

# University of Pretoria Yearbook 2016

## Dynamical systems 382 (WTW 382)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	Faculty of Natural and Agricultural Sciences
<b>Module credits</b>	18.00
<b>Programmes</b>	BCom Statistics
	BSc Actuarial and Financial Mathematics
	BSc Applied Mathematics
	BSc Chemistry
	BSc Environmental and Engineering Geology
	BSc Environmental Sciences
	BSc Geography
	BSc Geoinformatics
	BSc Geology
	BSc Mathematical Statistics
	BSc Mathematics
	BSc Meteorology
	BSc Physics
<b>Service modules</b>	Faculty of Education
	Faculty of Economic and Management Sciences
<b>Prerequisites</b>	WTW 218 and WTW 286 or WTW 264
<b>Contact time</b>	1 tutorial per week, 2 lectures per week
<b>Language of tuition</b>	Double Medium
<b>Academic organisation</b>	Mathematics and Applied Maths
<b>Period of presentation</b>	Semester 1

### Module content

Matrix exponential function: homogeneous and non-homogeneous linear systems of differential equations.  
Qualitative analysis of systems: phase portraits, stability, linearisation, energy method and Liapunov's method.  
Introduction to chaotic systems. Application to real life problems.



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