



University of Pretoria Yearbook 2021

Electromagnetism 310 (EMZ 310)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
NQF Level	07
Programmes	BEng Electrical Engineering BEng Electrical Engineering ENGAGE BEng Electronic Engineering BEng Electronic Engineering ENGAGE
Prerequisites	WTW 238 GS, WTW 263 GS, EIR 211/221 GS
Contact time	1 practical per week, 1 tutorial per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Electrical, Electronic and Computer Engineering
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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