The University of Georgia

Syllabus for MATH 2250: Calculus I, Spring 2015 (Section 24958)

Administrative: This class meets on MWF 9:05-9:55am in Room 102 Hardman Hall and on Thursdays 9:30-10:45am in Room 238 R.C. Wilson. Your instructor is Daniel Mckenzie and he can be reached via email at mckenzie@math.uga.edu. Office hours are to be determined, but will be held in Boyd 643.

Textbook: Hass, Weir, Thomas; *University Calculus, Early Transcendentals*, 3rd Ed, Addison/Wesley. You need to own or share a copy of this book.

Course Description: 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 (see "Online Resources below").

Course Goals: A primary goal is to develop understanding of the mathematical content described above, and of its practical applications. Additional goals include the development of reasoning and problem solving skills. Preparing for and participating in daily lectures and discussion and working on assigned homework/quizzes/exams may achieve these goals. The ability to work together with colleagues and communicate technical concepts efficiently will be developed through in-class group quizzes.

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'Hospital'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. You are expected to attend the ENTIRE class; students who leave class early or arrive late may be counted as absent and may forfeit all points for the class period. Three or fewer unexcused absences will earn you rounding privileges (see "Grading"). Students will be expected to work in groups and contribute to group discussions.

Tests and Quizzes: There will be four tests, tentatively scheduled for 1/29, 2/26, 3/26 and 4/16. There will be approximately 10 quizzes given throughout the semester, both group and individual work, some of which may be unannounced. There is also a comprehensive common final during finals week (date TBA).

Makeups: 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). Otherwise, there are no makeups for tests and quizzes.

Online resources: This class will make extensive use of online resources. Homework will be done online using the WebWork platform (go to https://webwork2.math.uga.edu/webwork2/ and log in to our class homework). Questions about homework, content covered in class or administrative details such as dates of tests etc. are to be posted in Piazza (go to https://piazza.com/ create an account and select this course).

Technology in the classroom: Calculators may be used in class. The TI-30X is recommended, and it is the ONLY calculator allowed in the final exam. All other electronic devices (cell phones, tablets, MP3 players, laptops etc.) are to be put away and on silent for the entire duration of class, unless your instructor has granted you permission to use your

laptop for an in-class activity. Students seen or heard using an electronic device without permission may be dismissed from class, and forfeit any points they might have earned in that class.

Grading: A total of 750 points are possible. Each test is worth 100 points. Your top eight quiz scores will count 15 points each, giving a total of 120 possible points. The final exam is worth 200 points. Homework will be normalized to contribute 20 points. For each contribution you make on Piazza you will earn a point, up to a maximum of 10 points, at most 5 of which can come from asking questions. To calculate your grade, take your total points and divide by 7.5. 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. Students with three or fewer unexcused absences will earn the privilege of having their percentage score rounded up (see "Requirements".)

Remarks: Questions are welcomed at all times and contributions to the class discussion are encouraged. It is in your interest to get to know your classmates and form study groups that meet outside of lecture hours.

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.