



University of Pretoria Yearbook 2019

Dynamical systems 382 (WTW 382)

Qualification Undergraduate

Faculty Faculty of Natural and Agricultural Sciences

Module credits 18.00

Programmes BCom

BCom Statistics

BSc Actuarial and Financial Mathematics

BSc Applied Mathematics

BSc Geology

BSc Mathematical Statistics

BSc Mathematics

BSc Physics

Service modules Faculty of Engineering, Built Environment and Information Technology

Faculty of Education

Faculty of Economic and Management Sciences

Prerequisites WTW 218 and WTW 286/264

Contact time 2 lectures per week, 1 tutorial per week

Language of tuition Afrikaans and English are used in one class

Department Mathematics and Applied Mathematics

Period of presentation 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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