

ACT 348H1F, Advanced Life Contingencies, Summer 2025

Lecture Section	L0101	
<i>Lecture times, location</i>	Mon, Wed 9:00 -12:00 – in person starting on the 5 th of May in HS120	
<i>Instructor</i>	Dr. Andrei Badescu, andrei.badescu@utoronto.ca	
<i>Office hours</i>	The TA, will have office 1 per week to TBA	
<i>TA</i>	Sebastian Calcetero	

Texts

Required

Exam ALTAM Study Guide – 2019-2020, ACT247+348 and ACT 348 and 455 by Samuel A Broverman, order it at <https://www.uoftbookstore.com/adoption-search-results?ccid=7561467&itemid=393762>

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 FAM and ALTAM 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
 - o 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.

Test:

Term tests

- Test 1 - 21th of May 2025, in person in the normal class time, more details to be announced later – 25% of the final mark
- Test 2 – 9th of June 2025, 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: Both term tests are mandatory!!! If by valid reasons 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%. In exceptional cases, students who miss both term tests will be asked to do an oral exam that will test the material taught in class up to the date of the oral exam. **The oral exam will have to be within a week after the second missed term test.** The final mark will consist of 25% the oral exam and 75% of the final 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.

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.

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

UAP has moved away from the course-by-course accreditation and is now based on a program accreditation method. Under the new credentialing pathway, 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. The full list of UofT's 16 mandatory courses are: ACT240, ACT245, ACT247, ACT348, ACT349, ACT370, ACT451, ACT452, ACT466, STA237/STA257, STA238/STA261, STA302, STA314, ECO101, ECO102, MGT201/RSM219;
2. Complete the ACIA Modules;
3. Complete an open-book ACIA Capstone Exam

For further information on ACIA modules and Capstone Exam, please email education@cia-ica.ca.

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