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
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	Separate classes for Afrikaans and English
Department	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.