

SYLLABUS FOR STAT 486
Life Contingencies and Payment Models II
FALL 2013

Stat 486 Life contingencies II

Fall 2013

TuTh 6:00pm - 7:15pm

Room: Reavis Hall 210

Credit hours: 3

Instructor: Lei (Larry) Hua

Office: DuSable 361A

Office Hours: TuTh 1:30pm - 3:30pm, or by appt.

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1. Required textbook

- David C.M. Dickson, Mary R. Hardy, and Howard R. Waters (2009). *Actuarial Mathematics for Life Contingent Risks*, Cambridge.
- Supplementary Notes for Actuarial Mathematics for Life Contingent Risks. Download at no cost at www.soa.org/files/edu/edu-2012-spring-mlc-studynotes.pdf

2. Course description and other resources

- The Blackboard (<https://webcourses.niu.edu/>) will be used to make announcements and post supplementary materials.
- This course (and Stat 485) aims to prepare students for the SOA MLC exam. Syllabus, study materials, and other important information of the MLC exam can be found in the following website: <http://www.soa.org/education/exam-req/edu-exam-m-detail.aspx>
- The topics covered in this course (and Stat 485) are also relevant to CAS Exam 3L. From the current syllabus of CAS Exam 3L, “The CAS will grant credit for CAS Exam 3L to those who successfully complete SOA Exam MLC (Models for Life Contingencies) in the current education structure.” For details about CAS Exam 3L, please see the following website: <http://www.casact.org/admissions/syllabus/index.cfm?fa=3Lsyllabi&parentID=162>

3. Approved calculators

- The following calculators are the approved ones for SOA exams: BA-35; BA II Plus; BA II Plus Professional; TI-30Xa; TI-30X II (IIS solar or IIB battery); TI-30XS MultiView (or XB battery).
- You are expected to use one of these calculators for assignments, quizzes and exams; no any other calculators are allowed in the midterm and final exams.

4. Exams / quizzes / assignments

- The following is the schedule for the exams. The schedule cannot be changed, and alternate exam times will not be offered, so please resolve any conflicts now! Make-up exams will not be given. If there is a serious health problem that prevents you from taking an exam or if there is a death in the immediate family, contact the instructor as soon as possible. The topics to be covered in the midterms will be announced in advance. The final exam will cover the topics of the whole course.

Item	Date	Room
Midterm #1	Oct 3 (in class)	RH 210
Midterm #2	Nov 7 (in class)	RH 210
Final	Dec 10 (6:00pm -7:50pm)	RH 210

- There could be a pop quiz during each lecture, and all quizzes will be graded and the marks of the quizzes will also contribute to the final grade. There will be no make-up quizzes for any reason.
- There will be assignments. You are encouraged to study in groups for the assignments, but each student should submit his or her own homework and cannot copy others’.
- All exams will be closed book tests. You are expected to do self-evaluation through solving problems in

assignments and quizzes. Some questions for assignments and quizzes *will* also appear in the exams with slight modifications.

5. Course philosophy

- The lectures aim at motivating and explaining key concepts of the second half part of the learning objectives that are listed in the syllabus of recent professional actuarial exams: SOA MLC. However, only understanding the concepts and being able to solve problems without a time frame is not sufficient for achieving success in this course. You are expected to do lots of practice problems after class, and to be able to solve problems *accurately* and *quickly*, which is also critical for your future success in professional actuarial exams.

6. Intended learning outcomes

- Essential skills for solving problems of professional actuarial exams (second half part of the learning objectives of SOA MLC; see Bullet 2 for information about CAS Exam 3L)
- Preparedness for follow-up learning in actuarial science (eg, Pension mathematics)

7. Student assessment

- There are 1000 possible points distributed as follows:

Item	% of final grade	Points
Assignments	20	200
Quizzes	10	100
Midterm #1	20	200
Midterm #2	20	200
Final	30	300
Total	100	1000

- The following scale gives the lowest grade you can earn:

[900, 1000]	A	[700, 750)	B-	[0, 600)	F
[850, 900)	A-	[650, 700)	C+		
[800, 850)	B+	[620, 650)	C		
[750, 800)	B	[600, 620)	D		

8. Proposed Course Schedule

Number of lectures (75 mins each)	Chapters
2	Review Stat 485, Life Contingencies I
7	Ch 7, and Ch2 of Supplementary Notes (SN) – Policy values
6	Ch 8, and Ch3 of SN – Multiple state models
2	Ch 9 – Pension mathematics
2	Ch 10 – Interest rate risk
3	Ch 11 – Emerging costs for traditional life insurance
3	Ch 4 of SN – Universal life insurance
25	Total

9. Course Regulation

- Please read carefully the Academic Integrity, Attendance Policies and Accessibility Statements at http://www.niu.edu/stat/courses/pdfs/Accessibility_Statement.pdf
Your full compliance with the updated policies in this document is required in this class.
- The instructor reserves the right to amend the syllabus at any time. Changes, if any, will be announced in the class or in the Blackboard.