University of Pretoria Yearbook 2017

Actuarial modelling 382 (IAS 382)

Qualification	Undergraduate
Faculty	Faculty of Natural and Agricultural Sciences
Module credits	20.00
Programmes	BCom Statistics
	BSc Actuarial and Financial Mathematics
	BSc Applied Mathematics
	BSc Mathematical Statistics
	BSc Mathematics
Service modules	Faculty of Economic and Management Sciences
Prerequisites	WST 312 60%
Contact time	1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Academic organisation	Actuarial Science
Period of presentation	Semester 2

Module content

Principles of actuarial modelling and stochastic processes. Markov chains and continuous-time Markov jump processes. Simulation of stochastic processes. Survival models and the life table. Estimating the lifetime distribution Fx(t). The Cox regression model. The two-state Markov model. The general Markov model. Binomial and Poisson models. Graduation and statistical tests. Methods of graduation. Exposed to risk. The evaluation of assurances and annuities. Premiums and reserves.