

## ACT 466H1/STA2505H, Credibility and Simulation, Winter 2023

<b>Lecture Section</b>	<b>L0101</b>
<b>Lecture times, location</b>	Tu 11:10 a.m. - 12:00 p.m in person HS696 Thur 10:10 a.m. - 12:00 p.m. in person HS696 Some classes will be taught in zoom, but I will update the info when the time comes.
<b>Instructor</b>	Dr. Andrei Badescu, Hydro building 918 badescu@utoronto.ca
<b>TA</b>	Sophia Ian Chan

### Texts:

#### Required

*Exam STAM Study Guide, Part C and D* - 2020, Samuel A Broverman , students would have to buy it from ACTEX <https://www.actexamdriver.com/>. This part of the ACTEX study guide for Exam STAM and is copyrighted by ACTEX.

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#### Additional

- *Loss Models from Data to Decisions*, 5<sup>th</sup> Ed., by Klugman S., Panjer H., Willmot G.

### Coverage:

- Limited Fluctuation Credibility
- Bayesian Credibility – Discrete and Continuous Prior
- Bayesian Credibility for Parametric Distributions
- Buhlmann Credibility
- Empirical Bayes Credibility Methods
- Loss Reserving and Ratemaking

### Course Objective:

This course is designed to help you to prepare for the portion of Exam STAM of the Society of Actuaries ([www.soa.org](http://www.soa.org)). Questions and in-class discussions are encouraged.

### Teaching style:

Most of the lectures will be in person, if I will be teaching on ZOOM I will let you know in advance. I will post the pdf files for the lectures on Quercus. This will give the students the chance to go over the notes and be able to pay attention to the class explanations.

### Test:

#### Term tests

- Test 1 – 2<sup>nd</sup> of February 2023, 10:10 -11:10 am, in person in the normal class time, more details to be announced later – 25% of the final mark
- Test 2 – 16<sup>th</sup> of March 2023, 10:10 - 11:10 am, in person in the normal class time, more details to be announced later – 25% of the final mark

- **Final Exam 2 hours (TBA) – 50% of the final mark**

### **Marking Scheme:**

The final course mark will be determined via two term tests, each worth 25% and a final exam worth 50%. These weightings will not be changed, either for the whole class or for any individuals. The test and final exam will be written answer questions form.

**Missed Term Test: YOU ARE NOT ALLOWED TO MISS MORE THAN ONE TEST.** If by valid reasons you missed one term test, the 25% weight of the mark associated to the test will be moved towards the final exam and the final exam will count for 75%. Students who will miss both term tests will lose automatically 25% of the final mark and the remaining 25% will be moved to the final that will only count for a maximum of 75%. **There is no deferred final exam for this class.**

### **Calculator:**

A calculator is essential for working exercises, tests and final exam. The Texas Instruments BA II PLUS calculator is one of the calculators allowed on the Society of Actuaries examinations; it has the financial functions that would be needed for this course and is recommended. All non-programmable calculators are allowed.

### **E-mail policy:**

E-mails will only be answered if they are from a U of T address. When there are many e-mail requests, not all can be answered, but an answer to a common question will be posted on Quercus.

### **UAP course syllabus:**

This course is one of the mandatory courses under Canadian Institute of Actuaries (CIA)'s University Accreditation Program (UAP). UAP has moved away from the course-by-course accreditation method and towards program accreditation method (the "Pathway 1 of CIA qualification"). Under the new pathway, in order to obtain ACIA (Associate of CIA) professional credential, students need to:

1. Complete a degree from an actuarial program (ACT Specialist or Major) at University of Toronto and pass a list of mandatory courses. No minimum course grade or GPA is required as long as students pass all the mandatory courses. The full list of UofT's 16 mandatory courses are: ACT240, ACT245, ACT247, ACT348, ACT349, ACT370, ACT451, ACT452, ACT466, STA257, STA261, STA302, STA314, ECO101, ECO102, MGT201/RSM219.

For transition: CIA will accept an actuarial degree from UofT completed between June 30, 2015 and October 31, 2023 without all the specified mandatory courses.

2. Complete the ACIA Module (administered by CIA, projected Spring 2023).

For transition: a student can be exempt from the ACIA Module if they complete SOA exam PA and the 8 FAP Modules and assessments by December 31, 2023.

3. Complete an open-book ACIA Capstone Exam (administered by CIA, projected Fall 2023).

For transition: a student can be exempt from the capstone exam by completing any combination of UAP credits or exams for P, FM, IFM, LTAM, STAM and SRM by October 31, 2023. The deadline to apply for UAP credits is September 30, 2023.

Details on the new pathway for students can be found here: <https://education.cia-ica.ca/acia/acia-for-accredited-university-students/>