University of Pretoria Yearbook 2016

Radiation physics 110 (RFI 110)

Qualification	Undergraduate
Faculty	Faculty of Natural and Agricultural Sciences
Module credits	10.00
Programmes	BRad Diagnostics
Service modules	Faculty of Health Sciences
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Both Afr and Eng
Academic organisation	Physics
Period of presentation	Year

Module content

Units: converting, dimensional analysis. Mechanics: momentum, force, energy, circular motion, moment of inertia, angular momentum, simple harmonic motion. Electrostatics: Coulomb’s law, electric field, potential. Direct currents: resistors, Ohm’s law. Capacitors: capacitance, series, parallel energy. Magnetism: force on a moving charge, electric motor. Electromagnetic induction: Faraday’s law, Lenz’s Law, generators. Alternating currents: average and rms value, three phase, rectification, transformers. Electrical safety. Atomic structure: ionization, excitation. X-rays: production, absorption.