

## ACT 466H1/STA2505H, Credibility and Simulation, Winter 2022

<b>Lecture Section</b>	<b>L0101</b>
<b>Lecture times, location</b>	Tu 11:10 a.m. - 12:00 p.m. online on ZOOM, in person if allowed SS1078 Thur 10:10 a.m. - 12:00 p.m. online on ZOOM, in person if allowed MS3278
<b>Instructor</b>	Dr. Andrei Badescu, Hydro building 918 andrei.badescu@utoronto.ca
<b>TA</b>	Sophia Ian Chen

### 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:

I am going to use past materials that will be uploaded in the weekend for the following week. During the lecture times I will come on ZOOM (a recurring link will be provided to you) and go over the notes and answer all your questions, have discussions etc. This will give students the chance to go over the notes and/or listen to the lecture ahead of the class time. There will be multiple files and recordings. Please keep saving the files on you computers, as at some point in time, when I will run out of space, I may need to delete some of the older notes.

If school will allow us to come in person, I will come in person at least once a week to teach – we will discuss this at a later stage when we will have more info about the COVID policies.

### Tests:

#### Term tests:

**As of today, I am putting the term tests to be online, HOWEVER if the Covid policies will allow us to do the tests in person, the tests and the final assessment will be carried IN PERSON and this is MANDATORY to**

**take as long as University allows us to be in person. THERE IS ABSOLUTELY NO EXCEPTION TO THIS RULE.**

- Test 1 – 3rd of February 2022, online from 10:00 am :11:00 am – the test will be online on Quiz from Quercus, further details will be provided – 25% of the final mark. AGAIN, if University allows us, the test will be in person.
- Test 2 – 15<sup>th</sup> of March 2022, online from 11:00 am :12:00 pm – the test will be online on Quiz from Quercus, further details will be provided – 25% of the final mark. AGAIN, if University allows us, the test will be in person.
- **Final Assessment - written exam 2 hours (TBA) – 50% of the final mark – in person if it is allowed by University, and if not, the final will be online.**

### **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 tests and the final exam will be in a combination of multiple choice questions and written answer questions.

**Missed Term Test: YOU ARE NOT ALLOWED TO MISS MORE THAN ONE TEST.** If by valid medical reasons, that you have to submit and be approved by the course instructor, you miss 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 are no make up tests or final exam. AGAIN BE SURE THAT IF THE EXAM IS IN PERSON, YOU ARE IN CANADA AND ARE ABLE TO WRITE THE TEST OR THE EXAM.**

### **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. Please go to the SOA website and check the list of calculators allowed by SOA and those will be ok for this course.

### **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.

**Prerequisite:** [ACT240H1](#) (minimum 63%), [ACT245H1](#) (minimum 63%), [ACT247H1](#) (minimum 63%), [STA261H1](#), [ACT350H1/STA347H1](#), [ACT451H1](#)

### **Updates:**

All the possible updates regarding to this course will be made in on Quercus.

**UAP:** Canadian Institute of Actuaries (CIA)'s University Accreditation Program (UAP)

ACT466 is an accredited course under the UAP program. The minimum grade needed to apply for an exemption is 75. For detailed information on UAP, please visit the following webpages:

- University Accreditation Program description

<<http://www.cia-ica.ca/membership/uap>>

- List of accredited courses offered by University of Toronto:

<http://www.cia-ica.ca/membership/uap/accredited/toronto>

<<http://www.cia-ica.ca/membership/uap/accredited/toronto>>

- How to apply for CIA exemptions:

<<http://www.cia-ica.ca/membership/uap/information-for-students>>

Note: The CIA will grant credits to students for SOA/CAS examinations based on the achievement of the minimum Grade towards Associateship (ACIA) and Fellowship (FCIA) in the CIA. At the time of this agreement, CIA credits are recognized by the following actuarial organizations towards their respective designations:

Casualty Actuarial Society (CAS): ACAS, FCAS

UK Institute and Faculty of Actuaries (IFoA): FIA, AIA

Institute of Actuaries of Australia (IAA): AIAA, FIAA

Actuarial Society of South Africa (ASSA): AMASSA, FASSA

American Academy of Actuaries (AAA): MAAA

The CIA does not guarantee that credits granted to students under the CIAUAP will be recognized by any other actuarial organizations towards their actuarial designations."