

## **ACT452H1S LOSS MODELS II - 2019**

### **Pre/corequisites**

ACT348H, ACT451H, STA261H, STA347H

**Students who do not have the prerequisites or prerequisite waivers will be removed from the course on Friday, January 18.**

### **Lecture Times and Locations**

Monday 2PM-3PM UC 144, Wednesday 2PM-4PM, UC 144

### **Instructor & Office Hours**

S. Broverman, SS6016, 978-4453, sam@utstat.toronto.edu

Monday 10AM-Noon

### **Recommended Reference Material**

ACTEX Model Estimation - In Volume 1 of ACTEX Study Guide for Exam STAM  
(available from [www.actexamdriver.com](http://www.actexamdriver.com))

Loss Models, From Data to Decisions, S. Klugman, etc. 3rd Ed. or later

**Lecture notes and problem sets will be posted on Quercus.**

### **Course Outline**

The course will cover the material in the Model Estimation section of ACTEX Study Guide for Exam STAM. Material on Casualty Insurance may be covered as well, time permitting.

### **Marking Scheme**

Term Test - 40%

Final Exam - 60%

There will be no makeup test. Anyone who misses the term test and has a valid doctor note will have the term test weight transferred to the final exam.

A calculator will be needed for some test questions. There is no restriction on the type of calculator allowed.

## Approximate Outline

Week One: Review of Mathematical Statistics, Point Estimation, Interval Estimation, Hypothesis Tests

Week Two: Empirical Estimation for Individual Data and Group Data

Week Three: Kernel Smoothing Method

Week Four: Left Truncated and Left Censored Data

Week Five: Parametric Estimation, Method of Moments, Percentile Matching

Week Six: Midterm Review and Midterm Test. The test accounts for 40% of the final mark.

Weeks Seven and Eight: Maximum Likelihood Estimation

Weeks Nine and Ten: MLE for Incomplete Data, EM algorithm, Mixture Models, Data Fitting and Analysis

Week Eleven: Graphical Methods for Model Selection

Week Twelve: Model Selection and Tests