

The University of Western Ontario  
Department of Statistical and Actuarial Sciences

# AS 2427B Life Contingencies I

## Course Outline January 2019

### 1. Course Information

Course

-requisites: The former Actuarial Science 3429A/B or

receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

We will cover Chapters 1 to 5 and Chapter 6 Sections 6.1 to 6.5 of the ALMCR text including the following topics:

- x Chapter 1 Introduction to life insurance
  - o Brief introduction on the terminology and major types of life insurance, annuity and pension contracts
- x Chapter 2 Survival models
  - o Future life time random variable, survival function, force of mortality, international actuarial notation (IAN), expected complete and curtate future lifetime
- x Chapter 3 Life Tables and Selection
  - o Life tables, fractional age assumptions, life insurance, survival models, select & ultimate models, mortality trends
- x Chapter 4 Insurance Benefits
  - o IAN and EPV (& variance) calculations for various types of life insurance with different death benefit payout timing assumptions
- x Chapter 5 Life Annuities
  - o IAN and EPV (& variance) calculations for various types of life annuities that are paid at different frequency
- x Chapter 6 Premium Calculation
  - o EPV (& variance) of net future loss random variable, equivalence principle for net premium calculation

The course material supports part of the Learning Objectives/Outcomes from SOA Long Term Actuarial Mathematics Exam (LTAM) Syllabus

#### 4. Course Website Information

Students should check OWL (<http://owl.uwo.ca>) on a regular basis for lecture notes, announcements and updates. This is the primary method by which information will be disseminated to all students in the class. Students are responsible for checking OWL on a regular basis.

#### 5. Methods of Evaluation

The overall course grade will be calculated as listed below:

Quizzes (4)	20%
Test 1	15%
Test 2	15%
Final Exam	50%

## 6. Canadian Institute of Actuaries Actuarial Exam Accreditation

This course is accredited under the Canadian Institute of Actuaries (CIA) University Accreditation

You are welcome to communicate with your instructor by email, but email communication should only be used to provide them with information or ask a question that requires a brief response. For more lengthy discussions and for discussions on lectures/course material, please see your instructor during their scheduled office hours or by appointment. Students must use their Western (@uwo.ca) email addresses when contacting their instructors.

## 11. Classroom Environment

The Department has adopted a "Mutual Expectations" policy governing the classroom environment and all work submitted by students. The full text of the policy can be found at:

<http://www.uwo.ca/stats/undergraduate/mutualexpectations.html> In summary, the policy was