No. 452 **8 May 2009**

SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)

In accordance with Regulation 24(c) of the National Standards Bodies Regulations of 28 March 1998, the Task Team for

Radiography and Clinical Technology

registered by Organising Field 09 – Health Sciences and Social Services, publishes the following Qualifications for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the Qualifications. The full Qualifications can be accessed via the SAQA web-site at **www.saqa.org.za**. Copies may also be obtained from the Directorate of Standards Setting and Development at the SAQA offices, SAQA House, 1067 Arcadia Street, Hatfield, Pretoria.

Comment on the Qualifications should reach SAQA at the address below and ***no later than 9 June 2009.*** All correspondence should be marked **Standards Setting – Task Team for Radiography and Clinical Technology** and addressed to

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ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:
Bachelor: Nuclear Medicine Technology

SAQA QUAL ID	***QUALIFICATION TITLE***		
66950	Bachelor: Nuclear Medicine Technology		
ORIGINATOR		***PROVIDER***	
TT - Radiography and Clinical Technology			
QUALIFICATION TYPE	***FIELD***	***SUBFIELD***	
Professional Qualification	9 - Health Sciences and Social Services	Curative Health	
ABET BAND	***MINIMUM CREDITS***	***NQF LEVEL***	***QUAL CLASS***
Undefined	480	Level 7	Regular-ELOAC

This qualification does not replace any other qualification and is not replaced by another qualification.

PURPOSE AND RATIONALE OF THE QUALIFICATION
Purpose:

The purpose of this Qualification is to develop a professional Radiographer who will specialise in the field of Nuclear Medicine. This qualification will enable the qualified specialist to work in the public or private health care sectors or operate as an independent practitioner.

This Qualification enables the learner to competently apply an integration of theory, principles, proven techniques, practical experience and appropriate skills to the solution of well-defined and abstract problems in the selected field of Nuclear Medicine. It aims at ensuring reflective practice and life-long learning in the profession, thereby benefiting the community and society. This will be achieved by the learner meeting the following outcomes:

- Providing holistic patient care within the nuclear medicine environment.
- Performing a range of nuclear medicine imaging procedures for purposes of diagnosis and treatment.
- Operating and ensuring quality function of nuclear medicine instrumentation.
- Dispensing and administering radiopharmaceuticals.
- Performing in-vitro and non-imaging nuclear medicine procedures.
- Assuring the quality of nuclear medicine service provided.

Skills in management and research will also be developed allowing the holder of this Qualification to work independently and in a supervisory capacity within a health care team.

Successful completion of this Qualification will enable the graduate to be registered by the relevant Professional Health Council.

Rationale:

Healthcare is set to change in the future from the curative paradigm of the 20th century to a pre-emptive model. Imaging is central to this model and will drive that change to the benefit of the patient. Medical imaging in general plays a key role in understanding complex biological systems and Nuclear Medicine in particular is relevant in tracking changes at a molecular, cellular and organ tissue level. Nuclear Medicine is currently experiencing an expansive growth phase with the advent of Positron Emission Technology (PET)/Computerised tomography (CT)

imaging technology. PET/CT is an invaluable tool in the area of oncology, and is set to be very promising in the areas of neurology and cardiology.

Nuclear Medicine Radiographers are part of an integral team comprising; Nuclear Medicine Physicians, Medical Physicists, Radiopharmacists and Nursing staff who are responsible, in general, for delivering a nuclear medicine service. In particular the Nuclear Medicine Radiographer is responsible for performing the Nuclear Medicine investigation in toto, from preparation and administration of the radiopharmaceutical, to imaging the patient and finally to processing the data acquired. The qualified Nuclear Medicine Radiographer needs to display expertise in the many and varied Nuclear Medicine investigations; predominantly in vivo investigations but also non-imaging (in vitro) and to a lesser extent therapeutic investigations.

Nuclear Medicine facilities in South Africa are located mainly in high population areas both in the public and private sectors. Registration to practice as a Radiographer in the category; nuclear medicine is through the HPCSA.

This Qualification is recognised by the Statutory Health Council as a requirement for registration to practise in the field of Nuclear Medicine Technology. Achievement of this qualification should provide the learner with direct access to a Master's degree.

The Qualification is necessary for employment in both the public and the private sector as part of a team providing a holistic health care service in general and a nuclear medicine service in particular.

The exit level outcomes for this degree describe the foundational, practical and reflexive competencies, which together constitute the applied competence required of Nuclear Medicine Radiographer at this level.

RECOGNIZE PREVIOUS LEARNING?
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LEARNING ASSUMED IN PLACE
- Mathematics at NQF Level 4.
- Communication at NQF Level 4.
- Science at NQF Level 4.
- Biology at NQF Level 4.

Computer Literacy at NQF Level 3 is strongly recommended.

Recognition of Prior Learning:

This Qualification may be achieved in part through the recognition of relevant prior learning and through prior experience as a practitioner in another field of Radiography. Providers are required to develop structured and accredited means of the assessment of individual learners against exit-level outcomes of the qualification on a case-by-case basis. Recognition of prior learning will be conducted in accordance with the institutions' accredited RPL policy and the agreement of the relevant ETQA. Such procedures and the assessment of individual cases are subject to moderation by independent assessors.

