

# University of Pretoria Yearbook 2017

## Numerical analysis 383 (WTW 383)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	Faculty of Natural and Agricultural Sciences
<b>Module credits</b>	18.00
<b>Programmes</b>	BCom
	BCom Statistics
	BSc Computer Science
	BSc Actuarial and Financial Mathematics
	BSc Applied Mathematics
	BSc Chemistry
	BSc Geology
	BSc Mathematical Statistics
	BSc Mathematics
	BSc Physics
<b>Service modules</b>	Faculty of Engineering, Built Environment and Information Technology
	Faculty of Economic and Management Sciences
	Faculty of Humanities
<b>Prerequisites</b>	WTW 114, WTW 124 and WTW 211
<b>Contact time</b>	2 lectures per week, 1 practical per week
<b>Language of tuition</b>	Afrikaans and English is used in one class
<b>Academic organisation</b>	Mathematics and Applied Maths
<b>Period of presentation</b>	Semester 2

### Module content

Direct methods for the numerical solution of systems of linear equations, pivoting strategies. Iterative methods for solving systems of linear equations and eigenvalue problems. Iterative methods for solving systems of nonlinear equations. Introduction to optimization. Algorithms for the considered numerical methods are derived and implemented in computer programmes. Complexity of computation is investigated. Error estimates and convergence results are proved.

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