MATH 4355
Functions of a Real Variable
Fall 2010

Class:	T&Th 2:30pm-4:00pm, PGH 350
Instructor:	Bernhard Bodmann, bgb@math.uh.edu
Office:	PGH 604; W 10-11:30am, Th 9:30-11am
Content:	This is the first semester of a 2 semester sequence. This semester focuses on the basic principles of measure and integration, which is essential in many areas of mathematics (in particular in analysis and probability). The syllabus for the first semester will cover most of the following topics: Measures. Measurable functions. Integration. Convergence of sequences of functions. Elementary Hilbert space theory. Banach spaces, e.g. the L^p spaces.
Prerequisites:	An undergraduate real analysis sequence (Math 4331, 4332) or equivalent. A little topology and metric spaces would be useful.
Text:	Walter Rudin, Real and Complex Analysis, 3rd edition, McGraw Hill, 1986. (Optional reading: Gerald Folland, Real Analysis, 2nd edition, Wiley-Interscience, 1999.)
Midterm Exam:	Tuesday, October 19, 2010, 5:30 - 7:30 pm. Room to be announced.
Assignments:	You will be asked to hand in approximately eight assignments, which will be due on Thursdays in the lecture.
Final Grade:	The midterm and the final exam will be based on the notes given in class, and on the homework. The final grade is based on a total score of 400 points consisting of homework (100 points), a midterm exam (100 points), and a final exam (200 points).