Statistics 433: Introduction to Stochastic Processes.

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

Office Hours TBA

Prerequisite: The class assumes knowledge of Stat 430 as well as multivariate calculus at the level of Math 114. Some knowledge of matrix algebra and determinants at the level covered in Math 240 is also required.

Book Durrett, Richard. Essentials of stochastic processes. Third Edition.

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 each class unless something unusual arises.

Homework There will be weekly homework. The 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. I hope and expect that you will be done solving the questions at least a day before the due date. 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. Homework is also an extremely important part of preparing you for the exams.

Exams There will be two in class exams. The first exam will be on Tuesday October 5. The second exam will be on Thursday December 9. There will not be a final exam. The exams will be closed book, closed notes without use of a calculator.

Grades Grades will initially be assigned based on your two exams. Each exam will be worth the same but you need to pass each exam to pass the class.

If you have done an honest and careful job on the homework and you have at least a C+ average on the exams and less than or equal to an A-, I will move your grade up one level. For example a B will become a B+, a B+ will become an A- and an A- will become an A. A+ grades will be reserved for students who receive an A+ on the exams and have done an excllent job on the homework.

If you have exam grades with an average of C or below homework might have a slightly greater impact on your final grade and good work on your homework will result in increasing your grade by two levels. For example a C- will become a C+ and a C will become a B-.

Graduate Student Teaching Assistant:

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