University of Virginia
Course Syllabus: MATH 1210–016
A Survey of Calculus I
Fall 2017

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Class location: New Cabell Hall 332
Class meeting time: MoWeFr 11:00 - 11:50 am

Office Hours: Monday 1:00 - 2:30 pm, Thursday 11:00 am - 12:30 pm, and by appointment (email me!)

Course Description: Math 1210 is an introductory calculus course intended for students interested primarily in the life, managerial, and social sciences. Math 1210 is a coordinated course. This means that all sections cover the same material and take the same tests.

Calculus might be defined as a mathematical toolkit for analyzing functions. In virtually every area of human endeavor, functions are or can be used to further understanding and to assist in making predictions. For instance, a medical researcher might be interested in modeling blood pressure as a function of body weight, or concentration of a drug in the bloodstream as a function of time since ingestion.

Calculus provides two fundamental tools for analyzing functions: the derivative, which represents the rate of change of a function, and the definite integral, which can be used to compute the net change of a function over an interval. Derivatives and definite integrals are defined using the notion of "limit," which is another tool of calculus. This course introduces you to the tools of calculus and their applications.

Course Objectives: Upon successful completion of this course, students will be able to

- work confidently with functions represented verbally, numerically (by a table of values), graphically, or algebraically (by a formula) and be able to relate and create, such representations;
- understand, describe, and apply the fundamental tools that calculus provides for analyzing functions: derivatives, which represent rates of change, and definite integrals, which can be used to compute net change;
- recognize when the tools of calculus can be applied to analyze a function and be able to communicate—with clarity and precision—the results of their analysis;
- assess the quality of competing solutions to problems based on their clarity, efficiency, and elegance;
- model and solve a wide variety of problems, including some with real-world applications, thus having further developed their problem-solving skills and strategies.

Am I in the right calculus class? Read the Mathematics Departments Placement Information.

Textbook: This course will cover chapters 1-6 (omitting some sections) of the course text *Applied Calculus for the Managerial, Life, and Social Sciences* by Soo T. Tan, 9th edition (Publisher: Brooks/Cole Cengage Learning). An electronic edition of the text is provided through the on-line homework system WebAssign, to which you must purchase access. Acquisition of a physical copy of the text is optional. You have a number of different purchase options:

(1) purchase WebAssign single-term access on-line through the WebAssign Website,

(2) purchase a single-term WebAssign-access card at the UVA Bookstore,

(3) purchase a physical copy of the text, bundled with a multi-term WebAssign-access card, at the UVA Bookstore, or

(4) purchase WebAssign via (1) or (2) and, if you want a hard-copy of the text, buy a used copy from the Bookstore.

There is a two-week grace period at the beginning of the term during which you have free WebAssign access to the text and course homework sets—go to http://www.webassign.net/uva/login.html, and via the gray button on the upper right, enter our class key: virginia 1083 7040.

Assessments

Diagnostic Quiz: During class on Friday September 1st, there will be a quiz (15–20 minutes) consisting of problems designed to test your "readiness for calculus" skills. Most of these problems will be similar to homework problems appearing on the first two or three WebAssign homework assignments.

Quizzes: We will have weekly quizzes (10–15 mins) every Friday, totaling 5% of your course grade. There will be opportunities to have a number of the lowest scored quizzes dropped throughout the semester.

Homework/Classwork: Most homework for this course will be delivered through the WebAssign system: go to http://www.webassign.net/uva/login.html and enter our class key "virginia 1083 7040".The system will give you immediate feedback and you will be allowed to attempt problems multiple times. You should record your work on a given problem by hand (just as if you were working through a test problem) and then enter your response into WebAssign. Keep in mind that when you respond to problems on exams and quizzes your work, as well as your answers, will be evaluated, so in addition to WebAssign I will collect written homework and classwork regularly.

Exams: There will be two evening midterm exams given during the semester. The exams are common to all sections of MATH 1210. The dates of these exams are as follows:

Midterms Exam 1: Thursday, September 28th, 7-8:30 p.m.[1]
Midterms Exam 2: Thursday, November 9th, 7-8:30 p.m.

