

**Statistics 510 and 430 Honors**  
**Introduction to Probability**  
**Professor J. Michael Steele**

*Prerequisites:* This course serves as an introduction to probability that is appropriate for graduate students who have a solid undergraduate mathematical background but who are not yet prepared for a graduate course in probability that would require experience with real analysis or measure theory (such as Statistics 530-531 would require). It is also appropriate for a selected number of undergraduates who have done well in advanced calculus (such as those with an A or A+ in Mathematics 114); the limited number of undergraduate admits are issued on a competitive basis. No prior knowledge of probability or statistics is needed (or expected).

*Required Texts and Topic Coverage:* Bershekas and Tsitsiklis, *Introduction to Probability, 2nd Ed.*. The course will cover essentially all of this text. All reading assignments and most homework assignments will call on this text.

*Intellectual Scope:* The core task is to master the language of probability and to master the tools for computing probabilities, means, expectations, variances, moments and distributions, but there will also be honest attention to proofs and the role of probability inequalities. There will be more than the usual attention to the two most central facts of probability: the law of large numbers and the central limit theorem.

*Grading:* There will be weekly homework which will count for 25% of the grade. There will also be an in class mid-term that will count for 15% of the grade. The final exam will count for 60% of the grade and it will be given at the time specified in the University Schedule of Examinations. Students are expected to be scrupulously attentive to principles of academic integrity of the University of Pennsylvania.