

MAA 5229/4227 - MODERN ANALYSIS 1
SYLLABUS

INSTRUCTOR: Paul Robinson

CLASS TIME: MWF period 4 (10:40-11:30)

CLASSROOM: 221 Little Hall (and ONLINE)

OFFICE HOURS: Monday 14:00-14:45; Friday 11:30-12:30

TEXT: Walter Rudin, *Principles of Mathematical Analysis* (third edition)

This is the second half of our first-year graduate course in Analysis.

The topics to be covered in this course are taken from Chpters 6,7, 8 and 11 of 'Rudin'; they will be addressed in the same order as that in which Rudin presents them, but we shall often present further topics or different views of the same topics; in particular, our coverage of Chapter 6 will focus on the Riemann integral rather than the Riemann-Stieltjes integral. The material in the last of these chapters (on Lebesgue integration) is in some ways more delicate than the material of the other three chapters and will therefore demand more of our time.

The course will be conducted both in person and via Zoom simultaneously. For each class I prepare notes (handwritten) on which to base the lecture; after each lecture, these notes will be posted to the Canvas pages for the course. As we shall be working through 'Rudin' in 'Rudin' order (more-or-less: see above), it is advisable to read ahead in 'Rudin' as preparation for lectures. As in the first semester, reading calls for pencil and paper.

Grades will be assigned on the basis of performance in written homework assignments, of which there will be eight, at intervals of one or two weeks. In addition, there will be a midterm and a final, both of which will be ungraded but will be commented upon, as preparation for the first-year examination.