The University of Georgia

CALCULUS I for Science and Engineering, MATH 2250 Section 24975
SYLLABUS SPRING 2015
Luca Schaffler

LECTURE: MWF 1:25-2:15pm in Dawson Hall 206 (Lecture), and R 2:00-3:15pm in Hardman Hall 102 (Recitation)
OFFICE: Boyd, 434J **EMAIL:** luca@math.uga.edu

homework website: https://webwork.math.uga.edu/webwork2/Math2250_Schaffler_S15/ Then log in using your username (MyID) and password (810 or 811 number).

OFFICE HOURS: Monday, Thursday and Friday, 3:30-4:30pm
TEXT: Hass, Weir, Thomas; *University Calculus, Early Transcendentals*, 3rd Ed, Pearson. You need to own/share a copy of this text.

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.

COURSE GOALS: 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 communication skills through in-class quizzes and their writeup.

TOPICAL OUTLINE (Sections 2.1-2.6, 3.1-3.11, 4.1-4.8, 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.

REQUIREMENTS: 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 to preserve an effective learning environment for all students. Professional courtesy toward your instructor and your classmates is expected.

ATTENDANCE POLICY: Rolls will be taken each class (including recitations) starting from the second week. You will be responsible for all the materials delivered in class and your final letter grade can be affected by it. In addition, the department reserves the right to withdraw you from the course when initiated by the instructor if you collect more than 4 unexcused absences.

TEST DATES: Four exams will be given. The tentative schedule is 1/29, 2/26, 3/26, 4/16. There will be at least 8 quizzes. These will be mainly individual quizzes. There may be additional (announced or pop) quizzes. The comprehensive COMMON final exam is scheduled for Tuesday May 5, 7:00-10:00PM.

TECHNOLOGY: The final exam will allow a TI-30SX ONLY (NO TI-30 PRO!), and this suffices for **all** calculator requirements. At all quizzes and exams, the calculator memory must be free of additional mathematical material.

GRADING: A total of 800 points are possible. Each midterm exam is worth 100 points (there are four midterm exam). The final exam is worth 200 points. Quizzes are worth 15 points each: the best 8 scores count for a total possible 120 points. Homework is normalized to a percentage of all assigned problems, and contributes 80 points to your grade (% * 80 is how it is computed).

To calculate your grade, take your total earned points and divide by 8 to get a 100% value. The following grading scale will apply: 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, and below 60 is an F.

The "round up" (for instance, a grade of 90.5 will receive a grade of 91 A. A 90.4 will receive a grade of 90 A-) will be under my discretion and it will depend on the behavior of the student throughout the whole semester (completed homework, progress made, attendance and participation to class…).

MAKE UPS: Exams may be made up in the event of University of Georgia athletics (arrangements in advance only) or *documented* illness. There are NO make ups for Homework or quizzes.

ELECTRONIC DEVICES POLICY: *You are expected to turn off your cell phone or set it to mute/silence BEFORE you enter class—every class*. Furthermore, if you use your cell phone *in any manner* during class (e.g. text messaging, games, etc.), you will be dismissed from class and will forfeit any points you might have earned in that class period. If you use your cell phone *in any manner* during a test or quiz, you have violated the academic honesty policy. (This policy also applies to LAPTOPS, pagers, iPODs, iPADs, PDAs, Treos, MP3 players and all other electronic communication and/or data storage devices.)

REMARKS, NO CLASS MEETINGS AND OTHER DATES: Questions are encouraged at all times. Scheduling difficulties can be amicably settled by PRIOR discussion. Please contribute as a positive member of this learning community. There is no school on January 19 and March 9-13. The Add/Drop is January 5-9 and the withdrawal deadline is March 19.

ACADEMIC HONESTY POLICY: All academic work must meet the standards contained in *A Culture of Honesty.* (http://www.uga.edu/honesty/ and there is a link to read the document) Students are responsible for informing themselves about those standards before performing any academic work. This policy defends the academic integrity of all student work, and will be uniformly applied to all students in the class.

ACADEMIC ACCOMMODATION: If you have a documented (learning) disability, you should contact the Disability Resource Center (http://www.drc.uga.edu/about/welcomeletter.php)

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.