

Government Gazette Staatskoerant

REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID-AFRIKA

Vol. 522

Pretoria, 29 December 2008
Desember

No. 31743

CONTENTS

<i>No.</i>	<i>Page No.</i>	<i>Gazette No.</i>
------------	---------------------	------------------------

GOVERNMENT NOTICES**South African Qualifications Authority***Government Notices*

1399	National Standards Bodies Regulations: Standards Generating Body (SGB) for Mining and Minerals.....	3	31743
1400	do.: Standards Generating Body (SGB) for Maritime Defence.....	34	31743
1401	do.: Task Team for Radiography and Clinical Technology	62	31743

GOVERNMENT NOTICES

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

No. 1399

29 December 2008

**SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)**

In accordance with Regulation 24(c) of the National Standards Bodies Regulations of 28 March 1998, the Standards Generating Body (SGB) for

Mining and Minerals

registered by Organising Field 06 – Manufacturing, Engineering and Technology, publishes the following Qualification and Unit Standards for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the Qualification and Unit Standards. The full Qualification and Unit Standards can be accessed via the SAQA web-site at www.saqqa.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 Qualification and Unit Standards should reach SAQA at the address below and **no later than 29 January 2009**. All correspondence should be marked **Standards Setting – SGB for Mining and Minerals** and addressed to

The Director: Standards Setting and Development
SAQA

Attention: Mr. E. Brown

Postnet Suite 248

Private Bag X06

Waterkloof

0145

or faxed to 012 – 431-5144

e-mail: ebrown@saqa.org.za

D. MPHUTHING

ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:**Further Education and Training Certificate: Minerals Processing**

SAQA QUAL ID	QUALIFICATION TITLE		
64889	Further Education and Training Certificate: Minerals Processing		
ORIGINATOR			PROVIDER
SGB Mining and Minerals			
QUALIFICATION TYPE	FIELD	SUBFIELD	
Further Ed and Training Cert	6 - Manufacturing, Engineering and Technology	Fabrication and Extraction	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	137	Level 4	Regular-Unit Stds Based

This qualification replaces:

Qual ID	Qualification Title	NQF Level	Min Credits	Replacement Status
49049	Further Education and Training Certificate: Lump Ore Beneficiation	Level 4	166	Will occur as soon as 64889 is registered

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

This qualification is intended to address the training needs for metallurgical process controllers. This competence provides the skills needed to supervise and coordinate significant processes within metallurgical operations. It also provides the basis upon which further related learning and career development can take place.

Through the employment of competent operating personnel, employers and in turn the field and sub-field have confidence that this critical work in the industry is efficiently carried out.

Social development and economic transformation are enhanced through efficient extraction, and career development and personal job satisfaction of operating personnel are facilitated through the learning process used to achieve the competency specified.

Learners credited with this qualification will be able to:

- > Communicate and solve problems in Mineral Processing.
- > Maintain Occupational Health, Safety and general housekeeping.
- > Lead a team to work co-operatively to achieve objectives.
- > Control metallurgical operations from a control room.

Rationale:

"Minerals Processing" in this context refers to the extraction of valuable minerals contained in mined ore and the production of related products, or enriched concentrates, for further processing or sale. Processes employed in the recovery of gold, platinum, uranium, base metals, coal, iron ore, diamonds, manganese etc. are provided for in this qualification. Recovery rates and cost implications relating to minerals extraction processes must be optimised to

ensure the ongoing viability of the producer. Obtaining this qualification will equip learners to supervise and coordinate the Mineral processing operation in achieving this goal.

End products of these processes are metals or metal compounds that can be used in a wide variety of applications, for example:

- > Gold used for jewellery, currency, electronic components, dentistry.
- > Uranium used for nuclear power stations fuel, nuclear powered ships and submarines, and isotopes for instrumentation.
- > Base metals like copper and aluminium for conductors, zinc for anti-corrosion coatings, cobalt for paint, and lead for battery poles.
- > Platinum group metals for jewellery and catalysts.
- > Mineral sand products (titanium etc.) for steel hardening, paint pigments and special alloys.
- > Lump Ore Beneficiation done to increase grade of the ore in order to minimise the cost of subsequent transport and further processing.

