

INS 252/BA 830
Actuarial Science & Insurance Problems
Prof. J. Lemaire

Textbook: B. Bowers et al: Actuarial Mathematics

Course pack: Same as INSR 251

Office hours: Tuesdays, Thursdays 3:00-4:00 and by appointment
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Teaching assistant: Narumon Saardchom. Review classes, Mondays 4:30-6:00 pm
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Lesson 1:	Continuous annuities	B5.2
Jan 14		
Lesson 2	Discrete annuities	B5.3-5.4
Jan 16		
Lesson 3:	Benefit premiums, example	B6.1
Jan 21		
Lesson 4:	Fully continuous premiums	B6.2
Jan 26		
Lesson 5:	Fully discrete premiums	B6.3
Jan 28		
Lesson 6:	m-thly premiums	B6.4
Jan 30		
Lesson 7:	Fully continuous benefit reserves	B7.1-7.2
Feb 4		
Lesson 8:	Other formulas for fully continuous reserves	B7.3
Feb 6		
Lesson 9:	Fully discrete and semi-continuous benefit reserves	B7.4-7.6
Feb 11		
Lesson 10:	Fully discrete and semi-continuous benefit reserves	B7.4-7.6
Feb 13		
Lesson 11:	Benefit reserves for general insurances - Recursions	B8.1-8.3
Feb 18	Homework due: B6-2, B6-4, B6-5, B7-1, B7-6, B7-9, B7-10	
Lesson 12:	Reserves at fractional durations	B8.4
Feb 20		
Lesson 13:	Examples 8.5.1, 8.5.2	B8.5
Feb 25		
Lesson 14:	Policy options	B16.3
Feb 27		
Lesson 15:	Joint distributions of future lifetimes	B9.1-9.2
Mar 4		
Lesson 16:	Different life statuses	B9.3-9.4
Mar 6		

Lesson 17: Mar 18	Different life statuses	B9.3-9.4
Lesson 18: Mar 20	Probabilities and expectations. Insurance and annuity benefits	B9.5-9.7
Lesson 19: Mar 25	Special Mortality Laws	B9.8
	Homework due: B9-19, B9-20, B9-21, B9-22	
Lesson 20: Mar 27	Mid-term exam. You can have in class: course pack, Bowers book, your class notes, the SoA calculator (or equivalent).	
Lesson 21: Apr 1	Multiple Decrement models. Two random variables	B10.1-10.3
Lesson 22: Apr 3	Multiple Decrement models. Two random variables	B10.1-10.3
Lesson 23: Apr 8	Construction of multiple decrement tables	B10.4-10.6
Lesson 24: Apr 10	Construction of multiple decrement tables	B10.4-10.6
Lesson 25: Apr 15	Applications of multiple decrement theory Double indemnity provision	B11.1-11.2
Lesson 26: Apr 17	Valuation of pension plans-Definitions	B11.3, 11.5
Lesson 27: Apr 22	Valuation of pension plans-Examples	B11.5
Lesson 28: Apr 24	Valuation of pension plans-Examples Homework due: B10-10, B11-16, B11-18, B11-19	B11.5

Take-home project

Final grade: 50% mid-term
35% take-home project
15% assigned problems