Syllabus for Math 110
Introduction to PDE
Fall 2007

Course:

Lecture:	MWF 12:00-12:50p, SOLIS 110
Recitation:	Th 8:00-8:50a, YORK 4080A

Recitation Leader: Michael Kinnally

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Office Hours:	W 4:00-5:50p, or by appointment (email me).

Brief Description: This is a first course in partial differential equations (PDE). The motivation for the subject comes primarily from physics, although for the most part we will focus on the purely mathematical aspects of the theory. However, it will help to have something of a background in either physics or engineering. We will spend most of our time studying the "big three" PDEs which are the heat, wave, and Laplace equation. We'll try to emphasize both the computational and qualitative aspects of these equations. The former includes concrete applications of Fourier series to boundary value problems, while the latter includes things such as maximum principles and the difference between diffusion and dispersion.

Prerequisites: Math 20D (or 21D) and 20F, or consent of instructor.

Text: *Partial Differential Equations: An Introduction*, by Walter Strauss.

Grading:

Total Points:	100
Homework:	40 pts.
Two One-Hour Exams:	15 pts. each
Final Exam:	30 pts.

Notes on the grading: The grading system for this class puts a lot of weight on HW assignments. There will be roughly seven (7) of these. Thus, one or two homework assignments could easily mean the difference between a letter grade. The overall course grade will be subject to a curve, but this cannot be determined until all the points are added. I will also supply an "approximate" curve after each exam so students can get a sense of where they stand at different points during the semester. Note that the first exam is scheduled before the "W" drop date, and will be graded before then (Oct. 26th).

Lateness and Makeup Policy: Homework must be turned in no later than the due date, *to the TA's APM 6th floor drop-box*. All homeworks are due by Friday's lecture. Early homeworks are, of course, not a problem (e.g. if you will not make a lecture). You may also turn them in to me during class. Makeup tests must be scheduled beforehand, except in extreme circumstances.

Homeworks: Each weeks homework assignment will be posted on the course website. Students are encouraged to work together on homeworks and discuss problems. However, each student must turn in their own individual assignment. All homeworks are due by Wednesday's lecture. There will be assigned homework each week, but those due on exam days are not graded. Answers to all homeworks will be posted on the course website.

One-Hour Exams: Two one hour exams will be held on Wednesday, October 24th, and on Wednesday, November 21st.

Final Exam: Thursday, December 13th, 11:30a - 2:29p. Room to be announced.

Tentative Outline of the Course: The following is an *approximate* outline of the material that will be covered in the course and the dates for exams.

September		
24th	26th	28th
		Ch. 1.1-1.2

October		
1st	3d	5th
Ch 1.2-1.3	Ch 1.3-1.4	Ch 1.4-1.5
8th	10th	12th
Ch 2.1	Ch 2.2	Ch 2.3
15th	17th	19th
Ch 2.4	Ch 2.5	Review
22d	24th	26th
Fire	**Fire**	**Fire**
29th	31st	
Review	**Test 1**	

November		
		2nd
		Ch 4.1 Last day to drop w/o "W"
5th	7th	9th
Ch 4.2	Ch 5.1	Ch 5.2
12th	14th	16th
Veteran's Day Holiday	Ch 5.3	Ch 5.3
19th	21st	23d
Ch 5.4	Ch 5.4	Thanksgiving Holiday
26th	28th	30th
Review	**Test 2**	Ch 6.1

December		
3d	5th	7st
Ch 6.3	Ch 6.3	Last Class Review
		13th (Thursday)
		Final Exam 11:30a-2:29p, room TBA