ACTL90006 Life Insurance Models I

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
Time Commitment:	Contact Hours: A 2 hour seminar and a 1 hour workshop per week Total Time Commitment: Estimated total time commitment of 120 hours per semester
Prerequisites:	Students must have completed MAST20004 Probability and MAST20005 Statistics or equivalent.

Subject	Study Period Commencement:	Credit Points:
MAST20004 Probability	Semester 1	12.50
MAST20005 Statistics	Semester 2	12.50

Corequisites:	None
Recommended Background Knowledge:	Students should be competent in the use of Excel.
Non Allowed Subjects:	None
Core Participation Requirements:	For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry. It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: http://services.unimelb.edu.au/disability
Coordinator:	Prof David Dickson
Contact:	**dcmd@unimelb.edu.au (mailto:dcmd@unimelb.edu.au)**
Subject Overview:	Topics include survival models concepts; estimation procedures for lifetime distributions; multiple state models; multiple decrements; binomial model of mortality; actuarial applications of Markov processes; exact and census methods for estimating transition intensities based on age.
Learning Outcomes:	On successful completion of this subject a student should be able to: # Explain the concept of survival models; # Describe estimation procedures for lifetime distributions; # Define a Markov process, and apply Markov models in actuarial problems; # Describe statistical models of transfer between multiple states, including processes with single or multiple decrements, and derive relationships between probabilities of transfer and transition intensities; # Derive maximum likelihood estimators for the transition intensities in models of transfers between states with piecewise constant transition intensities; # Describe the Binomial model of mortality, derive a maximum likelihood estimator for the probability of death and compare the Binomial model with the multiple state models;

	# Describe how to estimate transition intensities depending on age, exactly or using the census approximation.
Assessment:	1000 word assignment due week 10 (10%); One hour mid-semester test due week 8 (20%); and Two hour end of semester exam (70%).
Prescribed Texts:	You will be advised of prescribed texts by your lecturer.
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	High level of development: # Written communication; # Problem solving; # Statistical reasoning; # Application of theory to practice; # Synthesis of data and other information.
Related Course(s):	Graduate Diploma in Actuarial Science Master of Actuarial Science