

University of Pretoria Yearbook 2017

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	Separate classes for Afrikaans and English
Academic organisation	Electrical, Electronic and Com
Period of presentation	Semester 1

Module content

Transmission line equations, wave propagation, input impedance, power flow; 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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