

**E&CE 316**  
**Probability Theory and Random Processes**  
**Winter 2002**

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**Course Outline**

This course introduces the fundamental concepts of probability theory and random processes. It presents the mathematical tools used to analyze and interpret random events occurring in natural phenomena, games, sciences and engineering.

**Teaching Assistants:**

Ali Abedi, E3-3109A, ext. 5007 and ext. 5357, ali@shannon.uwaterloo.ca  
Yu Cheng, DC 2734, ext. 5317, ycheng@bbcr.uwaterloo.ca  
Office Hours: To be discussed

**Resources**

Lectures: MWF, 10:30-11:20, DWE 2527  
Tutorials: Tuesdays, 03:30-04:20, MC2017  
Course texts: Sheldon Ross, *A First Course in Probability, 6th ed.*, Prentice-Hall, 2001 (2 copies on reserve, QA273.R83 1998).  
Courseware copy of selected sections from R.D. Yates *et al.*, *Probability and Stochastic Processes*, John Wiley & Sons, 1998, (2 copies on reserve, UWD 1418; the book on reserve, QA 273.Y384 1998).  
Reference book: Ian F. Blake, *An Introduction to Applied Probability*, Krieger Pub., 1979, Reprint ed. 1987 (two copies on reserve, QA273.B586 1979).

**Course Grading**

Midterm: 30%  
Final Exam: 60%  
Two quizzes: each 5%

**My course web-site:** <http://calliope.uwaterloo.ca/~ggong/316W02/course.html>

## Course Schedule

Chapter	Sections	# of Lectures	Tutorial Date	Assignments and Tutorial Problems*
1 (Ross)	1-6	3	Jan 8	10*, 12*, 15, 17*, 19*, 21*, 22, 30, 32, 33, T8*, T12
2 (Ross)	1-5	3	Jan 15	3, 5, 10, 15*, 21*, 23*, 29*, 33*, 46, 55, T6, T10*
3 (Ross)	1-4	2	Jan 22	2, 9, 14, 19*, 26*, 33*, 44, 62*, 78*, 85, T15, T20*
4 (Ross)	1-8	7	Jan 29	1, 4, 7*, 8*, 13, 14*, 20*, 22*, 25, 31, T5*
			Feb 5**	35*, 38, 42*, 44, 48, 50*, 52*, 53, 63, 67*, T10, T19*
5 (Ross)	1-7	5	Feb 19	1, 4*, 6, 11*, 13, 14*, 19, 24*, 28, 30*, 38, 40*, T12*, T29
6 (Ross)	1-5	4	Feb 26	2, 9*, 14*, 15, 18*, 23, 26*, 33, 40, 42*, 45*, 49, T17, T22*
7 (Ross)	1-6	3	March 5	2, 4*, 7*, 9*, 18, 23, 32*, 36, 42, 45*, 53, 56*, T1, T2
8 (Ross)	1-4	2	March 12	4*, 5, 13*, 14*, 18*, T2, T3*
6 (Y&G)	1-9	4	March 19	6.2.3, 6.3.1, 6.3.4*, 6.4.3*, 6.5.1*, 6.5.3, 6.5.4, 6.5.6*, 6.6.1, 6.6.3*, 6.7.7, 6.8.1, 6.9.4*
10 (Y&G)	1-5	3	March 26	10.1.1, 10.1.3, 10.2.2*, 10.2.3*, 10.3.1*, 10.3.3*, 10.4.1, 10.5.2*, 10.5.3
11 (Y&G)	10-11	1		

- \*\*One extra tutorial before the mid-term exam (date to be decided).
- \*Problems will be solved in the tutorial and all solutions will be available after each tutorial (call number: UWD 1115 or accessed from the course web-site of the department).