



# University of Pretoria Yearbook 2017

## Dynamical systems 382 (WTW 382)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	<a href="#">Faculty of Natural and Agricultural Sciences</a>
<b>Module credits</b>	18.00
<b>Programmes</b>	<a href="#">BCom</a> <a href="#">BCom Statistics</a> <a href="#">BSc Actuarial and Financial Mathematics</a> <a href="#">BSc Applied Mathematics</a> <a href="#">BSc Geology</a> <a href="#">BSc Mathematical Statistics</a> <a href="#">BSc Mathematics</a> <a href="#">BSc Physics</a>
<b>Service modules</b>	<a href="#">Faculty of Education</a> <a href="#">Faculty of Economic and Management Sciences</a>
<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>	Afrikaans and English is used in one class
<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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