

## ACT 348H1F, Advanced Life Contingencies, Fall 2019

<b>Lecture Section</b>	<b>L0101</b>	
<i>Lecture times, location</i>	M 15:00 -17:00 – SS2102 W 11:00 - 12:00 – SS2102	
<i>Instructor</i>	Dr. Andrei Badescu, Stewart Building, 411A <a href="mailto:badescu@utstat.toronto.edu">badescu@utstat.toronto.edu</a>	
<i>Instructor office hours</i>	Wednesday 13:00 - 15:00 – Stewart 411A or by appointment.	
<i>TA office hours</i> <b>PHS 381</b>	TBA	

### Texts Required

- Exam LTAM Study Guide – 2018 or 2019 (if available), Vol 1A and Vol 1B, Samuel A Broverman.

These study guides will be purchased by students from the Dept. The books will be sold for cash only in the Dept meeting room, SS6004 on the following dates:

Monday 9 from 12-3 pm, Tuesday 10 from 12-3 pm, Wednesday 11 from 9-12 pm, Thursday 12 from 12 - 3pm.

**All sales are EXACT CASH only** ACT348/455 \$40.

### Additional

- Actuarial Mathematics, 2<sup>nd</sup> Ed., by Bowers et al, Society of Actuaries, available on the SOA website to be ordered.
- Actuarial Mathematics for Life Contingent Risk, 2<sup>nd</sup> 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](http://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

- Recursive relationships for reserves
- Modified reserves, policy profit
- Multiple Life Functions (S28-S31)
  - The joint life status
  - The last survivor status
  - The common shock model
  - Multiple life insurance and annuities
  - Contingent probabilities and insurances

**Test:**

**Term test**

- 28<sup>th</sup> of October 2019, during the class time, room TBA

**Final Exam (TBA)**

**Marking Scheme:**

The final course mark will be determined via a term test, worth 40% and a final exam worth 60%. These weightings will not be changed, either for the whole class or for any individuals. The test and final exam will be in a written answer format.

**Missed Term test:**

**There will be no written make-up test.** If you miss the term test, you are required by faculty regulation to submit, **within one week**, appropriate documentation to the course instructor. Print on the documentation your name, student #, the course number and the date. I shall be skeptical about accepting medical certificates unless the doctor specifically indicates that in his/her opinion there was a disabling health problem on the day of the test. If your documentation is accepted, there will be an *oral examination* of 1 ½ hours at a time decided by the instructor, but no later than a week from the test date.

**Calculator:**

Please bring it to each class – it will make lectures easier to remember if you work problems as they are discussed. 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 the course web page.

**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."