

NATIONAL DIPLOMA: RADIOGRAPHY: DIAGNOSTIC

Qualification code: NDRG96 - NQF Level 6

Campus where offered: Arcadia Campus

Important notification to new applicants:

No new applications will be accepted as from 2020. Students who enrolled for this qualification for the first time in 2017 (or thereafter), should note that it will not be possible to continue with any Baccalaureus Technologiae as from 2020, since it is being replaced by qualifications aligned with the newly-implemented Higher Education Qualification Sub-Framework. Potential students are advised to consult the University's website for any new qualifications which might not be published in this Prospectus.

REMARKS

a. *Admission requirement(s) and selection criteria:*

• **FOR APPLICANTS WHO OBTAINED A SENIOR CERTIFICATE BEFORE 2008:**

Admission requirement(s):

A Senior Certificate or an equivalent qualification, with a D symbol at Standard Grade or an E symbol at Higher Grade for English, Mathematics, Physical Science and Biology or Physiology.

Selection criteria:

Prospective students will be selected for admission based on their performance in the Senior Certificate (40%), a TUT potential assessment (40%), and an interview (20%) with a departmental selection panel. The weight of each process is given in brackets.

• **FOR APPLICANTS WHO OBTAINED A NATIONAL SENIOR CERTIFICATE IN OR AFTER 2008:**

Admission requirement(s):

A National Senior Certificate with a bachelor's degree or a diploma endorsement, or an equivalent qualification, with an achievement level of at least 4 for English (home language or first additional language), 4 for Life Sciences, 4 for Mathematics and 4 for Physical Sciences.

Selection criteria:

To be considered for this qualification, applicants must have an Admission Point Score (APS) of at least 22.

Assessment procedures:

Applicants with a score of 22 and more will be invited to do the TUT potential assessment and an interview. The APS will contribute 60% to the final admission score. The potential assessment and the interview will contribute 40%.

b. *Minimum duration:*

Three years.

c. *Presentation:*

Day classes.

d. *Intake for the qualification:*

January only.

e. *Exclusion and readmission:*

See Chapter 2 of Students' Rules and Regulations.

f. *Recognition of Prior Learning (RPL), equivalence and status:*

See Chapter 30 of Students' Rules and Regulations.



- g. *Professional registration:*
Compulsory once-off registration with the Health Professions Council of South Africa (HPCSA) as a student radiographer.
- h. *Workplace learning:*
Compulsory cooperative learning over three years at HPCSA-accredited clinical training facilities.
- i. *Certificates:*
A compulsory first-aid programme and a compulsory computer programme are offered at the University in the first year of study.
- j. *Additional expenses:*
- Computer skills course: approximately R200 for the first year of study.
 - Prescribed textbooks: approximately R8 000 per annum.
 - Radiography student society fee: approximately R200.
 - Required uniforms: approximately R1 500.
 - Social event for first years: approximately R100.
- k. *Other requirements:*
Immunisation against Hepatitis B at own cost is compulsory. Students are required to travel at their own cost to the clinical training facilities according to the scheduled clinical hours, which may include after-hours training.
- l. *Special qualification rules:*
Special rules apply for this qualification. Students who register for it will receive the rules when they report to the Department. It is the responsibility of students to familiarise themselves with the rules.
- m. *Community service:*
As stipulated by the National Department of Health, students must render compulsory community service (twelve months) on completion of the basic learning programme (three years).
- n. *Subject credits:*
Subject credits are shown in brackets after each subject.

CURRICULUM

SUBJECTS PRINTED IN BOLD ARE NOT FOR REGISTRATION PURPOSES.

FIRST YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
ANA100T	Anatomy I	(0,150)	
CRP100T	Clinical Radiographic Practice I	(0,200)	
PPM100T	Psycho-Dynamics of Patient Management I	(0,100)	
PSO100B	Physiology I	(0,150)	
RPR100T	Radiographic Practice I	(0,200)	
RSC100T	Radiation Science I		
RSC10PT	Radiation Science: Physics and Chemistry I	(0,100)	
RSC10QT	Radiation Science: Image Recording I	(0,100)	
TOTAL CREDITS FOR THE FIRST YEAR:		1,000	



