ACT451H1F   Loss Models I Fall 2013

Instructor: X. Sheldon Lin   Office: 6018 Sidney Smith
Phone: (416) 978-5709   Email: sheldon@utstat.utoronto.ca
Website: www.utstat.utoronto.ca/sheldon/teaching.html
Office hours: Tuesdays 10-11am, 2pm-4pm, or by appointment.
Lecture Times and Location: Tuesdays 11:10am-noon, Thursdays 10:10am-noon; RW117.

Prerequisite: STA261   Co-requisites: ACT348, and STA347. If you are taking those two courses concurrently, you do not need my permission to enroll this course. According the FAS regulations, if you are missing any prereq for this course you should submit a waiver of prereq form to me for approval. The form can be found on-line at

http://www.utstat.toronto.edu/wordpress/wp-content/uploads/2011/09/PrereqWaiver.pdf

Please submit the waiver for approval by Thursday Sept 19. If you miss any prereq and do not get the waiver approved, then you will be removed from the course on Friday Sept 20.

Required Textbook

Broverman, S., ACTEX Study Manual for the SOA Exam C and CAS Exam 4, 2013 Edition, Volume One.

The study manual has two volumes and is available at ACTEX Publications (http://www.actexmadriver.com/). Volume One is also used for ACT452 in the Winter semester. The second volume is for ACT466. I have posted the first 6 sections of the study manual on my website for you to download. Please purchase a copy of the study manual as soon as possible.

Calculator

Only one of the following calculators is allowed in the midterm test and the final exam: BA-35, BAII Plus, BA II Plus Professional Edition, TI-30Xa, TI-30XIIS, TI-30XIIB, TI-30XS MultiView, and TI-30XB MultiView. They are also the calculators allowed in the SOA exams.

Course Syllabus and Tentative Schedule

This course will cover Sections 5-21 of the study manual. I will very briefly review the materials in Sections 1-4 during the first week. As the title of the study manual indicated, this course covers part of the SOA Exam C syllabus. The rest is covered in ACT452 and ACT466. I will also teach some topics including multivariate mixture models and copula theory that are not in the study manual.

Week 1: Review key concepts and formulas in Sections 1-4.
Weeks 2-4: Parametric distributions; transformations; linear exponential family; tail behaviour; risk measures.
Week 5: Mixture models.
Weeks 6-7: Policy modifications.
A written-answer midterm test will be given on Thursday Oct. 24 from 10:30 to 12:00pm (90 minutes).
Week 8: Policy modifications continued.
Week 9: Claim severity; claim frequency; $(a, b, 0)$ and $(a, b, 1)$ classes.
Weeks 10-11: Compound distribution and aggregate claims; Recursive calculation; Stop-loss insurance. No class on Tuesday Nov. 12 (Fall break).
Week 12: Multivariate mixture models; Copulas.

Quizzes, Test and Exam

Five 10-minutes in-class pop quizzes will be given during the semester. There are no make-up quizzes. The best four quizzes will be counted, 1.5% each, towards the final mark. There will be no homework but I will assign practice problems from the study manual every Thursday or Friday and they will be posted on my website. A midterm test will take place on Thursday October 24 and it accounts for 37% of the final mark. Should you be forced to miss the term test, you are required by faculty regulations to submit, within one week, appropriate documentation from the U of T Health Services to me or to the Departmental Office SS6018 (Print on it your NAME, STUDENT NUMBER, course number, and date.). **And you must contact me to arrange a time within one week for an individual oral makeup test.** A written-answer final exam (2 hours) will be given during the faculty exam

period. The final exam accounts for 57% of the final mark.

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