For those students who have a time conflict with another course, a make-up exam will be given the following morning beginning at 7:20 a.m. If you have a direct conflict with either of the above listed exam times, please notify me as soon as possible and at least one week before the exam date. If proper notice cannot be given, then a request for the make-up exam will be honored only in cases of extreme emergencies and at my discretion. Midterm and final exams will be graded in common, involving all Math 1210 instructors.

The **final exam** will be given Tuesday, Dec. 12th from 7:00 to 10:00 pm. This is the time reserved for the MATH 1210 final exam by the University and all sections of MATH 1210 take the common final examination at the same time. It is University policy that final exams may not be taken early. The final exam is comprehensive.

Course Grade: The course grade will be determined as follows:

WebAssign homework	10 points
Classwork/Written homework:	8 points
Diagnostic Quiz:	2 points
Quizzes:	5 points
Midterm Exam 1:	20 points
Midterm Exam 2:	25 points
Final Examination:	30 points
	100 points possible

[1] *Fall reading days begin two days later (Saturday the 30th)* : **No student may take any exam early and no student will be allowed to postpone Exam 1 until after reading days because they've already made travel arrangements.**

The number of points you earn will be mapped to a letter grade as follows:

A+: [98, 100]	A: [93, 98)	A-: [90, 93)	B+: [87, 90)	B: [83, 87)	B-: [80. 83)
C+: [77, 80)	C: [73, 77)	C-: [70, 73)	D+: [67, 70)	D: [63, 67)	D-: [60, 63)

In borderline cases, your letter grade may be higher—the one assigned to the interval immediately above the one your point total lies in.

Policies

Attendance and Classroom Etiquette: Regular attendance is expected, as is class participation. Please arrive on time, turn off your cell phone, and stay for the entire class period. Unless otherwise instructed, you may not use any electronic devices during class. Studies suggest that student multi-tasking during class through use of smart phones and laptops hinders classroom learning for both users and *nearby peers*.

Calculators: Calculators will not be allowed for any quizzes or exams. Thus, as much as possible, try to complete homework problems without using a calculator. (For some homework problems, you will find a calculator or Wolfram Alpha to be helpful.)

Learning Needs: All students with special needs requiring accommodations should present the appropriate paperwork from the Student Disability Access Center (SDAC). It is the student's responsibility to present this paperwork in a timely fashion and follow up with the instructor about the accommodations being offered. Accommodations for test-taking (e.g., extended time) should be arranged at least 5 business days before an exam.

Honor Code: The Honor Code will be strictly observed in this class.[2] Please remember to sign the pledge each quiz and exam.

Tips for success

- Use class time wisely: fully engage yourself in classroom discussions, ask and answer questions often!
- Seek understanding rather than trying to rely on memorized formulas.
- Take advantage of your instructors office hours as well as the Mathematics Tutoring Center.
- It is nearly impossible to understand mathematics without working problems yourself; thus, devoting sufficient time and attention to homework assignments is crucial to success in this course.
- Before beginning work on a homework-problem set, think about material discussed in class pertaining to the set. Try to work problems without looking at your notes or the text.

Course Content

We will cover the following chapters of the course text:
Chapter 1: Preliminaries; Chapter 2: Functions, Limits, and the Derivative; Chapter 3: Differentiation, skipping 3.4 and 3.7; Chapter 4: Applications of the Derivative; Chapter 5: Exponential and Logarithm Functions (skipping 5.3); Chapter 6: Integration, up through 6.5.

Important Dates:

Classes Start ..... Tuesday, August 22rd
Last day to add a course ..... Tuesday, September 5th
Last day to drop a course ..... Wednesday, September 6th
Midterm Exam 1 ..... Thursday, September 28th, 7–8:30 p.m.
Last day to withdraw from a course: ..... Tuesday, October 17th
Midterm Exam 2 ..... Thursday, November 9th, 7–8:30 p.m.
Last day of classes ..... Tuesday, December 5th
Final ..... Tuesday, December 12th from 7:00–10:00 p.m.

[2] Recent honor violations committed by calculus students include: falsifying a doctor's note in order to postpone a scheduled exam; presenting a false excuse for postponing an exam; and, seeking to boost an exam score by correcting mistakes on a graded, returned exam and then reporting "grading errors" on the exam. Note that calculus instructors scan graded exams.