Access to the Qualification:

Access to the qualification is open to learners in possession of a Senior Certificate or equivalent NQF Level 4 qualifications and who meet the entry requirements of the institution offering the Qualification, as well as the specifications of the relevant Statutory Health Council.

QUALIFICATION RULES

Fundamental and Core Component:

Exit Level Outcomes 1 to 7 constitute the Fundamental and Core Components of the Qualification and together total 440 credits. They are compulsory for all learners.

The allocation of credits to each Exit Level Outcome can be done by the individual institutions offering the qualification on condition such allocation meets the minimum number of credits for each Exit Level Outcome as stipulated by the relevant Health Council in its curriculum guidelines.

Elective Component:

The Elective Component consists of two parts:

The research Exit Level Outcome (Outcome 8) in which learners may choose any aspect or topic in the field which is relevant to them and for which they are required to produce the outcomes of their research in a manner, format and to a standard acceptable to the institution offering the Qualification (40 credits minimum).

The application of theoretical knowledge and skills in one of the chosen fields as listed below:
- Small and Medium Business Enterprises.
- Paediatric Nuclear Medicine.
- Advanced practice in hybrid imaging systems i.e. PET/CT and PET/MRI.
- Therapeutic use of radionuclides.
- Radioimmunoassays.
- Medical law and bioethics.
- Education in health.

This may be assessed in an integrated way with Exit Level Outcomes 1 to 7 or be incorporated into the research project (Exit Level Outcome 8).

EXIT LEVEL OUTCOMES

1. Apply principles of human rights, ethics and relevant medical law to ensure the well-being of the patient.

2. Perform a range of conventional and specialised nuclear medicine imaging procedures in order to facilitate diagnosis and treatment of the patient.

3. Operate and ensure quality functioning of all nuclear medicine instrumentation to provide the best diagnostic capability of the instruments.

4. Function in a type 'B' radiopharmacy laboratory to safely dispense radiopharmaceuticals for nuclear medicine imaging procedures.

5. Perform a range of in vitro and in vivo non-imaging nuclear medicine procedures in a type 'C' radiopharmacy laboratory.

6. Assure quality of all aspects of a Nuclear Medicine investigation and the service provided.

7. Plan, develop and apply total quality management appropriate to the nuclear medicine context.

8. Demonstrate research skills and foster a research climate in nuclear medicine.

9. Apply the principles, specific knowledge, skills and values related to the chosen elective subject.

Range of possible electives:

- Small and Medium Business Enterprises.
- Paediatric Nuclear Medicine.
- Advanced practice in hybrid imaging systems i.e. PET/CT and PET/MRI.
- Therapeutic use of radionuclides.
- Radioimmunoassays.
- Medical law and bioethics.
- Education in health.

Critical Cross-Field Outcomes:

The qualification promotes the critical cross-field outcomes in the following manner:

- Identify health problems in the context of nuclear medicine and suggest and implement a solution or plan of action in order to solve the problem professionally.
- Perform professional duties with confidence in collaboration with other health care professionals and where appropriate assume leadership in tasks or projects all in view to assuring that quality to minimise the risks associated with adverse reactions and radiation accidents for the protection of both patients and the public.
- Keep up with the current trends and changing needs of a nuclear medicine service on a regional, national and international level in relation to both the radiopharmacy legislation and work practices to ensure an efficient functioning and administration of the type 'C' laboratory.
- Contribute towards and facilitate continuing professional development of nuclear medicine staff with the view of ensuring that nuclear medicine equipment and accessories are competently operated in order to provide the best diagnostic capability of the equipment.
- Communicate effectively in the learning and health care environment to ensure that the patients' needs are recognised, assessed and responded to with due regard to human dignity.
- Reflect on and explore a variety of strategies in order to improve nuclear medicine practice by participating in the social, political and academic debate about what research is and how it should be conducted in nuclear medicine technology.
- Demonstrate understanding of nuclear medicine principles in order to solve practical problems within the nuclear medicine context through the application of research methods for nuclear medicine procedures.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria for Exit Level outcome 1:

1.1 Patients physical and psychological needs are recognised, assessed and responded to with due regard for human dignity.
1.2 Patient' rights as a member of society are acknowledged and adhered to according to the Human Rights Bill and Patient Charter.
1.3 Communication is effective and appropriate with both the patient and other members of the health care team in a multicultural context with due regard for human dignity and patient confidentiality.
1.4 Appropriate nursing skills and the ability to act in an emergency and apply first aid are demonstrated during patient intervention.

Associated Assessment Criteria for Exit Level outcome 2:

2.1 Knowledge and skills related to the theoretical, clinical and technical practices and principles of nuclear medicine technology are applied in order to perform, develop protocols and apply research methods for nuclear medicine procedures.
2.2 Comprehensive knowledge of human anatomy, cross-sectional anatomy, physiology, biological processes at a molecular level and related pathophysiology is applied in order to