Production of these commodities is of tremendous benefit to the economy, as well as society, by way of local and foreign investments and sale of products.

Typical learners are operating personnel working in a metallurgical plant. A learner achieving this qualification will be qualified to monitor and control a mineral processing plant.

This is the third qualification in the learning pathway for Mineral Processing. A learner would proceed from this qualification to a National Diploma or Degree in Extraction Metallurgy or Chemical engineering.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED IN PLACE

Communication and Mathematical Literacy at NQF Level 3.

Recognition of Prior Learning:

This qualification can be achieved wholly or in part through recognition of prior learning.

Evidence can be presented in a variety of forms, including international or previous local qualifications, reports, testimonials mentioning functions performed, work records, portfolios, videos of practice and performance records.

Access to the Qualification:

Access is open, however it is preferable that learners have completed the National Certificate in Minerals Processing, NQF Level 3.

QUALIFICATION RULES

Fundamental Component:

- > All unit standards totalling 56 credits are compulsory.

Core Component:

- > All 37 credits are compulsory.

Elective Component:

> A minimum of 44 credits must be obtained from the rest of the electives to make up a minimum of 137 credits for the qualification.

EXIT LEVEL OUTCOMES

Range:

- > Workplace refers to the Minerals Processing environment.
- > Minerals processing refers to the processing of Gold, Uranium, Base metals, Platinum, Minerals Sands and Lump Ore.
- > Metallurgical Operations include Milling- and Classifications, Leaching, Elution, Carbon adsorption, Froth flotation, Thickening, dense medium separation, de-watering, resin adsorption, Uranium recovery, Crushing etc.

1. Communicate and solve problems in the workplace.
2. Maintain Occupational Health, Safety and general housekeeping.
3. Lead a team to work co-operatively to achieve objectives.
4. Control metallurgical operations from a control room.

Critical Cross field Outcomes:

The Critical Cross-Field Outcomes are addressed in the qualification as follows:

While overseeing mineral process operations, qualifying learners are able to:

Identify and solve problems in which responses display that responsible decisions using critical thinking have been made:

- > Monitor and control plant, equipment and processes in a minerals processing environment in terms of physical condition and operation.
- > Monitor plant and control equipment and processes in a minerals processing environment in terms of compliance with operational procedures and quality assurance requirements.
- > Respond to non-conformances in a minerals processing environment.
- > Respond to emergencies in a minerals processing environment (plant, buildings, process).
- > Apply preventative or remedial action in accordance with operating procedures.

Work effectively with others as a member of a team, group, organisation or community by:

- > Contribute to team goals and achievements by adhering to agreed working methods and processes.
- > Contribute to team efficiency by supporting other team members in the minerals processing environment.
- > Adhere to team protocols, codes of conduct and generally promoting a positive team spirit.
- > Coordinate one's work with that of others in the direct surrounding area, internal and external operations.

Organise and manage oneself and one's activities responsibly and effectively by:

- > Conduct shift take-over and hand-over activities effectively in order to ensure typical continuous operations in a minerals processing plant.
- > Apply operating instructions to control and respond to process plant conditions.
- > Take preventive and remedial action to solve operating problems in a process plant.
- > Maintain product quality by adhering to quality assurance requirement in a minerals processing environment.

Collect, analyse, organise and critically evaluate information by:

- > Monitor operational parameters in a minerals processing environment.
- > Collate and sort quality assurance data.
- > Monitor and interpret quality assurance data against the requirements.
- > Manage records, reports and stock.

