Math 832 **Probability Theory II**

Spring 2000

Jim Propp (813 Van Vleck, x3-5148, propp@math.wisc.edu)

Tuesdays and Thursdays, 11:00-12:15; B211 Van Vleck.

Textbook: Durrett, *Probability: Theory and Examples*

Course description

This course will be devoted to three main topics: Markov chains, ergodic theorems for stochastic processes, and Brownian motion. The line of development will more or less follow chapters 5–7 of Durrett's book. Chapter 5 will be supplemented by some discussion of continuous-time Markov processes, Markov chain sampling methods, and Markov random fields. The last few sections of chapter 7 will be omitted; if time permits, there will be a brief introduction to interacting particle systems. Prior familiarity with basic notions (e.g., measure spaces, conditional expectation) will be assumed.

Since is the first time I have taught such a course, I may not end up covering all of the preceding material, but I intend to try.

There will be a homework assignment roughly every two weeks. Students taking the course for credit will be expected to attend regularly and to hand in the homework.