

ACT 348H1F, Advanced Life Contingencies, Fall 2020

Lecture Section	L0101
<i>Lecture times</i>	Mon 15:00 -17:00 – online Wed 11:00 – 12:00 - online
<i>Instructor</i>	Dr. Andrei Badescu, 700 University Avenue, Suite 9118 Toronto ON M5G 1X6 badescu@utstat.toronto.edu
<i>Instructor office hours</i>	Mon 15:10 - 16:00 – online on BBcollaborate Wed 11:10 – 12:00 – online on BBcollaborate
<i>TA</i>	Yuxuan Zhang

Texts

Required

Exam LTAM Study Guide – 2019-2020, Vol 1A and Vol 1B, Samuel A Broverman.

You can buy the books at:

https://www.campusebookstore.com/integration/AccessCodes/default.aspx?bookseller_id=96&Course=STG+ACT348%2f+ACT455+COURSEBOOK&frame=YES&t=permalink

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

- The common shock model
- Multiple life insurance and annuities
- Contingent probabilities and insurances

Teaching style:

All the lectures will be recorded and uploaded on Quercus with (usually) at least one day ahead of the normal lecture times, so Sunday and Tuesday. 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. During the regular class time, for one hour, on both Mondays and Wednesdays, I will be online on BBcollaborate (on Quercus please check the BBcollaborate and you will see, at those times, a session organized and I will be waiting there for you to come ask questions, have discussion etc.). I will share my screen with you and answer all your questions online, have discussion with respect to the course materials, things you do not understand etc.

Test:

Term tests

- Test 1 - 7th of October 2020, online from 11:10 am :12 00 pm – the test will be run online on Quiz from Quercus, further details will be provided – 25% of the final mark
- Test 2 – 4th of November 2020, online from 11:10 am :12 00 pm – the test will be run online on Quiz from Quercus, further details will be provided – 25% of the final mark
- **Final Assessment - written 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 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 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%. 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**

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."