

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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