



# University of Pretoria Yearbook 2022

## Numerical analysis 733 (WTW 733)

<b>Qualification</b>	Postgraduate
<b>Faculty</b>	<a href="#">Faculty of Natural and Agricultural Sciences</a>
<b>Module credits</b>	15.00
<b>NQF Level</b>	08
<b>Programmes</b>	<a href="#">BScHons (Applied Mathematics)</a> <a href="#">BScHons (Financial Engineering)</a> <a href="#">BScHons (Mathematics and Mathematics Education) (Applied Analysis)</a> <a href="#">BScHons (Mathematics and Mathematics Education) (Differential Equations and Modelling)</a> <a href="#">BScHons (Mathematics of Finance)</a> <a href="#">BScHons (Mathematics)</a>
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	2 lectures per week
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Mathematics and Applied Mathematics
<b>Period of presentation</b>	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.

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