and computationally. Throughout the semester, we will use calculus concepts to model and solve various problems in science and engineering, with particular emphasis on graphs, optimization problems, and basic integration problems. In these science and engineering problems, we will focus on how to transfer course knowledge to specific applied scenarios.

Prerequisites: MATH 1113 or permission of department

Assignments: Students will be evaluated in the following areas:

1. **Midterm exams:** Our midterm exams will be traditional paper-and-pencil exams given during class time. **No makeup exams will be given**, and these exams may not be repeated. If you are absent from a scheduled midterm, and your absence is excused (generally, this requires a medical or legal explanation, with supporting documentation), the grade for the missing exam will be replaced with your final exam grade. If you know in advance that you cannot be in attendance for a particular midterm, discuss this with me ASAP.

Tentative midterm dates:

Midterm 1:.....Sep 03

Midterm 2:.....Oct 01

Midterm 3:.....Oct 29

Midterm 4:.....Nov 19

2. **Final exam:** Tuesday, December 10, 7 p.m-10 p.m

Students from all sections of MATH 2250 take the same exam at the same time, in a location determined by the registrar (location TBD in late November)

If you have three or more exams scheduled during a 24-hour period, you are eligible to request a rescheduled exam; mass exams are to be rescheduled first if possible. See the official university exam conflict policy for details: <https://curriculumsystems.uga.edu/curriculum/finalExamConflicts/>

3. **Quizzes:** We will have six 15 min quizzes in class, approximately every other week. The exact dates are marked on the tentative course schedule in this syllabus. The lowest score of the quizzes will be dropped. Make-up quizzes will not be given.

4. **WeBWork:**

This course has a free online homework system called WeBWorK. Your username for WebWorK is your UGA myID, and your password is your nine digit 810 or 811 student number. To access WeBWorK off campus, you will need a VPN; here is a link to information about using VPN with WeBWorK: <http://www.math.uga.edu/webwork/VPN>

Grading:

Midterms	60% (Each exam counts for 15%)
Final	20%
Quizzes	10%
WeBWork	10%

Getting Help: If you're having trouble, get help immediately. The first places to look for help are my office hours. Office hours are times that I set aside especially for students to come and discuss math. When you come to office hours, you can arrive at any time that is convenient for your schedule (not just at the beginning). Be sure to allow yourself enough remaining time to ask questions. Here are some things we can do during office hours:

- go over problems you are stuck on
- talk about questions from class work
- discuss strategies for studying, taking exams, etc.
- talk about how you are doing in the class

If you want to meet with me individually or speak privately during office hours (e.g. about your grades), email me at least 24 hours in advance.

There are also study hall/tutoring options available. See <https://www.math.uga.edu/2250help> for more information.

Tentative Course Outline:

Week	Date	Day	Title	Book Section
1	08/14	W	A Preview of Calculus	2.1
	08/16	F	The Limit of a Function	2.2
2	08/19	M	The Limit Laws	2.3
	08/20	T	The Limit Laws	2.3
	08/21	W	Continuity	2.4
	08/23	F	Flex Day- Quiz 1	Flex
3	08/26	M	Defining the Derivative	3.1
	08/27	T	The Derivative as a Function	3.2
	08/28	W	Differentiation Rules	3.3
	08/30	F	Review	Review
4	09/02	M	Holiday - Labor Day	
	09/03	T	Midterm 1	2.1-3.3
	09/04	W	Derivatives as Rates of Change	3.4
	09/06	F	Derivatives of Trigonometric Functions	3.5
5	09/09	M	The Chain Rule	3.6
	09/10	T	Flex Day - Quiz 2	Flex
	09/11	W	Implicit Differentiation	3.8
	09/13	F	Implicit Differentiation	3.8
6	09/16	M	Derivatives of Inverse Functions	3.7
	09/17	T	Derivatives of Exponential and Logarithmic Functions	3.9
	09/18	W	Derivatives of Exponential and Logarithmic Functions	3.9
	09/20	F	Related Rates - Quiz 3	4.1
7	09/23	M	Related Rates	4.1

