University of Pretoria Yearbook 2021

Stochastic calculus 764 (WTW 764)

Qualification	Postgraduate
Faculty	Faculty of Natural and Agricultural Sciences
Module credits	15.00
NQF Level	08
Programmes	BScHons Applied Mathematics
	BScHons Mathematics
	BScHons Mathematics and Mathematics Education Applied Analysis
	BScHons Mathematics and Mathematics Education Differential Equations and Modelling
	BScHons Mathematics and Mathematics EducationAlgebra and Analysis
	BScHons Mathematics of Finance
Prerequisites	WTW 734 or WTW 735
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 2

Module content

Mathematical modelling of Random walk. Conditional expectation and Martingales. Brownian motion and other Lévy processes. Stochastic integration. Ito's Lemma. Stochastic differential equations. Application to finance.