

STA257H1 F-Probability and Statistics I-Summer 2015

Instructor: Panpan Wu

Email: panpan@utstat.utoronto.ca

Lecture Time: MW 7pm-10pm, 2015/05/11-2015/06/19

Location: MP203

Teaching Assistants:

TA	Email	Tutorial Room	Students' Last Name
Xiucui Ding	xiucui@utstat.utoronto.ca	ESB149	A-K
Zhen Qin	zhen.qin@mail.utoronto.ca	ES4001	L-T
Jun Yang	jun@utstat.utoronto.ca	BA2185	U-Z

Course Objective

This course, and its sequel, STA261H1, are mathematically quite challenging, the target audience includes anyone proceeding directly to a specialist degree in statistics, as well as anyone with serious and special interest in some other of the identifiably statistical-physical sciences. Topics, albeit very rigorously covered, are, nevertheless, very standard introductory ones: abstract probability and expectation, discrete and continuous random variables and vectors, with the special mathematics of distribution and density functions, all realized in the special examples of ordinary statistical practice: the binomial, Poisson and geometric group, and the Gaussian (normal), gamma, chi-squared complex.

Recommended Background

MAT1351+MAT136H with a minimum grade of 70% in MAT136H or MAT137Y or MAT157Y with MAT137Y/MAT157Y strongly recommended

Textbook

MATHEMATICAL STATISTICS AND DATA ANALYSIS, 3rd Edition, by John Rice

Tutorials

Time: MW 6pm-7pm, starting from May 13th, 2015

Contents: weekly assigned problems and other relevant questions students may have

Quiz: Once every week, multiple choice problems, first quiz on May 13th, 2015

If you miss a tutorial/quiz for some reason, please discuss this matter with your TA.

Evaluation

Quiz: 20%

Mid-term Test: 30%

Final exam: 50%

Mid-term Test and Final Exam

Mid-term Test

- Time: 7pm-9pm, June 1st, 2015
- Location: TBA
- Coverage: Week 1-3 materials
- ***Missed mid-term test: there is no make-up test. If you miss the mid-term test, your final exam mark would account for 80% of your final grade.***

Final Exam

- Time: TBA
- Location: TBA
- Coverage: All covered

Academic Offences

Academic offences are unacceptable. Offenders are caught, and sanctions can be severe-zero in the course with annotation on the transcript for several years; suspension for a year; even expulsion. Various measures, announced and unannounced, will be taken throughout the year to reduce their incidence and to insure successful prosecution when they do occur (e.g. photocopying of students' tests, multiple versions of multiple choice exams). In addition, please note the following:

- **Oversights** in marking on a test paper (e.g. addition error, overlooked work) must be brought to the attention of the TA **immediately**-during the tutorial class when test papers are returned;
- **Regrading** requests will only be considered for **term test** which are written in **ink**.

Tentative Lecturer Schedule

Lec 1-May 11th, 2015	Sample space, probability measure, classical probability models, conditional probability, independence
Lec 2-May 13th, 2015	Discrete and continuous random variables (univariate)
Lec3-May 20th, 2015	Function of random variables, discrete and continuous random vectors
Lec 4-May 25th, 2015	Conditional distribution, function of random vector, extrema and order statistics
Lec 5-May 27th, 2015	Expected value of random variables
Lec 6-June 1st, 2015	Mid-term test
Lec 7-June 3rd, 2015	Variance, standard deviation, covariance, correlation, conditional expectation
Lec 8-June 8th, 2015	Moment-generating function, law of large numbers
Lec 9-June 10th, 2015	Convergence in distribution, central limit theorem
Lec 10-June 15th, 2015	Distribution derived from the normal distribution
Lec 11-June 17th, 2015	Distribution derived from the normal distribution (continued), final review

