MATH 4130 – Honors Introduction to Analysis I
Spring 2013

Instructor: Ana Rita Pires, Malott 581, `apires@math.cornell.edu`
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Office Hours: Ana Rita Pires, Mondays 4-6 in Malott 581
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Course Webpage: `https://piazza.com/cornell/spring2013/math4130/home` We will
be using Piazza for class discussion, posting homework and making class announcements.
The system is highly catered to getting you help fast and efficiently from classmates, the
TA and the instructor, so ask away, be it about a concept that was not clear from class, a
question you have about an assignment, or when the next homework is due. Other students
can answer your question or edit the existing answer, and the instructor and the TA will
chime in when needed. Do not, however, ruin someone else's learning experience (and fun!)
by writing up the solution of a homework problem on Piazza.

Textbook: The textbook we will be using is <u>Real Mathematical Analysis</u> by Charles Chapman Pugh. Reading and homework problems will be assigned from this book (it is on
reserve in the Math Library, in case you need it). There are several other books on real
analysis in the Math Library, which you can read and do problems from, if you want to
hear things explained in a different way and get more practice. Two examples of note
are <u>The Way of Analysis</u> by our very own <u>Robert Strichartz</u> and Walter Rudin's classic
<u>Principles of Mathematical Analysis</u>, a.k.a. baby Rudin.

Catalogue Description: High level of performance in MATH 2210-2220, 2230-2240, or
1920 and 2940 and familiarity with proofs. Students who do not intend to take MATH
4140 are encouraged to take MATH 4130 in the spring. Introduction to the rigorous theory
underlying calculus, covering the real number system and functions of one variable. Based
entirely on proofs. The student is expected to know how to read and, to some extent,
construct proofs before taking this course. Topics typically include construction of the real
number system, properties of the real number system, continuous functions, differential and
integral calculus of functions of one variable, sequences and series of functions.

Course Outline: We will cover Sections 1.1 through (at most) 4.4 of the textbook, roughly:

Reading and Homework: Reading will be assigned for each upcoming lecture, and homework will be assigned after each lecture, and handed in on Tuesdays at the beginning of lecture. It is in your best interest to work hard on both the reading and the homework, and even work on additional problems.

Final grades: 50% homework, 20% prelim, 30% final exam.

Academic Integrity: You are encouraged to discuss theory and problems from the course with your classmates. However, copying other peoples work is not allowed. You should be familiar with and must abide by the Code of Academic Integrity.

Extra Help: Come to office hours to discuss a homework problem or any aspect of the course. Ask and answer questions on Piazza. Go to the Mathematics Support Center for walk-in free tutoring.