

Math 180B

Introduction to Stochastic Processes, I

Winter 2010

This course is an introduction to some basic topics in the theory of stochastic processes. After finishing the discussion of multivariate distributions and conditional probabilities initiated in Math 180A, we will study **Markov chains** in discrete time. We then begin our investigation of **stochastic processes** in continuous time with a detailed discussion of the **Poisson process**. These two topics will be combined in Math 180C where you will study Markov chains in continuous time and **renewal processes**.

We shall be using the 180A text (*PROBABILITY* by Jim Pitman) at the beginning of the term, but the required text for Math 180B (and 180C) is *An Introduction to Stochastic Modeling* (Third Edition) by H. M. Taylor and S. Karlin. I plan to discuss most of the material contained in chapters III, IV, and V of the text; the first two chapters contain review material.

- Lectures will be on Monday, Wednesday, and Friday, from 2:00 to 2:50 PM, in Warren Lecture Hall 2111.
- The discussion sections with the TA (M. Jamall) meet on Wednesdays in Warren Lecture Hall:
 - Section A01 meets in WLH 2207, from 6:00 to 6:50 PM
 - Section A02 meets in WLH 2209, from 7:00 to 7:50 PM
- Your course grade will be based on your performance on the two midterm exams and the final exam. These exams will be weighted as follows:
 - Midterm 1: 20%
 - Midterm 2: 25%
 - Final: 40%
- In addition there will be weekly homework assignments which in total will account for the remaining 15% of your grade. These assignments will be due at 5 PM on Wednesdays, in the homework drop box near APM 6307. (Exception: The first homework is due on **Friday**, January 8.)
- The midterm exams will be given in the fourth and eighth weeks of the term (January 29 and February 26).
- The +/- grading system will be used for letter grades.

Instructor: P. Fitzsimmons, Office: AP&M' 5715, email: pfitzsim@ucsd.edu, phone: 534-2898, Office hours: MWF 10–11 AM, MWF 1–2 PM, or by appointment.

TA: M. Jamall, Office: APM 6436, email: mjamall@math.ucsd.edu

This handout and other course information is available on the World Wide Web at the URL
<http://math.ucsd.edu/~pfitz/winter10/180b/>