ACTL40003 Risk Theory II

Credit Points:	12.5
Level:	4 (Undergraduate)
Dates & Locations:	2016, Parkville This subject commences in the following study period/s: Semester 2, Parkville - Taught on campus.
Time Commitment:	Contact Hours: Three hours of lectures and/or tutorials per week Total Time Commitment: Not available
Prerequisites:	The following: **Subject** | **Study Period Commencement:** | **Credit Points:** ACTL40002 Risk Theory I | Semester 1 | 12.50
Corequisites:	None
Recommended Background Knowledge:	Please refer to Prerequisites and Corequisites.
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:	Assoc Prof Shuanming Li
Contact:	**shli@unimelb.edu.au (mailto:shli@unimelb.edu.au)**
Subject Overview:	Topics include premium principles, including variance principle, Esscher principle, risk adjusted principle; applications of utility theory, premium calculation and optimal reinsurance retention levels; reinsurance problems; ruin theory, Lundberg's inequality, explicit solutions for the probability of ultimate ruin, application of Panjer's recursion formula, the probability and severity of ruin, the effect of reinsurance on ruin probabilities.
Learning Outcomes:	# Apply relevant pre-requisite knowledge of mathematics, probability theory and statistics in the solution of a range of practical problems; # Describe the basic concepts of utility theory and apply them to insurance problems; # Explain the concepts of a premium calculation principle and show whether a premium calculation principle satisfies certain properties; # Derive Lundberg's inequality; # Describe the effect of simple reinsurance arrangements on ruin probabilities; # Derive explicit solutions for the ruin probability in the classical risk model; # Calculate approximations to ruin probabilities, explaining the rationale behind each approach.
Assessment:	A 50-minute mid-semester test (20%) and a 2-hour end-of-semester examination (80%).

Prescribed Texts:	You will be advised of prescribed texts by your lecturer.
Recommended Texts:	Information Not Available
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; interpretation and analysis.