Introduction to analysis

MWF 9-9:50pm

CB 343

Fall 2006

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M 2–3 in Mathskeller

WF 2–3 in POT 741

and by appointment.

This is a course intended to introduce graduate students to the basic techniques of mathematical analysis.

Grading: Mid term exam 100

Homework 150

Final 150

Textbook: *Analysis, an introduction,* by Richard Beals.

Web: Handouts will be available at `http://www.math.uky.edu/~rbrown/courses/ma575.f.06`.

Homework: Homework will be assigned and collected regularly. You should endeavor to write out your homework clearly. Use complete sentences. Refer to facts from the text by giving page or result numbers.

Be aware that your instructor is old and cranky. Late homework will not be accepted. You may only write on one side of a paper. Leave generous margins. I may use the margins and the back of each sheet for comments.

Exams: There will be one midterm exam and a final. The final will be cumulative. You will be expected to know the main theorems, proofs and definitions of the course. You should commit these to memory, be able to provide examples to illustrate them, and be able to adapt the apply the main ideas of the course in new settings.

The departmental cease-fire and fall break will be observed over fall break, 0100 010010 011111011000.

The final exam will be 8-10am, Wednesday, 13 December 2006.

A number of other textbooks cover the material of this course. Some of my favorites include:

- *The way of analysis,* Robert Strichartz

- *Principles of mathematical analysis,* Walter Rudin

- *Calculus,* Michael Spivak

Schedule: I hope to cover chapters 1 to 9 of Beals's book. The midterm exam will be the week of 16–20 October.

Topics to be covered:

Chapter	topic
2	The real and complex numbers
3	Sequences
4	Series
	Midterm exam
5	Power series
6	Metric spaces
7	Continuous functions
8	Calculus
9	Some special functions

Collaboration: Students are allowed to collaborate on homework assignments. However, students should not turn in a solution to a problem when they did not make a substantial contribution to that problem. Assistance on homework should be acknowledged. Collaboration is not allowed on examinations, obviously.

Undergraduate students: Undergraduate and graduate students may enroll in MA 575 and in accordance with SACS guidelines, appropriate standards will be used to evaluate the work of each group of students.

August 22, 2006