

ACT247H1S – Introductory Life Contingencies, Summer 2023

Instructor	Sophia Chan ianweng.chan@mail.utoronto.ca
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Lectures	Monday 10:10 a.m. – 12:00 p.m., in person HS108 Wednesday 10:10 a.m. – 12:00 p.m., in person HS108
Tutorials	Thursday 7:10 p.m. – 9:00 p.m., online on Zoom https://utoronto.zoom.us/j/82070854245 Meeting ID: 820 7085 4245 Passcode: 370529
Instructor office hours	TBD online on Zoom [Link to be updated]

Course Description

Probability theory applied to survival and to costs and risks of life assurances, life annuities, and pensions; analysis of survival distributions; international actuarial notation.

Prerequisite

ACT240H1; MAT137Y1 (minimum grade 63%)/MAT157Y1 (minimum grade 60%); STA257H1

Course Outcomes

By the end of the course, you will be able to:

- Understand the key elements behind the mathematics of pricing key life insurance products.
- Recognize life contingency notation and apply it comfortably.
- Understand the concept behind and apply life tables.
- Understand and apply parametric survival models for long-term insurance coverages.
- Understand the key features of life insurance and apply mathematical relationships to price them.
- Understand the key features of life annuities and apply mathematical relationships to price them.

Textbook

S. Broverman, Actuarial Science Coursebook for ACT247H + ACT348H 2023 Edition

Course Tentative Schedule

Lecture	Date	Quiz	Topic
1	July 5	---	Foundations, Sections 1-3
2	July 10	1	
3	July 12	2	Life Tables and Parametric Survival Models, Sections 4-8
4	July 17	3	
5	July 19	4	
6	July 24	5	Life Insurances, Sections 9-13
7	July 26	---	
8	July 31	6	
9	August 2	7	
10	August 9 (August 7 is a holiday)	8	Life Annuities, Sections 14-17
11	August 14	9	
12	August 15 (Make-up Monday)	10	

Course Grading

1. Quizzes (10 times, 3% each, total 30%)

1 question on that lecture's content, to be submitted on Quercus; attempt automatically awards 1%; deadline: 11:59 p.m. the next day after the lecture, e.g. Quiz 1 due on July 11, 11:59 p.m.

2. Open book, at-home, timed MCQ tests (70%):

- a. Midterm 1: 20%
July 27, 2023, 7:00 p.m. to 9:00 p.m. – covers Sections 1-8
- b. Midterm 2: 20%
August 10, 2023, 7:00 p.m. to 9:00 p.m. – covers Sections 1-13, with focus on Sections 9-13
- c. Final exam: 30%
Date and time TBD – covers Sections 1-17

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

ACT247 is an accredited course under the UAP program. The minimum grade required for ACT247 is 70. For detailed information on UAP, please visit the following webpage:

https://www.cia-ica.ca/education/university-accreditation-program-home/accredited-universities/accredited-university-detail?pav_universityid=06f6b138-61e5-e511-80b9-00155d111030

The CIA will grant candidates credits based on the achievement of the Credit Grade towards Associate (ACIA) and Fellow (FCIA) membership with 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

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

Textbook Purchase Information

You may purchase the coursebook on the UofT Bookstore website.

<https://www.uoftbookstore.com/adoption-search>

The screenshot displays the UofT Bookstore interface. On the left, under the heading "Select Your Courses", there are five dropdown menus. The first menu is set to "UofT St. George", the second to "2023ESTG", the third to "ACT", the fourth to "ACT247H15", and the fifth to "Select a Section". Below these is a "Select a Section" dropdown menu with a highlighted option: "L0101 - Chan, Sophia (CRN: ACT247H15)". On the right, under the heading "Current Course List", there is a dark grey box containing the text "ACT247H15 - L0101 - CHAN, SOPHIA (CRN: ACT247H15)" with a close button (X) on the right side.