Math 317—Fall 2006 Syllabus

Instructor: Rob Manning, rmanning@haverford.edu

Office: Hilles 207C (down a half-floor from the main math dept space), 896-1210

Office Hours (tentative): MTW 1-3, or arrange another time with me (plus I expect to be on duty in the MQC some nights).

Text: "Real Analysis with Real Applications", Davidson and Donsig, (Prentice Hall, 2002)

Homework: Weekly problem sets due Wednesdays (give to me in class or leave in drop box opposite printer in Hilles 207 by 5 PM).

Homework Rewrites: For any HW problem on which you receive a grade of 8/10 or lower, you may submit a rewritten version of the problem, due one week after you get the HW back. If you do, your final grade for the problem will be the average of the original grade and the rewrite grade. Please submit the original problem along with the rewrite.

Late homework: If I receive your HW before I grade that assignment, I will not assign a grade penalty (but I can not predict how often I will be checking my drop box). Thereafter, there will be a 25% grade penalty, up until the exam that covers that material. If a solution set has been posted to Blackboard, you may not look at it until after you have submitted the late assignment.

Tests: Instead of HW on 10/4 and 11/15, there will be a test due. Each test will have two parts: Part I ($\approx$ 90 minutes, self-scheduled, closed-book) covers basic definitions, True/False with short explanation, etc.; Part II (take-home, open-book) typically consists of 4–6 examples and proofs. There will also be a third test during the final exam period of the same format.

Grades:

Homework : 40%
Tests (3): 20% each

Collaboration: For homework problems, discussion with other students in the class or with me is highly encouraged. The actual writing of the assignment should be done individually, without using notes from your collaborative discussions, so that you can be sure that it represents your personal understanding of the problems. To keep these guidelines clear, I would like you to use the following "reminder" system. When you are working with someone, work on paper that you explicitly mark as "Collaboration" (and, similarly, if you are working on the blackboard, write that title on the board). Study these collaboration materials before you write up your assignment, make sure that you understand the ideas, and then get rid of them (or erase the board). If you can not write up the solution without using the collaboration material, then you have not yet understood the problem in full, and you should start the process again: get rid of your final solution, go back to discussions with fellow students and/or me, and try again later to write up the final solution on your own.

For the tests, no collaboration is allowed.

Blackboard: All assignments and solution sets (and perhaps some other stuff) will be posted on Blackboard.

Anticipated Schedule:

9/4–9/8	Definition of the real numbers, completeness
9/11–9/15	Limit of a sequence, sup/inf
9/18–9/22	Subsequences, Cauchy sequences
9/25–9/29	Cardinality, infinite series
10/2–10/6	Infinite series (con't)
	10/4: Test # 1 due (on material 9/4–10/2)
10/9–10/13	n-dimensional space, open/closed sets
10/16–10/20	**Fall break**
10/23–10/27	Interior, boundary, closure, compactness
10/30–11/3	Continuous limits and continuity
11/6–11/10	Continuity (con't), uniform continuity
11/13–11/17	Differentiation
	11/15: Test # 2 due (on material 10/4–11/6)
11/20–11/22	Differentiation (con't)
	11/23–11/24: Thanksgiving Break
11/27–12/1	Differentiation (con't)
12/4–12/8	Integration (con't)
12/11–12/15	Integration (con't)
	Test # 3 during final exam period (on material 11/8–12/15)