

MATH 1210-010: Applied Calculus I

CRN: 16397 Credits: 3

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Office hours: M 1-1:50 PM, Tu 1:30-3:20 PM, and by appointment

Spring 2016
University of Virginia

Course Basics

Classroom Clark Hall 102

Meeting Time MW 3:30 - 4:45 PM

Textbook Soo T. Tan: *Applied Calculus for the Managerial, Life, and Social Sciences, 9th ed.*

Course Website Available on UVaCollab

WebAssign Key virginia 9213 4800

Exam Dates Midterm 1: February 24th, Midterm 2: April 13th, Final Exam: May 7th

Course Description

Topics include limits and continuity; differentiation and integration of algebraic and elementary transcendental functions; and applications to maximum-minimum problems, curve sketching and exponential growth.

Class Meetings and Quizzes

Aside from the daily lectures, there will be weekly 15-20 minute quizzes (typically on Mondays), starting with a diagnostic quiz on Monday, February 1st. There will be a total of twelve quizzes, including the diagnostic quiz (Quiz 1). The two lowest quiz scores from Quizzes 2-12 will be dropped. It is possible that scheduling means there will be only eleven quizzes, in which case the quiz grade will consist of the diagnostic quiz (still Quiz 1), and the two lowest scores from Quizzes 1-11 will be dropped (so the diagnostic quiz may be counted twice). Calculators may not be used on the quizzes.

Course Content:

We will cover the following topics from 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
- Chapter 6: Integration, up through 6.5

Course Text

This course will cover chapters 1-6 (omitting some sections) of the course text *Applied Calculus for the Managerial, Life, and Social Sciences, 9th ed.* by Soo T. Tan. An electronic edition of the text is provided through the online 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 (loose-leaf) 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 9213 4800**.*

Homework

Homework will be assigned in two forms: there will be regular problem sets posted on WebAssign, to be completed electronically, and there will also be written homework emphasizing techniques for solving calculus problems which are not addressed in the WebAssign homework. Completing a WebAssign assignment at least 24 hours before the due date is worth 10% extra credit on the assignment.

*To receive credit for your written homework you must write legibly, staple all your papers together, show all work necessary to solve each problem, and indicate your answers. Answers with no work shown will earn no credit. Written homework will be graded on completeness (making a genuine attempt to solve each problem and showing all work) and correctness (randomly selected problems will be graded in depth). Prior arrangements aside, late homework will not be accepted. *There is a seven day deadline (after the written homework is returned) to contest the grading of any questions on the assignment.**

As calculators will not be allowed on the quizzes and exams, it is highly suggested that you attempt to do all the homework problems with minimal aid from your calculator.

Exams

All exams will be calculator-free.

Midterm Exams

The two midterm exams dates and times are Wednesday, February 24th, 7:00 - 8:30 PM, and Wednesday, April 13th, 7:00 - 8:30 PM. 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 AM. 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, with all Math 1210 instructors participating. *Note that there is a seven day deadline (after the midterms are returned) to contest the grading of problems on the midterm. Please contact me if you have any issues.*

Final Exam

The final exam date and time is Saturday, May 7th, 7:00 - 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. Note that per University policy, the date and time of the final exam may not be changed without the proper paperwork from the Dean's Office. It is University policy that final exams may not be taken early. The final exam is comprehensive.

Attendance Policy and Classroom Etiquette

Regular attendance is expected, as is class participation. Please arrive on time, and silence your mobile phone. *Unless otherwise instructed, you may not use any electronic devices during class.*

Course Grade

The course grade will be determined as follows:

WebAssign homework	10%
Written homework	5%
Quizzes	10%
Midterm 1	20%
Midterm 2	25%
Final Exam	30%

The grading scale for the course is:

Grade	Percentage
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	[60, 70)
F	[0, 60)

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.

Learning Outcomes

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, as well as create, such representations;

- understand, be able to describe, and be able to 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;
- be able to assess the quality of competing solutions to problems based on criteria such as clarity, efficiency, and elegance;
- have further developed their problem-solving skills and strategies through modeling and solving a wide variety of problems, including some with real-world applications.

Important Dates

- Add deadline: Wednesday, February 3rd
- Drop deadline: Thursday, February 4th
- Midterm 1: Wednesday, February 24th
- Withdrawal deadline: Wednesday, March 16th
- Midterm 2: Wednesday, April 13th
- Last day of classes: Tuesday, May 3rd
- Final Exam: Saturday, May 7th

Some Tips

- Use class time wisely: fully engage yourself in classroom discussions, asking and answering questions when appropriate.
- Seek understanding rather than trying to rely on memorized formulas.
- Take advantage of my office hours as well as help available in the Mathematics Tutoring Center (<http://people.virginia.edu/~psb7p/MTCsch.html>).
- 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 assigned for a given section of the text, think about material discussed in class pertaining to the section — make sure you know and understand the definitions, theorems, concepts, and problem-solving principles emphasized in class. Try to work problems without looking at your notes or the exposition in the text. When you work homework problems without relying on notes, you are reinforcing your understanding of the principles you reviewed just before beginning work on the problem set. Also, when you take this approach each homework assignment becomes a practice test.

Academic Integrity

Students are expected to abide by the University Honor Code on all assignments and exams completed in the course.