

Statistics 4330: Introduction to Stochastic Processes.

Professor: Mark Low, *lowm@wharton.upenn.edu*

Office Hours: I plan to hold office hours over zoom. Hours will be posted on Canvas.

Prerequisite: The class assumes knowledge of probability at the level of Stat 4300, multivariate calculus at the level of Math 1410 and knowledge of linear algebra at the level covered in Math 2400.

Book Durrett, Richard. Essentials of stochastic processes. Third Edition. Please note that this book is available to be downloaded from the library.

Topics: This class is focused on developing a firm foundational knowledge of stochastic processes with a particular emphasis on Markov chains, Poisson processes, renewal processes and Martingales.

Class Attendance: You are expected to attend class in person unless you are sick or have an emergency.

Homework: There will be weekly homework. The main purpose of the homework is to help you engage the material. You are free to work with others but you should write up the solutions on your own. I strongly recommend working on the homework throughout the week. The homework will be submitted via gradescope which keeps track of whether you handed it in on time. Your answers should be carefully written and well organized. Problems will be selectively graded but solutions will be provided to all the problems assigned.

Moderate use of Generative AI permitted: You may use generative AI programs to help you study but any such use on homework should be reported.

Exams There will be two in class exams. The first exam will be on Tuesday October 1. The second exam will be on Thursday December 5. There will not be a final exam. The exams will be closed book, closed notes without use of a calculator.

Grades Grades will be assigned based on your homework and two exams. Homework will count for 20% of your grade and each exam will count for 40% of your grade.