Math 1290 Calculus for the Natural Sciences
Syllabus
Fall 2012

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Office hours: M 3-4, TuF 12-1

Meeting times: (class) M W Th F 10-10:50 in EduE 32
(lab) T 10-10:50 in Engr 204
Text: Modeling the Dynamics of Life by Fredrick R. Adler ISBN:0-534-40486-3

Syllabus

The course will cover standard topics in differential calculus, integral calculus and introductory differential equations. Topics include limits, continuity, derivatives and applications of derivatives, integration, the fundamental theorem of calculus, integration techniques, and differential equations. The material is mostly covered in Chapters 1-5 of the Alder text. Some supplemental material, not included in the text, may occasionally be presented in lecture.

Course Prerequisites

Precalculus (Math 1250) or advising placement via the Math Placement exam.

Comparison to Calculus I (Math 1296)

Roughly 80% of the material in the two courses is the same. Math 1290 will skip a few topics covered in Math 1296 and cover others less in depth. Math 1290 will add an introduction to differential equations. In addition, the applications in Math 1290 will focus on biology and ecology, while in Math 1296 applications are chosen from a variety of areas of science and engineering. Students who take Math 1290 will be able to register for Calculus II (Math 1297), if they wish to continue on in Mathematics. In summary: Math 1290 covers the parts of Calculus most necessary to allow the inclusion of an introduction to differential equations. Additionally, there will be a half-day class field trip on Thursday, September 20th (more information to be provided in class).

Grading (Dates are tentative)

Exam 1:	Friday, October 5th	Chap 1-2.3	100pts
Exam 2:	Monday, November 5th	Chap 2.4-3	100pts
Exam 3:	Wednesday, December 5th	Chap 4-5.2	100pts
Final Exam:	TBD	Cumulative	200pts
Homework(~40 @ 5pts each)	Monday and Thursday		200pts
Quizzes(5 @ 10pts each)			50 pts
Labs (7 @ 15 points each)	Tuesdays		105pts
		Total:	855pts

Grade Scale:
A = 94-100% A- = 90-93%
B- = 80- 83% B = 84-86% B+ 87-89%
C- = 70-73% C = 74-76% C+ 77-79%
D = 60-66% D+ = 67-69%
F = 59 or below

Class Policy

Lectures, labs, material in the text and homework are all intended to compliment each other. No one is a replacement for any of the others. You are responsible for all material covered via any of these sources. A tentative class schedule has been posted online. You are expected to check the schedule and prepare yourself **before** each lecture by reading the sections ahead of time. Homework will be assigned daily in class and will be due on Mondays and Thursdays. **Late work will not be accepted.** All work should be shown for homework. Adhere to the "Homework Guidelines" for the completion of homework.

You are encouraged to form study groups and collaboration is acceptable on homework assignments, but not exams or quizzes. Any cases of cheating will be dealt with severely. To view the UMD statement on Student Academic Integrity Policy, see: www.d.umn.edu/assl/conduct/integrity. If you feel that an error has been made in grading on your exam, please bring it to the attention of the instructor. You will have one week following the return of each exam in which to contest such errors. **Keep all homework, quizzes and exams in your records.**

Missed quizzes or exams will be assigned a zero score unless you provide a valid written, signed (by a doctor, for example) excuse for your absence; unless it is not possible to do so, you must provide verbal notice ahead of time to your instructor for the absence. Arrangements for a makeup should be made as soon as you know you will miss. Do not wait for the next class. You can leave the instructor a message 24 hours a day by phone or by email. Oversleeping, poor preparation, slight colds, and cold weather are not valid excuses.

Computer Labs

There will be computer labs as part of the course. We will use several software packages: Excel, Mathematica, and some software specifically for differential equations. This software is available from the Lab Server from and PC Lab on campus. No prior knowledge of PCs or the software used is required.

Calculators

Use of graphing calculators is encouraged but not required. They will be allowed on exams and quizzes, but exams and quizzes will be written to minimize the benefit of having a calculator.

Liberal Education Statement

This course satisfies the UMD Liberal Education requirement for Category Two: Math, Logic, and Critical Thinking. The Calculus is a universal mathematical tool that is used in many diverse areas including business, economics, biology, chemistry, physics, and engineering. Whenever measured quantities change with respect to time, or other variables, calculus is probably involved. This course develops the fundamentals of calculus suitable for applications in the life and earth of sciences. By the end of the term, the successful student should understand the importance that calculus plays in modeling real-world phenomena by constructing and analyzing numerous models selected from ecology, wildlife/fisheries management, epidemiology, physiology, groundwater diffusion, and seismic phenomena.

Disabilities

Please inform me of any disabilities of which I should be aware in order to provide for equitable participation.

Tutoring

In addition to the office hours of the instructor and the teaching assistant, help is usually available M-F at the Tutoring Center in SCC 40. Schedules are posted there.