UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

# 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.