



# University of Pretoria Yearbook 2019

## Physics 176 (FSK 176)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	<a href="#">Faculty of Natural and Agricultural Sciences</a>
<b>Module credits</b>	16.00
<b>Programmes</b>	<a href="#">BEng Chemical Engineering Engage</a> <a href="#">BEng Civil Engineering</a> <a href="#">BEng Civil Engineering Engage</a> <a href="#">BEng Electrical Engineering</a> <a href="#">BEng Electronic Engineering</a> <a href="#">BEng Industrial Engineering Engage</a> <a href="#">BEng Metallurgical Engineering</a> <a href="#">BEng Mining Engineering</a>
<b>Service modules</b>	Faculty of Engineering, Built Environment and Information Technology
<b>Prerequisites</b>	No prerequisites.
<b>Contact time</b>	4 lectures per week, 1 discussion class per week, 1 practical per week
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Physics
<b>Period of presentation</b>	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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