



University of Pretoria Yearbook 2022

Physics 116 (FSK 116)

Qualification Undergraduate

Faculty Faculty of Natural and Agricultural Sciences

Module credits 16.00

NQF Level 05

Programmes BEng (Mechanical Engineering)

BEng (Chemical Engineering)

BEng (Computer Engineering)

BEng (Computer Engineering) ENGAGE

BEng (Industrial Engineering)

BEng (Industrial Engineering) ENGAGE

BEng (Mechanical Engineering) ENGAGE

Service modules Faculty of Engineering, Built Environment and Information Technology

Prerequisites No prerequisites.

Contact time 1 discussion class per week, 1 practical per week, 4 lectures per week

Language of tuition Module is presented in English

Department Physics

Period of presentation Semester 1

Module content

Introductory mathematics: Symbols, exponents, logarithms, angles in degrees, radial measure, goniometry, differentiation, and integration. Motion along a straight line: position and displacement, acceleration. Vectors: adding vectors, components, multiplying vectors. Motion in two and three dimensions: projectile motion, circular motion. Force and motion: Newton's Law, force, friction. Kinetic energy and work: work, power. Potential energy: Centre of mass, linear momentum. Collisions: impulse and linear momentum, elastic collisions, inelastic collisions. Rotation: kinetic energy of rotation, torque. Oscillations and waves: Simple harmonic motion, types of waves, wavelength and frequency, interference of waves, standing waves, the Doppler effect. Temperature, heat and the first law of thermodynamics.

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