



# University of Pretoria Yearbook 2016

## Electromagnetism 310 (EMZ 310)

**Qualification** Undergraduate

**Faculty** Faculty of Engineering, Built Environment and Information Technology

**Module credits** 16.00

**Programmes** BEng Electrical Engineering

BEng Electrical Engineering Engage

BEng Electronic Engineering

BEng Electronic Engineering Engage

**Prerequisites** WTW 238GS, WTW 263GS, EIR 211/221GS

**Contact time** 3 lectures per week, 1 tutorial per week, 1 practical per week

**Language of tuition** Both Afr and Eng

**Academic organisation** Electrical, Electronic and Com

**Period of presentation** Semester 1

### Module content

Transmission line equations, wave propagation, input impedance, power flow, transients; Electrostatics, charge and current, laws of Coulomb and Gauss, scalar potential, properties of materials, boundary conditions, capacitance, Magnetostatics, laws of Biot-Savart and Ampère, magnetic properties of materials, boundary conditions; Plane wave propagation, polarisation, power density; Wave reflection and transmission, normal and oblique incidence.

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