Communicate effectively by using mathematical and/or language skills in the modes of oral and/or written presentations by:

- > Interpret, record and report minerals processing plant data obtained from visual inspections, instrument readings and process control feedback.
- > Complete reports, log sheets, shift handover activities and other process control activities effectively, ensuring that all other team members are aware of critical information.
- > Prepare and submit reports, non-conformance reports and other required documentation.
- > Work with modern communications technology such as computer messaging, cellular phones and radio systems in a process control environment.

Use science and technology effectively and critically, showing responsibility towards the environment and health of others by:

- > Work according to health and safety regulations.
- > Use relevant terminology and adhere to standard protocols such as SI, ISO and other standards applicable in the minerals processing environment.
- > Control technologically advanced production equipment according to operating procedures.
- > Work and interpret technologically advanced instrumentation and computer systems.

Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation by:

- > Understand the impact of upstream, downstream and parallel minerals processing systems upon each other and his own role in each context.
- > Request assistance from other team members and support personnel.
- > Assist other team members and work together with support personnel to investigate and resolve problem areas.
- > Adjust equipment and machinery while taking cognizance of the impact on other processes.

ASSOCIATED ASSESSMENT CRITERIA

Range:

- > Workplace refers to the Minerals Processing environment.
- > Minerals processing refers to the processing of Gold, Uranium, Base metals, Platinum, Minerals Sands and Lump Ore.
- > Metallurgical Operations include Milling- and Classifications, Leaching, Elution, Carbon adsorption, Froth flotation, Thickening, dense medium separation, de-watering, resin adsorption, Uranium recovery, Crushing etc.

Associated Assessment Criteria for Exit Level Outcome 1:

- 1.1 Oral and written communication is maintained and adapted as required to promote effective interaction in a metallurgical plant.
- 1.2. Mathematical principles are applied while performing the tasks related to mineral processing.
- 1.3. Process problems are resolved and recorded in accordance with set standards.
- 1.4. Time and the work processes are managed to achieve effective control of the different operations within a metallurgical plant.

Associated Assessment Criteria for Exit Level Outcome 2:

- 2.1. Procedures, material requirements and methodologies are employed in compliance with the prescribed Occupational Safety, Health and Environmental standards.
- 2.2. Plant safety, quality and efficiency maintained at optimal levels in accordance with organisational standards.
- 2.3. Mechanisms for minimising of Occupational Health, Safety and Environmental impacts and risks, as specified in current legislation, are ensured to be in place in place.

Associated Assessment Criteria for Exit Level Outcome 3:

- 3.1. The principles of leadership are explained and applied within a work unit.
- 3.2. The budgeting function within a business unit is explained, planned and applied in accordance with set parameters.
- 3.3. The organisation's objectives and Standard Operating Procedures (SOPs) are analysed in order to determine the direction of work units.
- 3.4. Knowledge of group dynamics is applied to build a team.

Associated Assessment Criteria for Exit Level Outcome 4:

- 4.1. Knowledge of controlling and operating a metallurgical plant from a control room is demonstrated in accordance with standard operating practices.
- 4.2. Metallurgical processes are monitored and controlled using various automated methods.
- 4.3. The impact of all processes and material variables on the specific metallurgical operation is integrated as required.
- 4.4. Corrective action is taken to maintain product quality and process integrity.
- 4.5. Production results and deviations are reported and logged on a continual basis according to data logging requirements.

Integrated Assessment:

Integrated assessment at the level of the qualification provides an opportunity for learners to show they are able to integrate concepts, actions and ideas achieved across a range of unit standards and contexts.

Integrated assessment must evaluate the quality of observable performance as well as the thinking behind the performance, and must be based on a summative assessment guide. The guide will spell out how the assessor will assess different aspects of the performance and will include:

- > Observing the learner at work (both in the primary activity as well as other interactions).
- > Asking questions and initiating short discussions to test understanding.
- > Looking at records and reports in the portfolio and reviewing previous assessments.

In some cases inference will be necessary to determine competence depending on the nature and context within which performance takes place.

