

Introduction to Stochastic Processes

MAP 4102 / MAT 6932, Spring 2014

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Office Hours (Little Hall 460)

Mon 2 - 4 pm

Tues 10:30 am - noon

Text

Essentials of Stochastic Processes, 2nd Edition by Richard Durrett

Course Objectives

Random walks and Poisson processes, martingales, Markov chains, Brownian motion, stochastic integrals and Itô's formula.

Prerequisite: STA4321 or equivalent first course in undergraduate probability.

Course Material	
Chapter 1	Markov Chains
Chapter 2	Poisson Processes
Chapter 3*	Renewal Processes
Chapter 4	Continuous Time Markov Chains
Chapter 5	Martingales
Supplemental*	Brownian Motion and Itô's Formula

(Sections from the starred sections will be covered if time allows.)

Evaluation. There will be an in-class midterm, which will account for 25% of your grade, a take-home final exam which will account for 35% of your grade and the remaining 40% will be from homework assignments. The final grade is curved, and typically it works out close to this:

A: [85 – 100], B: [70 – 85], C: [60 – 70], D: [50 – 60], E: [< 50]

There will be suggested problems associated with each lecture. Only a subset of these will be collected but you are responsible for the material in the homework problems. *You will not succeed in this class if you do not engage with these exercises.*

Make-up Exams. Upon providing written documentation of a serious reason to miss an exam (e.g., a doctor's note), make-up exams will be granted. Unless in the case of a medical emergency, requests to reschedule an exam must be made *in advance*.