Math 180B

Introduction to Stochastic Processes, I

Winter 2019

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**.

The required text for Math 180B (and 180C) is *An Introduction to Stochastic Modeling* (Fourth Edition) by M. Pinsky and S. Karlin. I plan to discuss most of the material contained in chapters 3, 4, and 5 of the text; the first two chapters contain review and reference material.

- Lectures will be on Monday, Wednesday, and Friday, from 10:00 to 10:50 AM, in Mandeville B-210.
- The discussion sections with your TA meet on Fridays:
  - Section A01 meets in Center 217A, from 4:00 to 4:50 PM
  - Section A02 meets in Center 21A, from 5:00 to 5:50 PM
  - Section A03 meets in APM B412, from 6:00 to 6:50 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%

  You will have the option of substituting your final exam score for *one* of your midterm scores.
- 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 on Mondays at 6 pm.
- You will be submitting your homework assignments through GRADESCOPE at `https://gradescope.com`.
  - Your login is your university email address, and your password can be changed (or set) at `https://gradescope.com/password_resets/new`.
  - Your homework solutions should be in a single pdf file before being uploaded, or as a picture for each question.
  - Please make sure your files are legible before submitting them — unreadable solutions will not earn credit.
  - Most word processors can save files as a pdf.
  - There are many tools to combine pdfs, such as `http://www.pdfmerge.com/`, and others for turning jpgs into pdfs, such as `http://jpg2pdf.com`.

- The midterm exams will be given on the Friday of the fourth and eighth weeks of the term (February 1and March 1).
- The +/- grading system will be used for letter grades.
- **Academic Integrity** is highly valued at UCSD and academic dishonesty is considered a serious offense. Occurrences of academic dishonesty will be reported to the Academic Integrity Office. Students involved in an academic integrity violation will face administrative sanctions which may include suspension or, in very serious cases, expulsion from the university. Cultivate and protect your academic integrity! For more about academic integrity and its value, visit `https://academicintegrity.ucsd.edu`.

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TAs:

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Y. Wang (Section A03), Office: APM′ 5720, email: `yiw518@ucsd.edu`

This handout and other course information is available on the World Wide Web at the URL

`http://math.ucsd.edu/~pfitz/winter19/180b/`