



University of Pretoria Yearbook 2017

Electromagnetism 310 (EMZ 310)

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| 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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