



# University of Pretoria Yearbook 2021

## Numerical analysis 733 (WTW 733)

**Qualification** Postgraduate

**Faculty** [Faculty of Natural and Agricultural Sciences](#)

**Module credits** 15.00

**NQF Level** 08

**Programmes** [BScHons Applied Mathematics](#)

[BScHons Financial Engineering](#)

[BScHons Mathematics](#)

[BScHons Mathematics and Mathematics Education Applied Analysis](#)

[BScHons Mathematics and Mathematics Education Differential Equations and Modelling](#)

[BScHons Mathematics of Finance](#)

**Prerequisites** No prerequisites.

**Contact time** 2 lectures per week

**Language of tuition** Module is presented in English

**Department** Mathematics and Applied Mathematics

**Period of presentation** Semester 1

### Module content

An analysis as well as an implementation (including computer programs) of methods are covered. Numerical linear algebra: Direct and iterative methods for linear systems and matrix eigenvalue problems: Iterative methods for nonlinear systems of equations. Finite difference method for partial differential equations: Linear elliptic, parabolic, hyperbolic and eigenvalue problems. Introduction to nonlinear problems. Numerical stability, error estimates and convergence are dealt with.

The information published here is subject to change and may be amended after the publication of this information. The [General Regulations \(G Regulations\)](#) apply to all faculties of the University of Pretoria. It is expected of students to familiarise themselves well with these regulations as well as with the information contained in the [General Rules](#) section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.