March 1, 2012

MATH 131C - SPRING 2012

MWF 11:00 MS 6221, and Tues 11:00 MS 6221

Office hours:

    J. Garnett MWF 2:30 in MS 7941, jbg@math.ucla.edu

    TA: Will Feldman, W 1-2 and M 4-5, MS 3931, wfeldman10@math.ucla.edu

Text: E. M. Stein and R. Shakarchi, Real Analysis, Princeton University Press, ISBN 0-691-11386-6

Material: We will review the Riemann integral in $\mathbb{R}^n$ and then discuss Lebesgue measure, the Lebesgue integral, several convergence theorems, compare Lebesgue integration to Riemann integration, and then discussion differentiation theory. We will cover most of the first three chapters of the Stein-Shakarji textbook. 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.

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

Exams: Midterm May 3, 2012. One hour final June 6, and take home final due June 15.

Homework: Assigned biweekly, due at the beginning of quiz section two weeks later.

    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.

Note: This course has the same instructor as Math 133, but 133 and 131C will have very different topics and well separated midterm, final exam and homework days. It is possible to take either course or both courses.

Homework 1: Due April 17. Page 37, Exercises 2, 4, 5, 6, 7, 8, 9, 11.

Homework 2: Due May 1. Page 37, Exercises 12, 13, 15, 16, 17, 19, 20, 22, 24.

Homework 3: Due May 15. Page 37, Exercises 29, 30, 37. Page 89, Exercises 6, 8, 10, 11, 12, 15.

Homework 4: Due May 29. Page 89, Exercises 23, 24. Page 144, Exercises 2, 3, 4, 5, 7, 9, 10, 11, 13.

John Garnett