

University of Pretoria Yearbook 2022

Numerical analysis 383 (WTW 383)

Qualification	Undergraduate
Faculty	Faculty of Natural and Agricultural Sciences
Module credits	18.00
NQF Level	07
Programmes	BCom (Statistics and Data Science)
	BCom
	BSc (Computer Science)
	BSc (Meteorology)
	BSc (Actuarial and Financial Mathematics)
	BSc (Applied Mathematics)
	BSc (Chemistry)
	BSc (Geology)
	BSc (Mathematical Statistics)
	BSc (Mathematics)
	BSc (Physics)
Service modules	Faculty of Engineering, Built Environment and Information Technology
	Faculty of Economic and Management Sciences
	Faculty of Humanities
Prerequisites	WTW 114, WTW 123 WTW 124 and WTW 211
Contact time	1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	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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