

# University of Pretoria Yearbook 2021

## Reactor physics 784 (MUA 784)

**Qualification** Postgraduate

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

**Module credits** 16.00

**NQF Level** 08

**Programmes** [BEngHons Mechanical Engineering](#)

[BScHons Applied Science Mechanics](#)

**Prerequisites** MUA 783 Reactor engineering science 783#

**Contact time** 21 contact hours per semester

**Language of tuition** Module is presented in English

**Department** Mechanical and Aeronautical Engineering

**Period of presentation** Semester 1

### Module content

Probability concepts and nuclear cross sections, multiplication factor and neutron flux, slowing-down process in the infinite medium, diffusion theory the homogeneous one-velocity reactor, Fermi age theory: the homogeneous multi-velocity reactor, transport theory, reflected reactors, reactor kinetics, heterogeneous reactors, control-rod theory.

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