SECOND YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
CRP200T	Clinical Radiographic Practice II(D)	(0,200)	Clinical Radiographic Practice I Radiographic Practice I
RGP200T	Radiographic Pathology II	(0,200)	Anatomy I Physiology I
RPR200T	Radiographic Practice II	(0,250)	Clinical Radiographic Practice I Radiographic Practice I
RSC220T	Radiation Science II		
RSC22PT	Radiation Science: Radiation Physics and Protection and Equipment II	(0,175)	Radiation Science I
RSC22QT	Radiation Science: Image Recording, Ultrasound and Radiobiology II	(0,175)	Radiation Science I
TOTAL CREDITS FOR THE SECOND YEAR:		1,000	

THIRD YEAR

CODE	SUBJECT	CREDIT	PREREQUISITE SUBJECT(S)
CRP300T	Clinical Radiographic Practice III(D)	(0,300)	Clinical Radiographic Practice II(D) Radiographic Practice II
RGM300T	Radiographic Management III(D)	(0,100)	Clinical Radiographic Practice II(D) Radiographic Practice II
RPR300T	Radiographic Practice III(D)	(0,350)	Clinical Radiographic Practice II(D) Radiographic Practice II
RSC300T	Radiation Science III(D)		
RSC30PT	Radiation Science: Specialised Equipment III(D)	(0,125)	Radiation Science II
RSC30QT	Radiation Science: Image Recording III(D)	(0,125)	Radiation Science II
TOTAL CREDITS FOR THE THIRD YEAR:		1,000	
TOTAL CREDITS FOR THE QUALIFICATION:		3,000	

SUBJECT INFORMATION (OVERVIEW OF SYLLABUS)

The syllabus content is subject to change to accommodate industry changes. Please note that a more detailed syllabus is available at the Department or in the study guide that is applicable to a particular subject. On 01 August 2018, the syllabus content was defined as follows:

A

ANATOMY I (ANA100T)

1 X 3-HOUR PAPER

(Subject custodian: Department of Biomedical Sciences)

An integrated study of the human body systems. (Total tuition time: ± 153 hours)

C

CLINICAL RADIOGRAPHIC PRACTICE I (CRP100T)

PRACTICAL EXAMINATION

(Subject custodian: Department of Biomedical Sciences)

Application of Radiographic Practice I in the imaging department. Work-integrated learning and continuous clinical assessment are conducted in Health Professions Council of South Africa (HPCSA), approved clinical settings. (Total tuition time: ± 204 hours, continuous)



CLINICAL RADIOGRAPHIC PRACTICE II(D) (CRP200T)
(Subject custodian: Department of Biomedical Sciences)

PRACTICAL EXAMINATION

Application of Radiographic Practice II in the imaging department. Work-integrated learning and continuous clinical assessment are conducted in Health Professions Council of South Africa (HPCSA), approved clinical settings. (Total tuition time: ± 117 hours, continuous)

CLINICAL RADIOGRAPHIC PRACTICE III(D) (CRP300T)
(Subject custodian: Department of Biomedical Sciences)

PRACTICAL EXAMINATION

Application of Radiographic Practice III in the imaging department. Work-integrated learning and continuous clinical assessment are conducted in Health Professions Council of South Africa (HPCSA), approved clinical settings. (Total tuition time: ± 224 hours, continuous)

P

PHYSIOLOGY I (PSO100B)

1 X 3-HOUR PAPER

(Subject custodian: Department of Biomedical Sciences)

Introduction to homeostasis. Cytology (cell membrane, membrane transport mechanisms, organelles). Nervous system (neural tissue, action potentials, synapses, neurotransmitters, spinal cord functions, brain area functions, cranial and spinal nerves, cerebrospinal fluid). Sensory system (sensory concepts, skin-based receptors, pain perception, gustation, olfaction, hearing, equilibrium, vision). Endocrinology (hypothalamus, pituitary gland, thyroid gland, parathyroid glands, adrenal cortex, adrenal medulla, pancreas, bone growth, ossification mechanisms, healing of fractures). Male reproductive system (spermatogenesis, hormonal control). Female reproductive system (oogenesis, menstrual cycle, fertilisation, implantation, hormonal changes during pregnancy, menopause). Cardiovascular system (cardiac conduction system, chronotropic effects, vascular blood flow, blood pressure, physiological shock, lymph flow, hemopoiesis, ABO blood groups, hemostasis). Immunology (inflammation, lymphocytes). Respiratory system (ventilation, external respiration, gaseous transport, internal respiration, neural control of ventilation). Urinary system (renal circulation, urine formation, water balance, micturition). Digestive system (gastrointestinal tract wall, digestion and absorption of nutrients). (Total tuition time: ± 100 hours)

