

University of Pretoria Yearbook 2021

General physics 263 (PHY 263)

Qualification Undergraduate

Faculty Faculty of Natural and Agricultural Sciences

Module credits 24.00

NQF Level 06

Programmes BEd Senior Phase and Further Education and Training Teaching

BSc Computer Science

BSc Applied Mathematics

BSc Chemistry

BSc Geology

BSc Mathematics

BSc Meteorology

BSc Physics

Service modules Faculty of Education

Prerequisites PHY 255 GS and WTW 218 GS and WTW 220# and WTW 248#

Contact time 1 practical per week, 2 discussion classes per week, 4 lectures per week

Language of tuition Module is presented in English

Department Physics

Period of presentation Semester 2

Module content

Classical mechanics (28 lectures)

Fundamental concepts, energy and angular momentum, calculus of variations and Lagrangian mechanics, conservative central forces and two body problems, scattering, mechanics in rotating reference frames, many body systems.

Physical Optics (14 lectures)

Maxwell's equations, wave equation and plane wave solution, coherence, interference, diffraction, polarisation.

Physics of Materials (14 lectures)

Classification of materials. Atomic bonding. Crystallography. Defects. Material strength.

Phase diagram's, Ceramics. Polymers. Composites. Fracture. Electrical and magnetic properties. Semiconductors. Smart materials Nanotechnology.

Experiments (14 sessions)

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