

January 4, 2017

## **MATH 131AH - Winter 2017**

MWF 10:00 MS 6627, and

Tues 10:00 MS 6627

### **Office hours:**

J. Garnett MW 2:00 in MS 7941, and by appointment

Christopher Shriver TBA

### **Texts:**

W. Rudin, Principles of Mathematical Analysis, 3rd Edition (required).

T. Tao, Math 131AH notes, Week 1 (available as a handout the first day of class and posted on class the webpage).

**Material:** The object of the course is to get you to understand the logical foundations of analysis, including basic calculus. Proofs will be important, and the best attitude to bring to this class is to not believe any theorem that you don't know how to prove. First we will have a brief introduction to elementary logic. Next we will cover the construction of the rational numbers from the Peano axioms for the natural numbers, as in Tao's notes, Week 1. Then we will follow the first six chapters of Rudin.

**Grade:** Homework 40%, final 40%, midterm 20%. You must present at least one homework problem at the blackboard in quiz section.

The midterm will be scheduled later. The final exam is 11:30 - 2:30 March 20. No books, notes, computers or phones are allowed at exams, but you may bring a 4-6 file card with things written on both sides.

**Prerequisite:** 33B, 32B, 115 A recommended. You should already be able to write a proof correctly.

**Homework:** Assigned weekly, due at the beginning of quiz section the following week. The first assignment will be due January 17.

You may work on the homework problems together, but you must write up your solutions alone. You will be asked to present your homework solutions at the blackboard in class.

John Garnett