

University of Pretoria Yearbook 2017

Systems thinking 780 (ISE 780)

Qualification Postgraduate

Faculty [Faculty of Engineering, Built Environment and Information Technology](#)

Module credits 16.00

Programmes [BEngHons Technology Management](#)

[BScHons Technology Management](#)

[BScHons Financial Engineering](#)

Service modules Faculty of Natural and Agricultural Sciences

Prerequisites No prerequisites.

Contact time 20 contact hours per semester

Language of tuition Module is presented in English

Academic organisation Engineering and Technology Mgt

Period of presentation Semester 1 and Semester 2

Module content

The modern world is made up of “systems”. This is evident from everyday discussions amongst even the general public. Statements such as “The system failed us”, or “The national energy system is under pressure” abound. Unfortunately most people have little or no understanding what a system is, or how to deal with it. Digging deeper into the concept of “system” leads one to realise that engineers and scientists without any working knowledge of “systems thinking” cannot succeed when attempting to solve complex problems. The module will equip students with the ability to solve problems from a “whole”, “big picture” or holistic perspective. Students will develop a range of critical skills allowing them to successfully function in a complex world made up of many interrelated systems. The module will also provide students with an overview of systems engineering resulting from systems thinking, including the requisite tools and processes. This module will challenge much about a students’ work environment, but it also will be unlike any other module a student has ever completed, mostly presented independent of any traditional engineering discipline.

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