

# University of Pretoria Yearbook 2016

## Numerical methods 420 (MWN 420)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	<a href="#">Faculty of Engineering, Built Environment and Information Technology</a>
<b>Module credits</b>	16.00
<b>Programmes</b>	<a href="#">BEng Mechanical Engineering</a> <a href="#">BEng Mechanical Engineering Engage</a>
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	3 lectures per week, 1 practical per week
<b>Language of tuition</b>	English
<b>Academic organisation</b>	Mechanical and Aeronautical En
<b>Period of presentation</b>	Semester 2

### Module content

Solution of systems of linear algebraic equations. Both iterative and direct methods are treated. Solutions are applied to both small and large scale systems. Solutions of systems of nonlinear equations. Eigenvalue problems. Numerical approximation strategies. Numerical integration and differentiation. Numerical solutions to initial-value problems for ordinary differential equations, boundary-value problems for ordinary differential equations and partial-differential equations.

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