

University of Pretoria Yearbook 2017

Physics 176 (FSK 176)

Qualification Undergraduate

Faculty [Faculty of Natural and Agricultural Sciences](#)

Module credits 16.00

Programmes [BEng Chemical Engineering ENGAGE](#)

[BEng Civil Engineering](#)

[BEng Civil Engineering ENGAGE](#)

[BEng Electrical Engineering](#)

[BEng Electronic Engineering](#)

[BEng Industrial Engineering ENGAGE](#)

[BEng Metallurgical Engineering](#)

[BEng Mining Engineering](#)

[BEng Mining Engineering](#)

Service modules Faculty of Engineering, Built Environment and Information Technology

Prerequisites No prerequisites.

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

Language of tuition Separate classes for Afrikaans and English

Academic organisation Physics

Period of presentation Semester 2

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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