

MATH 2250 Calculus I for Science and Engineering, Spring 2014, Section 96-708

Building: MWF Boyd 323 R PoultrySci 136
MWF 10:10-11:00a.m. R 12:30-1:45p.m.

Instructor: Harrison Chapman **Email:** hchapman@math.uga.edu **Office:** Boyd 427E
Course Webpage: <http://hchaps.appspot.com/courses/sp2014/2250>
HW Web: https://webwork2.math.uga.edu/webwork2/Math2250_Chapman_S14
Office Hours: T 12:30-2:00p.m. W 1:30-2:30p.m. R 2:00-3:00p.m.

COURSE DESCRIPTION & OBJECTIVES:

The student will understand the limit and the derivative both conceptually and operationally. The student will learn how to use calculus concepts to model and solve various typical problems in science and engineering, with particular emphasis on graphs, optimization problems, and basic integration problems. The student will learn to set up word problems clearly and concisely and to provide clear solutions. WeBWorK will be used as a homework server.

A primary goal is to develop understanding of the mathematical content described above, and how to use it to solve practical applications. Additional goals include the development of reasoning and problem solving skills. These goals may be achieved by preparing for and participating in daily lectures and discussion and working on assigned homework/quizzes/exams. Finally, you develop your ability to work together with colleagues and develop communication skills through in-class group quizzes and their writeup.

REQUIREMENTS AND ATTENDANCE POLICY:

There is a prerequisite of Math 1113 or placement. **Prompt, complete attendance** is expected at all classes. Please attend the **entire** class or do not attend at all; this is to preserve an effective learning environment for all students. Unexcused absences will cost you points on your grade; see the section on grading. Professional courtesy toward your instructor and your classmates is expected. Exams may be made up in the event of University of Georgia athletics (arrangements in advance only) or documented illness (not for HW or quizzes).

TEXT:

Hass, Weir, Thomas; *University Calculus, Early Transcendentals*, 2nd Ed, Addison/Wesley. You need to own/share a copy of this text.

TOPICAL OUTLINE: We will cover sections 2.1-2.6, 3.1-3.11, 4.1-4.8, and 5.1-5.6.

- (1) Functions, rates of change, limits.
- (2) Differentiation rules: polynomials and transcendental functions, sum, product, and quotient rules; the chain rule, implicit differentiation and differentiation of inverse functions.
- (3) Applications of differentiation: linear approximation, Newton's method, curve sketching and convexity, optimization problems, related rates problems, L'Hôpital's rule.
- (4) Anti-differentiation and ordinary initial value problems.
- (5) The definite integral and summation notation. Solution of ordinary differential equations by separation of variables.
- (6) The Fundamental Theorem of Calculus.
- (7) Areas between curves and some techniques of integration.

TESTS:

Four 75-minute exams will be given, each worth 100 points. The tentative schedule is 1/30, 2/20, 3/20, 4/17. There will be 10 quizzes announced in elc on your calendar. Some of these will be individual and others

will be group quizzes. Only your best 8 quiz scores will be counted in your grade. There may be additional (announced or pop) quizzes. The comprehensive COMMON final exam is Thursday May 1, 7-10pm.

GRADING:

A total of 750 points can be earned over the course of the semester. Ten of these points are for perfect attendance; each unexcused absence will cost you one of these points.

The following grading scale will be applied: 91-100 A, 89-90 A-, 87-88 B+, 81-86 B, 79-80 B-, 77-78 C+, 71-76 C, 69-70 C-, 60-68 D, below 60 is an F.

Grading break-down:

- *400 points:* Four exams, weighted equally at 100 points each
- *200 points:* *Cumulative* final exam
- *120 points:* In class quizzes: best 8 scores at 15 points each
- *20 points:* Online homework on WeBWorK (normalized to 20 points)
- *10 points:* Attendance (−1 for each unexcused absence; see above)

REQUIRED TECHNOLOGY:

The final exam will permit only a TI-30XS calculator (this is the same calculator required for chemistry classes). Some exams/quizzes will be calculator-free; others will permit at most a scientific calculator (the TI-30XS works). Graphing calculators such as the TI-83(+) and TI-84 are useful in visualizing the material but will not be required for homework and will not be permitted on in-class assignments.

Therefore: If you wish to make only one calculator purchase, make it a TI-30XS.

REMARKS AND ELECTRONICS POLICY:

Questions are encouraged at all times. Scheduling difficulties can be amicably settled by PRIOR discussion. One aspect of being a member of a community of scholars is to show respect for others by the way you behave. One way of showing respect for others in the educational community is to do your part to create or maintain an environment that is conducive to learning. That being said, allowing your cell phone (or any other device!) to ring in class is completely inappropriate because it distracts both yourself *and* your classmates and thus degrades their overall classroom experience. Answering your cell phone is doubly inappropriate! For the sake of your classmates, I expect you to turn off your cell phones or set them to silent BEFORE you enter class—every class. Similarly, using laptops or other mobile devices during class is not appropriate. Furthermore, if, in the instructor's opinion, device usage (or other behavior!) becomes a problem, the offending party will be expelled from class.

Notice that there is no class on the dates **1/20** (MLK Day), and **3/10-3/14** (Spring break). The last day to drop any course is **March 20**.

ACADEMIC HONESTY:

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: www.uga.edu/honesty. 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 the instructor. This policy defends the academic integrity of all student work, and will be uniformly applied to all students in the class.

ACADEMIC ACCOMMODATION:

Students with a disability or health-related issue who need a class accommodation should consult the following website: <http://drc.uga.edu/>

DISCLAIMER:

The course syllabus is a general plan for the course; deviations announced to the class may be necessary.