	9/24	T	Related Rates	4.1
	9/25	W	Linear Approximations and Differentials	4.2
	9/27	F	Maxima and Minima	4.3
8	9/30	M	Review	Review
	10/01	T	Midterm 2	3.4-4.2
	10/02	W	The Mean Value Theorem	4.4
	10/04	F	Derivatives and the Shape of a Graph	4.5
9	10/07	M	Derivatives and the Shape of a Graph	4.5
	10/08	T	Derivatives and the Shape of a Graph - Quiz 4	4.5
	10/09	W	Limits at Infinity and Asymptotes	4.6
	10/11	F	Limits at Infinity and Asymptotes	4.6
10	10/14	M	Applied Optimization	4.7
	10/15	T	Applied Optimization	4.7
	10/16	W	Applied Optimization	4.7
	10/18	F	Flex Day - Quiz 5	Flex
11	10/21	M	L'Hopital's Rule	4.8
	10/22	T	L'Hopital's Rule	4.8
	10/23	W	Newton's Method or Flex	4.9
	10/25	F	Antiderivatives	4.10
12	10/28	M	Review	Review
	10/29	T	Midterm 3	4.3-4.10
	10/30	W	Approximating Area	5.1
	11/1	F	Fall Break	
13	11/04	M	Approximating Area	5.1
	11/05	T	The Definite Integral	5.2

	11/06	W	The Definite Integral	5.2
	11/08	F	The Fundamental Theorem of Calculus	5.3
14	11/11	M	The Fundamental Theorem of Calculus	5.3
	11/12	T	Integration Formulas and the Net Change Theorem - Quiz 6	5.4
	11/13	W	Substitution	5.5
	11/15	F	Integrals Involving Exponential and Logarithmic Functions	5.6
15	11/18	M	Review	Review
	11/19	T	Midterm 4	5.1-5.6
	11/20	W	Integrals Resulting in Inverse Trigonometric Functions	5.7
	11/22	F	Areas Between Curves	6.1
16	11/25	M	Areas Between Curves	6.1
	11/26	T	Review-How to study for the Final Exams	Review
	11/27	W	Thanksgiving Break (Wed-Fri)	
	11/29	F	Thanksgiving Break (Wed-Fri)	
17	12/02	M	Review-Recap on integration	Review
	12/03	T	Review	Review
	12/04	W	Review; Friday classes meet; last day of class	Review
	12/10	T	Mass Final 7pm-10pm	

Course Policy

- **Calculator Policy:** You may use a TI-30XS Multiview in class or during exams. No other calculators will be allowed, and sharing of calculators is not permitted.
- **Deadline Policy:** Any work that is not submitted on time will receive a grade of zero. You are responsible for submitting assignments on time, even following an absence (excused or unexcused).

- **Academic Honesty Policy:** As a University of Georgia student, you have agreed to abide by the University's academic honesty policy, "A Culture of Honesty," and the Student Honor Code. All academic work must meet the standards described in "A Culture of Honesty" found at: <https://honesty.uga.edu/Academic-Honesty-Policy/>. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to me.
- **Specific Academic Honesty Guidelines for This Course:** You may not discuss a graded assignment with other students until that assignment has been graded and returned to you, unless you have been given explicit permission to do so. You are encouraged to discuss homework with others. The following are examples of academic dishonesty and are prohibited in this course:
 - getting an answer by finding a solution to a similar problem and changing the numbers to your own numbers without thinking through (and working through) the steps on your own
 - getting someone (or an app) to work a problem for you and submitting the work as your own
 - using unauthorized materials during a testing situation (e.g. midterms) including cheat sheets, the internet, another person's test paper, an unauthorized calculator, etc.
 - having a cell phone or smart watch accessible during a testing situation, even if you are not using it to find problem solutions This is not an exhaustive list; it is meant to give you an idea of prohibited activities.
- **Departmental Attendance Policy:** "Students are allowed no more than 3 unexcused absences. On the fourth unexcused absence, a student may be withdrawn from the course with a grade of W before midpoint, F after midpoint. Do not regard these 3 allowed absences as "personal free days". These are only to be used in cases of personal or family emergencies. In some cases, verification may be required."
- **Accessibility Statement** If you anticipate issues related to the format or requirements of this course, please meet with me. I would like us to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with the Disability Resource Center located in Clark Howell Hall (Voice: 706-542-8719 or TTY: 706-542-8778 or Web: <https://drc.uga.edu>) and notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations.
- **FERPA Notice** The Federal Family Educational Rights and Privacy Act (FERPA) grants students certain information privacy rights. See the registrar's explanation at <https://apps.reg.uga.edu/FERPA/>
- **Disclaimer:** The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary. It is the responsibility of the student to seek clarification of the grading policy and/or course requirements and procedures from the instructor.