

# STA261H - Probability and Statistics II

## Summer 2008

Lectures: Mondays and Wednesdays 7-10pm at RW110  
Instructor: Gun Ho Jang  
e-mail: [smsrts@gmail.com](mailto:smsrts@gmail.com) Put 'STA261' in the subject of your mail  
Web page: <http://www.utstat.toronto.edu/ghjang/teaching/sta261.php>  
Office: Sidney Smith Hall room 6008 (shared room).  
Office Hours: Mondays 2-4pm or by appointments.

### Course Description

This is a sequel to STA257H with emphasis on statistical theory and methods. Some methods to make statistical decisions will be introduced, and some applications (simple linear regression and anova) will be dealt in class. Topics to be covered: point estimation, testing, confidence intervals, statistics, unbiasedness, sufficiency, simple linear model and the analysis of variance. This corresponds to chapters 8, 9, 10, 11 and 13 of the textbook with additional material not being found in the textbook.

### Textbook

D.D Wackerly, W. Mendenhall and R. Scheaffer (2007). Mathematical Statistics with Applications, 7th edition with the student solutions manual.

### References

M. Evans and J. Rosenthal (2003). Probability and Statistics: The Science of uncertainty.  
R. Hogg and A. Craig (1995). Introduction to Mathematical Statistics.

### Evaluation

The grading scheme is as follows:

	proportion	date, time and location
Mid-term test	40%	Monday, July 21, <b>6-8pm</b> <b>SF2202</b> ; Stanford Fleming Building Problems will be solved in the lecture room (RW110) from 8:30pm
Quizzes	10%	Quiz I: Wednesday July 9, 9:30-10:00pm, Quiz II: Wednesday July 30, 9:30-10:00pm,
Final exam	50%	TBA.

### **Tutorials**

Tutorials are Mondays and Wednesdays 6-7pm: beginning on Monday July 7. Many important problems are dealt during tutorial.

### **Assignments**

There will be no assignments. Several practice problems, however, will be distributed through the course web site.

### **Notes**

- This course is the second part of the second year in mathematical statistics and also requires background of STA257 or equivalent. Intermediate level of calculus is also required.
- Important announcements or other course information will be posted on the course web site. Check it regularly.
- The term test and final exam will be closed book with no aids allowed except a nonprogrammable calculator. A formula sheet will be also provided in each test and exam.

outline

STA347-Course Outline-Summer, 2008

Instructor: Philip McDunnough, SS6002 .

Text (required): Probability via Expectation, Peter Whittle, (Springer) - 4th ed.

Marking: One 2- hour test (25%), one assignment to be treated as a take home test (15%) and one 3-hour final exam (60%) . Any missed "test" increases the value of the final exam by the same amount. The final exam may be worth 100% if it is to your benefit.

Lectures: Tuesdays, Thursdays 6-->9 in SS1087 .

Office Hours: After class, by e-mail, by appointment.

Extra help: The TA will have some office hours before the final exam and the in-class test.

Assignments: None but suggested problems will be given and solutions provided . It is important to do these as they indicate the level and type of questions to be found on each of the 2 tests.

Coverage

(A)- A summary of the theory of probability and expectations (including conditional expectation) required for the study of stochastic processes.

(B)- Main limit results in probability .

(C)-The Poisson Process and variations . Basic renewal processes.

(D)-Markov Chains including branching processes, simple random walks, limit theorems.

The material is taken from Chapters 1-->8, 9 (parts), 14 (very little), 16 (parts) of the text.

□Main references:

- Introduction to Probability Models, Sheldon Ross, (Academic Press) - , somewhat elementary for probability but excellent for Markov Chains and Poisson processes .

- An Introduction To Stochastic Modeling, H. M. Taylor, S. Karlin, (Academic Press) - right level, more stochastic process orientation

- Stochastic Processes , Sheldon Ross, (Wiley) - good reference for stochastic processes ( slightly more advanced than 347)

Other reference :

- Probability and Random Processes, Grimmett & Stirzaker, (Oxford) - a bit advanced, useful for STA447□

□pmcd - July 2, 2008

