STAT 251 - Probability I

Fall 2006

Instructor:	Navin Kashyap - Jeffery Hall 410 Phone: 533-6640, Email: `nkashyap@mast.queensu.ca`
Course Web Site:	`http://www.mast.queensu.ca/~stat251` All assignments and important announcements will be posted here.
Lectures:	Tuesday 8:30, Wednesday 10:30, Friday 9:30, Jeffery 127
Tutorials:	Monday 2:30, Jeffery 127 Recommended practice problems will be posted on the website. Some of these will be solved during the tutorial sessions. *Please print out the problem sheet before coming to the tutorial.*
Office Hours:	Wednesday 11:30-1:30, or by appointment
Text:	*Fundamentals of Probability with Stochastic Processes, 3rd ed.*, by S. Ghahramani, Prentice Hall, 2005.
Assignments:	There will be 10 homework assignments, due on Fridays, *in class*. Late homeworks will NOT be accepted. Homework assignments and solutions will be posted on the class web site; *no paper copies* will be handed out.
Midterm Test	Will be held on Wednesday, October 25. Time and venue to be determined.
Evaluation:	Each homework assignment will be worth 2%. The lowest homework mark will be dropped, meaning that only 9 homeworks, accounting for a total of 18%, will count towards your final course mark. The final course mark will be the larger of the following two scores: Score A: Homeworks 18%, midterm 25%, final exam 57% Score B: Homeworks 18%, final exam 82%
Pre/Corequisites:	MATH 221 or 280, or demonstrable familiarity with vector calculus.

Course Outline

- *Basic concepts of probability theory*: axioms of probability; counting; conditional probability; law of total probability and Bayes' rule; independence of events (Sections 1.1-1.4, 1.6, 1.7, 2.1-2.4, 3.1-3.5 of text).
- *Discrete Random Variables*: random variables; distribution functions; expectation, variance, and moments of a discrete random variable; uniform, Bernoulli, binomial, Poisson, and geometric distributions (Sections 4.1-4.6, 5.1-5.3 of text).
- *Continuous Random Variables*: probability density functions; functions of random variables; expectation, variance, and moments of a continuous random variable; uniform, normal, and exponential random variables (Sections 6.1-6.3, 7.1-7.3 of text).
- *Multiple Random Variables*: pairs of random variables; independent random variables; conditional distribution and expectation; multivariate distributions, covariance and correlation (Sections 8.1-8.4, 9.1, 10.1-10.4 of text).