PSYCHO-DYNAMICS OF PATIENT MANAGEMENT I (PPM100T)

1 X 3-HOUR PAPER

(Subject custodian: Department of Biomedical Sciences)

Professionalism, ethics, developmental psychology and applied psychology. (Total tuition time: ± 102 hours)

R

RADIATION SCIENCE: IMAGE RECORDING I (RSC10QT)

1 X 3-HOUR PAPER

(Subject custodian: Department of Biomedical Sciences)

Basic theory of the facets of the imaging process in a conventional and digital radiographic environment. (Total tuition time: ± 102 hours)

RADIATION SCIENCE: IMAGE RECORDING III(D) (RSC30QT)

1 X 3-HOUR PAPER

(Subject custodian: Department of Biomedical Sciences)

More advanced theory and practice of image recording and its application to diagnostic radiography, such as duplication, photographic subtraction, macroradiography, quality assurance, fluoroscopy, photofluorography, digital radiography, wet and dry laser printer. (Total tuition time: ± 94 hours)

RADIATION SCIENCE: IMAGE RECORDING, ULTRASOUND AND RADIOBIOLOGY II (RSC22QT)

2 X 3-HOUR PAPER

(Subject custodian: Department of Biomedical Sciences)

More advanced theory and practice of image recording in diagnostic radiography, such as sensitometry, luminescence exposure factors. Basic principles of ultrasound and the introduction to radiobiology. (Total tuition time: ± 155 hours)

RADIATION SCIENCE: PHYSICS AND CHEMISTRY I (RSC10PT)

1 X 3-HOUR PAPER

(Subject custodian: Department of Physics)

Principles of mechanics, heat, optics and electricity that form a basis for Radiation Science II and Radiation Science III(D). Basic introduction to chemistry and concepts of the structure of matter. (Total tuition time: ± 102 hours)



RADIATION SCIENCE: RADIATION PHYSICS AND PROTECTION AND EQUIPMENT II (RSC22PT)

2 X 3-HOUR PAPER

(Subject custodian: Department of Physics)

Electricity supply to X-ray machines, X-ray tube designs, including X-ray circuitry and imaging components. The atomic structure and electromagnetic rays. The excitation of X-rays, attenuation and interaction of radiation with matter, radiation risks and radiation protection in all X-ray departments. (Total tuition time: ± 155 hours)

RADIATION SCIENCE: SPECIALISED EQUIPMENT III(D) (RSC30PT)

1 X 3-HOUR PAPER

(Subject custodian: Department of Physics)

Specialised X-ray tubes and utility purposes. Specialised equipment for dentistry, mammography, fluoroscopic, tomographic, magnetic resonance imaging. Digital equipment as applicable to conventional radiography and tomography. Principles of quality control. (Total tuition time: ± 94 hours)

RADIOGRAPHIC MANAGEMENT III(D) (RGM300T)

1 X 3-HOUR PAPER

(Subject custodian: Department of Management and Entrepreneurship)

The principles of management and administration of a diagnostic imaging department, stock control and planning. Basic managerial skills and techniques. (Total tuition time: ± 75 hours)

RADIOGRAPHIC PATHOLOGY II (RGP200T)

1 X 3-HOUR PAPER

(Subject custodian: Department of Biomedical Sciences)

A study of disease processes in the different body systems, with special emphasis on the radiographic appearance of diseases. (Total tuition time: ± 177 hours)

RADIOGRAPHIC PRACTICE I (RPR100T)

1 X 3-HOUR PAPER

(Subject custodian: Department of Biomedical Sciences)

Basic principles of diagnostic radiographic technique, including routine projections of structures of the body. Introduction to radiation oncology, nuclear medicine and ultrasound. The general responsibility of a radiographer towards the patient. (Total tuition time: ± 204 hours)

RADIOGRAPHIC PRACTICE II (RPR200T)

1 X 3-HOUR PAPER

(Subject custodian: Department of Biomedical Sciences)

Specialised radiographic technique for the demonstration of specific anatomical structures and pathology, including fluoroscopic technique as well as adaptations for emergency patients. (Total tuition time: ± 221 hours)

RADIOGRAPHIC PRACTICE III(D) (RPR300T)

1 X 3-HOUR PAPER

(Subject custodian: Department of Biomedical Sciences)

Advanced integrated radiographic technique, including specialised imaging modalities, procedures and application of basic pattern recognition skills. (Total tuition time: ± 262 hours)

