



Actuarial Science 327

Life Contingencies I

(see Course Descriptions for the applicable academic year: <http://www.ucalgary.ca/pubs/calendar/>)

**Main reference Text:** "Models for Quantifying Risk", by Robert Cunningham, Ph.D., FSA, Thomas N. Herzog, ASA, Ph.D., Richard L. London, FSA. The latest version of this text should be purchased. Your Professor will advise you further.

**Additional Reference Texts (NOT Required):**

"Actuarial Models for Life Contingent Risks", by Dickson, Hardy, and Waters. Cambridge.

"Actuarial Mathematics", second edition, by Bowers et.al. Society of Actuaries.

*Syllabus*

**Topics**

Chapter 5 (5.1-5.4,5.6): Survival models (including age at failure, survival function, parametric survival models, time to failure, select survival, etc., excluding multi-state model interpretation)

Chapter 6 (6.1-6.4,6.6-6.9): The life table (including basic and advanced life table functions, complete and curtate expectations, methods for fractional ages, select life tables, etc., excluding multi-state model representation)

Chapter 7 (7.1-7.5,7.7-7.8): Contingent payment models (including discrete and continuous models, varying payments, mthly payments, additional examples, etc., excluding multi-state model representation)

Chapter 8 (8.1-8.5,8.7-8.8): Contingent annuity models (including discrete and continuous models, whole life, temporary, deferred, non-level varying, and mthly annuities, excluding multi-state model representation)

Chapters 1 (Interest Theory) and 2 (Probability) are assumed background knowledge. Those chapters should be assigned as independent readings on the first day of class, but need not be reviewed in class.

The chapters listed above correspond to those in "Models for Quantifying Risk" text, 5th edition. If another text is used as the main text, the same topics should still be covered.

Time permitting, additional MLC related material from elsewhere in the text, or from other sources such as the recommended texts, may be introduced at the instructor's discretion.

It is intended that this course should cover a portion of the syllabus for that part of the professional actuarial examination concerned with Life Contingencies. Currently, this corresponds to most of the material listed from Chapters 5-8 on the syllabus for the Society of Actuaries Exam MLC – Models for Life Contingencies. This course syllabus should be updated as needed, with this objective in mind.

\* \* \* \* \*

13:1:10  
DPMS.JML