

STAT 870-4

Applied Probability Models

Summer 2013
Day Course

Students requiring accommodations as a result of disability must contact the Centre for Students with Disabilities 778-782-3112 or csdo@sfu.ca

Instructor: [Dr. Richard Lockhart](#)

Textbook:

There will be no required textbook but the course will be based on the material in *Introduction to Probability Models 9th ed.*, by S.M. Ross. Publisher: AcademicPress. I will put a few applied probability books on reserve in the SFU library.

Prerequisite:

Permission of the instructor.

Calendar Description:

Application of stochastic processes: queues, inventories, counters, etc. Reliability and life testing. Point processes. Simulation.

Outline:

Course Structure: There will be 4 to 8 hours per week of lectures because I will be travelling a couple of times and the course will finish by July 26th at the latest. There will be assignments and in class presentations by students plus a final exam. I intend to tailor the course to student interests as much as possible so if you have a particular interest please let me know. I will do about 2 weeks of basic probability theory. Then I will do introductions to Markov Chains, to Poisson Processes, to Point Processes, to Brownian Motion and maybe to Renewal theory or Queuing theory or diffusions. The last two weeks of the course will be taken up, I expect, with 20 minute to 1/2 hour presentations from each student taking the course for credit. The focus of the presentation is clarity, not depth.

Web Materials: I expect to produce web materials at <http://www.stat.sfu.ca/~lockhart>. Assignment questions will be drawn from various sources. I will not be posting solutions unless some miracle occurs.

Computing Requirements: There will be a computational component to this course; you will be expected to do a simulation project as one assignment. You will have some choice concerning the nature of this project so feel free to make suggestions. Students in the course will be expected to have (or get) and use accounts on the department network.

Grading Scheme:

Assignments	50%
Presentation	25%
Final Exam	25%

Students should be aware that they have certain rights to confidentiality concerning the return of course papers and the posting of marks. Please pay careful attention to the options discussed in class at the beginning of the semester. Students are reminded that Academic Honesty is a cornerstone of the acquisiti