MATH 1210-004 Fall 2017
Survey of Calculus I

Instructor: James Phillips
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Office: Kerchof 401
Office Hours: Wednesday 1:30 - 3:30; Thursday 3:30 - 4:30
Class Meetings: TTh 2:00 - 3:15 PM; New Cabell 323

Textbook: Tan, *Applied Calculus for the Managerial, Life, and Social Sciences*, 9^{th} ed. (Every student must purchase a webassign access code for the class, which comes with a digital version of the text. It is each student's choice whether or not to purchase a physical copy, which may be bundled with a code.)

General Policy: Students are expected to attend class and, in the event of an absence, are responsible for making up any missed material or work. Students are also encouraged to participate and to ask questions during class. Calculus can be difficult, but it is learned best through practice; I will be happy to work with students in class and in office hours to ensure the best understanding of the subject. In the end, the skills we will stress are *critical thinking* and *problem-solving*. Calculators are permitted on neither quizzes nor tests.

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, 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.

Topics: We will cover a variety of topics in this class, including the language of functions; the properties of limits and continuity; differentiation and techniques; applications of differentiation, including optimization; calculus of exponential and logarithmic functions; antiderivatives and integration; the fundamental theorem of calculus. This list is by no means exhaustive, but does accurately describe the majority of the semester, and corresponds roughly to chapters 1 through 6 of the text.

Homework: Homework will be assigned weekly on Webassign. It will be assigned on Friday and due the following Thursday. Since calculators are not permitted on quizzes and tests, I encourage you to use them sparingly on the homework, but computations will sometimes require them. As for late homework, Webassign has been programmed to allow you to extend each deadline for 24 hours in exchange for a slight penalty on work not completed by the original deadline. We will also have various written homework assignments throughout the semester, due approximately every two weeks; these allow students to practice communicating mathematics and to encounter problems which Webassign is ill-suited to pose.

Quizzes: Following the completion of each chapter, we will have a quiz covering the material contained in that chapter. These serve the dual purpose of both preparation for working in a test environment and practice in effecitively writing and communicating your ideas in calculus. Of particular note is the diagnostic quiz, which will serve as the chapter 1 quiz and will be administered during the second week of class. The purpose of this quiz is to indicate to each student his or her preparedness for the subsequent material in the class: the quiz will cover precalculus-level topics, so a student may reconsider his or her enrollment in the class based on the performance on this quiz. Quizzes may not be made up, but rather, I will drop your lowest grade. The diagnostic quiz score, however, may not be dropped.

Exams: There will be two midterms and a final. As Math 1210 is a coordinated course, all tests are jointly written and all students take a common exam. The midterms will be held on Thursday, September 28, and Thursday, November 9; they will begin at 7:00 PM and will last 90 minutes. For students with midterm time conflicts, there will be a make-up exam given on the following morning at 7:20 AM, for which requests must be submitted at least a week before the test. Exams are closed-book, with no calculators permitted. In exceptional cases in which a student cannot sit either exam time, that student must notify me as soon as possible (and at least one week in advance of the test date), and we will find a more amenable time. The final will be held on Tuesday, December 12, at 7:00 PM; this exam is comprehensive (with a slight bias toward material that was not represented on either Midterm) and will last three hours.

Grading:

Homework (Webassign and written): 15%
Quizzes: 10%
Midterms: 20% (first); 25% (second)
Final: 30%

Attendance or participation do not go toward a specific grade, but can be an influence in cases of “borderline” grades. Grades will be assigned according to the following standard:

Numerical Range	Letter Grade
$98 \leqslant \text{grade} \leqslant 100$	A+
$93 \leqslant \text{grade} < 98$	A
$90 \leqslant \text{grade} < 93$	A-
$87 \leqslant \text{grade} < 90$	B+
$83 \leqslant \text{grade} < 87$	B
$80 \leqslant \text{grade} < 83$	B-
$77 \leqslant \text{grade} < 80$	C+
$73 \leqslant \text{grade} < 77$	C
$70 \leqslant \text{grade} < 73$	C-
$67 \leqslant \text{grade} < 70$	D+
$63 \leqslant \text{grade} < 67$	D
$60 \leqslant \text{grade} < 63$	D-
$\text{grade} < 60$	F

The above table should be viewed as a "floor" for grades; that is, if you receive a final score in a given range, you should expect a grade no less than the one specified above.

Honor Code: The Honor Code will be strictly observed in this class. Every assessment, unless otherwise noted, is consider pledged. You can relay any questions on honor-related matters in this class to me.

Special Accommodations: 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 me about the accommodations being offered. Accommodations for test-taking should be arranged at least 5 business days before an exam.

Resources: Requests for (paid) private tutors may be sent to math-help@virginia.edu. In addition to private tutors, the university provides free tutoring through the Math Tutoring Center at the Academic Commons in Gilmer Hall.

Miscellanea: In class, please be courteous: arrive on time and stay until in the end of class. Please keep cell phones and laptops off and stowed away during class; I'll let you know ahead of time if you'll be needing them. If a circumstance arises that affects your performance in the course, you should inform me *before* it influences your grade. Lectures are a good starting point, but the best understanding comes from getting your own hands dirty: give the material a look before lecture, and spend some time reviewing and practicing afterward.