It is necessary to ensure that the fundamental part of the qualification is also targeted to ensure that while the competence may have been achieved in a particular context, learners are able to apply it in a range of other contexts and for future learning. The assessment should also ensure that all the critical cross-field outcomes have been achieved.

The learner may choose in which language he/she wants to be assessed. This should be established as part of a process of preparing the learner for assessment and familiarising the learner with the approach being taken.

While this is primarily a workplace-based qualification, evidence from other areas of endeavour may be introduced if pertinent to any of the exit-level outcomes. The assessment process

should cover both the explicit tasks required for the qualification as well as the understanding of the concepts and principles that underpin the activities associated with minerals processing.

INTERNATIONAL COMPARABILITY

The proposed qualification was compared with qualifications, courses and other learning interventions available elsewhere in the world in order to ensure that the qualification structure and unit standards proposed are comparable in terms of level, scope of qualifications and competencies covered.

In many countries related training is offered at tertiary education level (typically for higher "NQF" levels than the Level 4 of this proposed qualification), or on-the-job training, which is often very site-specific and not formally recognised.

It was interesting to note that as the levels of qualifications increase, the competencies required become broader or more generic. Specific competencies become more specialised, but aspects such as Safety, Environment, and Quality etc. appear in the majority of courses and qualifications.

Formal Qualifications:

Relevant formal qualifications were found on the Australian and New Zealand frameworks. The proposed FETC: Minerals Processing compared well with both these qualifications.

Australia: National Training Information Services:

The following programme is offered:

Certificate IV in Metalliferous Mining Operations (Processing):

Numerous competencies from this qualification/programme are within the proposed South African Mining and Minerals SGB qualification or in the learning pathway leading to the qualification.

Some of the competencies in the Australian qualification are:

Core:

- > Work safely.
- > Communicate in the workplace.
- > Contribute to quality work outcomes.
- > Participate in environmental work practices.
- > Mine supervision:
 - > Apply, monitor, rectify and report statutory/legal compliance systems.
 - > Apply and monitor mine emergency preparedness and response systems.
- > General:
 - > Apply risk management processes.
 - > Conduct safety and health investigations.
 - > Communicate information.

Elective units:

- > General:
 - > Apply basic First Aid.
 - > Apply advanced First Aid.
- > Mine supervision:
 - > Apply and monitor mine services and infrastructure systems.

- > Commission/recommission plant.
- > Supervise work in confined spaces.

- > General processing:
 - > Manage plant shutdown and restart.
 - > Decommission plant.
 - > Analyse data and report results.

- > By-product management:
 - > Monitor and coordinate waste and process water treatment.

- > Supervision:
 - > Develop work priorities.
 - > Develop teams and individuals.
 - > Coordinate implementation of customer service strategies.
 - > Monitor a safe workplace.
 - > Promote innovation and change.
 - > Implement effective workplace relationships.
 - > Implement operational plan.
 - > Implement workplace information system.
 - > Implement continuous improvement.
 - > Promote team effectiveness.
 - > Contribute to assessment.
 - > Plan and organise assessment.
 - > Assess competence.
 - > Participate in assessment validation.
 - > Provide training through instruction and demonstration of work skills.

New Zealand: The New Zealand Qualification Authority:

The following programme is offered:

National Certificate in Extractive Industries (Mineral Processing - Alluvial Gold), Level 4, Credits 216.

The structure, outcomes and purpose of this qualification compare well with the proposed South African Mining and Minerals SGB qualification.

Some of the competencies in the New Zealand qualification are:

Compulsory:

- > Suppress fire with hand extinguishers and fixed hose reels.
- > Demonstrate knowledge of electrical safe working practices.
- > Demonstrate knowledge of electrical testing to ensure safety.
- > Operate alluvial gold plant.
- > Maintain an alluvial gold plant.
- > Manage first aid in emergency situations.
- > