ACTL40003 Risk Theory II

Credit Points:	12.50
Level:	4 (Undergraduate)
Dates & Locations:	2012, 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 requests for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements for this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the Disability Liaison Unit website: http://www.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, the adjustment coefficient and 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 the adjustment coefficient.
Objectives:	# 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; # Explain the significance of the adjustment coefficient in ruin theory and derive Lundberg's inequality; # Describe the effect of simple reinsurance arrangements on the adjustment coefficient; # 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.