Math 110AX - Calculus I with PreCalculus
Oxford College of Emory University
Fall 2009

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Course Info:	MW 2:00 - 2:50	Seney Hall 209
	TTH 11:30 - 12:45	Pierce Hall 102
Office Hours:	MWF 11 - 12	
	TTH 10:20 - 11:20	
	or by appointment.	

Course Description: Math 110AX is the first part of a two-semester sequence that integrates precalculus into Calculus I with early transcendental functions. Either Math 110AX or its companion course Math 110A can be taken as a prerequisite to Math 110B, the terminal course in this sequence. Math 110AX meets more frequently than Math 110A, spending the extra time to strengthen students' mathematical backgrounds.

- **Content for Math 110AX (and Math 110A):** Review of algebra; functions; trigonometric, logarithmic, and exponential functions. Calculus topics include limits, continuity, the definition of the derivative, differentiation, extrema, the Intermediate Value Theorem, the Mean Value Theorem, graphing polynomial and rational functions, optimization problems.
- **Content for Math 110B:** Review of inverse trigonometric functions and differentiation, and graphing. New topics include implicit differentiation, logarithmic differentiation, related rates, graphing vertical tangents, logarithmic and exponential graphs, sums and sigma notation, induction, antiderivatives, the Fundamental Theorem of Calculus, definite integral, area, volume, separable differentiable equations, substitution.

Text: James Stewart, *Essential Calculus: Early Transcendentals*. Try to read the book before coming to class: believe me, this is a very useful habit.

Course Goals: Upon successful completion of Math 110AX and Math 110B, students will:

1. Understand conceptually limits and their relationship to the graph of a function.
2. Understand conceptually the derivative and its relationship to the graph of a function and to the concept of "rate of change".
3. Understand conceptually the definite integral and its relationship to area and volume.
4. Be able to calculate derivatives, evaluate limits, and compute integrals (both definite and indefinite).
5. Be well-prepared for Math 112.

Grading Policy: Students' grades are determined by performance on homework, quizzes/projects, tests, and a comprehensive final exam. All tests will be administered during class time, unless special circumstances require otherwise.

Homework	100 points
Quizzes/Projects	200 points
5 Tests	500 points
Final	200 points
Total	1000 points

Maximum grade cuts are as follows:

A	B	C	D	F
90-100%	80-89.99%	70-79.99%	60-69.99%	0-59%

Plus/minus grades may be assigned for percentages near the maximum grade cuts. **Students must pass the final in order to pass the course.** Also, I reserve the right to amend, append, or otherwise make changes to the plan for the course.

Homework: Timely completion of the daily homework assignments is crucial to success in this course in addition to serving as an excellent preparation for the quizzes. Some homework may be assigned and collected for a grade during the semester.

Quizzes/Projects: An undetermined number of quizzes will be given throughout the semester. Quizzes need not be announced ahead of time. The bottom 10% of your quiz grades will be dropped. The average of all of the remaining quizzes (and any projects assigned) will be used to determine how many of the 200 points for quizzes/projects are earned towards the overall grade. For example, if one had an average of 90% on your quizzes and projects, then one would receive 180 points toward one's final grade. *There is no provision for making up a quiz. You will receive a zero on any missed quiz.* Grades on projects are treated identically to those on quizzes, except that project grades may not be dropped.

Tests: Five tests will be given in class and the tentative dates for the exams are listed in the course calendar, although these times and dates are subject to change. Students are expected to be present for all scheduled tests. Any conflicts should be brought to the instructor's attention as soon as possible. If a legitimate reason exists for missing a test - as determined by the instructor - then the test must be taken prior to the regularly scheduled date. In the *unusual* circumstance where taking the test early is not possible, students should be aware that any *make-up tests given will likely be designed to be more difficult to offset the additional time given for study.* Students must provide written documentation in advance of any special accommodations required for testing. This includes additional time or other needs.

Class Attendance: Students are responsible for all material covered in class and any changes to the syllabus that may be announced. Any conflicts between the course schedule and religious holy days are to be negotiated in advance with one's instructor.

Calculators: Students will not be allowed to use calculators on any quizzes or exams.

"Good Style": All necessary work must be correctly shown in a clear and organized fashion for full credit. Organization and clarity of thought are essential to mathematical thinking. Therefore, points will be deducted for a lack of organization, illegible or sloppy work, and the inappropriate use of mathematical symbols, even if answers found are correct. Students will be provided examples of what is considered "acceptably clear and organized work". The goal is for students to be able to solve problems in "good style", unaided by books, notes, tutors, or calculators - and to understand the reasoning behind the solution method.

Resources:

- **Tutoring and Review Sessions:** Paul Oser, the Math Center Director, is available for free, individual tutoring in the Math Center in Pierce Hall from 3-6 PM Mondays through Thursdays. Student tutors will also be available in the evenings and on Sundays. The complete schedule will be forthcoming. Students are encouraged to do your homework in this area, where help is available as needed.
- **The Math Center Online:** One can find class announcements, tutorial videos, notes, homework and additional practice exercises for this course at `http://mathcenter.oxford.emory.edu`. This website will be an *essential* resource for students in this class.

Honor Code: The Honor Code of Oxford College applies to all work submitted for credit in

this course. To receive credit for work submitted you must place your name on it. By placing your name on such work, you pledge that the work has been done in accordance with the given instructions and that you have witnessed no Honor Code violations in the conduct of the assignment.

Other Thoughts: It is said that math is not a spectator sport, so please interact with me, do your homework and read the textbook as much as you can. Questions are always welcome and I'll be more than pleased to answer them.

The topics we will cover are very useful and fundamental in the sciences, business and engineering, among other fields, and I want you all to succeed. However, success in the course will require your diligence and hard work. Be sure to keep up with the assignments and to attend class. Talk to me as soon as you are having problems - don't wait until the week of a test. In addition to learning quantitative skills, it is important that you develop learning skills and study habits that will help you in calculus, in other courses, and in life beyond Oxford College.

Good luck and I hope this will be an enjoyable experience for all of you!