Math 415/515, Introduction to Analysis III, Spring 2007

Class Time: MWF 11-11:50a.m. in 306 Deady Hall

Instructor: Dr. Marcin Bownik

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Textbooks: W. Rudin, *Principles of Mathematical Analysis*
M. Spivak, *Calculus on Manifolds*

1. **Background and Goals.** This course introduces students to the subject of mathematical analysis. Topics include: functions of several variables, the inverse and implicit function theorems, higher order derivatives, integration on R^n, Fubini's theorem, integration on manifolds, differential forms, and Stokes' theorem. The course, which is the last of three in the sequence, covers most of Spivak's textbook which corresponds to chapters 9 and 10 of Rudin.

2. **Exams.** There will be a take-home midterm on Wed. May 9 and a final exam on Wed. June 13, 10:15-12:15.

3. **Homework.** Homework problems will be assigned every week and be due in class on Wednesday on the material of the previous week. No late homework will be accepted. Group work on homework is allowed under the following conditions:
   - you must individually write your assignment,
   - you must acknowledge the cooperation by including the name of the person(s).
   Most homework problems consists of proofs. In particular, if a problem asks for an example or counterexample, you must prove that your example has the required properties. Likewise, if a problem asks if something is true, you must not only decide whether it is true, but also provide a proof or counterexample.

4. **Grading.** The grading distribution will be as follows:

Homework:	25%
Midterm Exam:	25%
Final Exam:	50%