



University of Pretoria Yearbook 2021

Finite element method 763 (WTW 763)

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| Qualification | Postgraduate |
| Faculty | Faculty of Natural and Agricultural Sciences |
| Module credits | 15.00 |
| NQF Level | 08 |
| Programmes | BSchHons Applied Mathematics BSchHons Financial Engineering BSchHons Mathematics BSchHons Mathematics and Mathematics Education Applied Analysis BSchHons Mathematics and Mathematics Education Differential Equations and Modelling BSchHons Mathematics and Mathematics Education Algebra and Analysis BSchHons Mathematics of Finance |
| Prerequisites | WTW 733 is strongly recommended |
| 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

An analysis as well as an implementation (including computer programs) of methods is covered. Introduction to the theory of Sobolev spaces. Variational and weak formulation of elliptic, parabolic, hyperbolic and eigenvalue problems. Finite element approximation of problems in variational form, interpolation theory in Sobolev spaces, convergence and error estimates.

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