University of Pretoria Yearbook 2021

Mathematical models of financial engineering 762 (WTW 762)

Qualification	Postgraduate
Faculty	Faculty of Natural and Agricultural Sciences
Module credits	15.00
NQF Level	08
Programmes	BScHons Financial Engineering
	BScHons Mathematics of Finance
Prerequisites	WTW 732 or WTW 364
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

Exotic options, arbitrage relationships, Black-Scholes PDE and solutions, hedging and the Miller-Modigliani theory, static hedging, numerical methods, interest rate derivatives, BDT model, Vasicek and Hull-White models, complete markets, stochastic differential equations, equivalent Martingale measures.