

ACT 348H1F, Advanced Life Contingencies, Summer 2022

Lecture Section	L0101	
<i>Lecture times, location</i>	Mon, Wed 9:00 -12:00 – in person MS2173 starting on the 9 th of May	
<i>Instructor</i>	Dr. Andrei Badescu, andrei.badescu@utoronto.ca	
<i>Office hours</i>	Thursdays on zoom 10-11 am link to be posted on Quercus	
<i>TA</i>	Sohpia Chen	

Texts

Required

Exam LTAM Study Guide – 2019-2020, includes ACT247+348, and ACT348+455, Samuel A Broverman.

Navigate to the **Digital Course Materials** section on the University of Toronto Bookstore Website

at https://uoftbookstore.com/textbooks/access_codes.asp?

From here, scroll down the list and select your course, which appears as:

STG ACT 348 Coursebook

- There may be printed copies that you can find at the U of T bookstore.

Additional

- Actuarial Mathematics, 2nd Ed., by Bowers et al, Society of Actuaries, available on the SOA website to be ordered.
- Actuarial Mathematics for Life Contingent Risk, 2nd edition, Dickson D, Hardy M., Waters

Course Objective:

This course is designed to help prepare you for the portion of Exam LTAM of the Society of Actuaries (www.soa.org) and for future university courses. Questions and in-class discussions are encouraged.

Coverage:

- Review of Intro to Life Contingencies (S1-S17)
- Benefit Premiums (S18-S19)
 - o The loss at issue random variable
 - o Equivalence principle premium
- Expense Augmented Models (S20)
- Benefit Reserves (S21-S27)
 - o Prospective and retrospective reserves
 - o Reserves on additional policy types
 - o Expense augmented reserves
 - o Recursive relationships for reserves
 - o Modified reserves, policy profit
- Multiple Life Functions (S28-S31)
 - o The joint life status
 - o The last survivor status
 - o The common shock model
 - o Multiple life insurance and annuities

- Contingent probabilities and insurances

Teaching style:

All the lectures will be in person. 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.

I will be teaching without a mask due to a mask exemption petition that was approved by the university in my case. I was asked to follow the below guidelines:

- The instructor will have a plan to ensure safety measures are in place including:
 - In the case of the instructor's mask removal approval, they will be physically distanced from the first row of students (closing the first row, for example, if needed to adhere to physical distancing, at least 2m away).
 - In the case of students removing masks for pedagogical reasons, the instructor will instruct the student on when they can take off their mask (start of the activity) and when to put the mask back on (end of activity).
 - They will remove masks, they will place it in a clean bag or container when not wearing it, they will be physically distanced until the activity is over and will put their mask back on, perform hand hygiene and return to their seat.
 - The instructor will put their mask back on when leaving the lecture area (area that is physically distanced), even if for less than a minute.
 - The instructor and students will have a spare mask available in case it is misplaced, dropped or soiled.
 - The instructor and students will use hand sanitizer and disinfectant wipes where available inside the classroom and at the instructor's area, if needed.

Test:

Term tests

- Test 1 - 25th of May 2022, 9:10 -10:10 am, in person in the normal class time, more details to be announced later – 25% of the final mark
- Test 2 – 13th of June 2022, 9:10 -10:10 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 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 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.

Updates:

All the possible updates regarding to this course will be made in class and in Quercus. The student should check Quercus regularly.

UAP course syllabus:

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

ACT348 is an accredited course under the UAP program. The minimum grade needed to apply for an exemption is 70. For detailed information on UAP, please visit the following webpages:

- University Accreditation Program description

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

<<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>

- 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 CIA UAP will be recognized by any other actuarial organizations towards their actuarial designations."