



University of Pretoria Yearbook 2023

Radiation physics 200 (RPH 200)

Qualification Undergraduate

Faculty [Faculty of Health Sciences](#)

Module credits 20.00

NQF Level 06

Programmes [Bachelor of Radiography in Diagnostics \[BRad in Diagnostics\]](#)

Prerequisites RPH 100, DIR 100, RSC 100, CDR 100

Contact time 3 lectures per week

Language of tuition Module is presented in English

Department Physics

Period of presentation Year

Module content

X-ray generation: atomic physics, thermodynamics, X-ray tubes, linear accelerators.

Image formation and recording: optics, image intensifiers, solid state physics, digital imaging display and storage systems, image quality and patient dose.

Radioactivity: nuclear nomenclature, half-life, activity, decay modes and nuclear processes, nuclide chart and decay.

Production of radioisotopes: Nuclear reactions, production facilities (cyclotrons, reactors, and accelerators).

Interactions of ionising radiation with matter: charged particles, neutrons, photons, attenuation coefficients, photo-electric Compton contribution.

Radiation Detection: detectors (Geiger, scintillation, TLD, semiconductor, ionisation chamber), counting (spectroscopy, efficiency, statistics), protection.

Dosimetry: units, exposure, dose, absorbed dose, equivalent dose, effective dose, dose limits.

Regulations and rules

The regulations and rules for the degrees published here are subject to change and may be amended after the publication of this information.

The [General Academic Regulations \(G Regulations\)](#) and [General Student Rules](#) apply to all faculties and registered students of the University, as well as all prospective students who have accepted an offer of a place at the University of Pretoria. On registering for a programme, the student bears the responsibility of ensuring that they familiarise themselves with the General Academic Regulations



applicable to their registration, as well as the relevant faculty-specific and programme-specific regulations and information as stipulated in the relevant yearbook. Ignorance concerning these regulations will not be accepted as an excuse for any transgression, or basis for an exception to any of the aforementioned regulations.

University of Pretoria Programme Qualification Mix (PQM) verification project

The higher education sector has undergone an extensive alignment to the Higher Education Qualification Sub-Framework (HEQF) across all institutions in South Africa. In order to comply with the HEQSF, all institutions are legally required to participate in a national initiative led by regulatory bodies such as the Department of Higher Education and Training (DHET), the Council on Higher Education (CHE), and the South African Qualifications Authority (SAQA). The University of Pretoria is presently engaged in an ongoing effort to align its qualifications and programmes with the HEQSF criteria. Current and prospective students should take note that changes to UP qualification and programme names, may occur as a result of the HEQSF initiative. Students are advised to contact their faculties if they have any questions.