



University of Pretoria Yearbook 2023

Diagnostic radiographic science 100 (RSC 100)

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| Qualification | Undergraduate |
| Faculty | Faculty of Health Sciences |
| Module credits | 15.00 |
| NQF Level | 05 |
| Programmes | Bachelor of Radiography in Diagnostics [BRad in Diagnostics] |
| Prerequisites | No prerequisites. |
| Contact time | 1 discussion class per week, 1 tutorial per week, 2 lectures per week |
| Language of tuition | Module is presented in English |
| Department | Radiography |
| Period of presentation | Year |

Module content

Introduction: Discovery of x-rays, processing principles, handling of x-ray equipment. x-ray beam: production of x-rays, attenuation.

Properties of X Rays: importance and influence of Bremsstrahlung and Characteristic radiation on Imaging and Dose, Electron Energy, Target Material, Influence of Filtration. X-Ray Projection Imaging Concepts: Geometry, Radiographic Contrast, Scatter and Scatter Reduction (Control of scatter radiation: production of scatter, effect of scattered radiation on the image, beam restriction devices, grids and grid efficiency), Artefacts and Image Degradation.

Radiographic Detectors: Intensifying Screen and Film (, cassettes, intensifying screens, efficiency of rare earth intensifying screens and x-ray film construction), Computed Radiography (CR), Direct Digital Radiography (DDR), Indirect Digital Radiography (IDR).

Principles of conventional and digital radiography image optimisation – Primary exposure factors: mAs, kVp and SID. AEC.(factor which influence the production and recording of images); Principles of technique charts
Conventional Image processing: darkrooms Image Representations: Contrast, Spatial Resolution, Noise, Temporal Resolution, Sampling and Quantization

Introduction to quality assurance in radiographic imaging. Introduction to radiation protection for patient, personnel and public- radiation units, detection and measurement, radiation dose equipment and area survey. Regulations and operation of radiation equipment. Introduction to digital imaging system.

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.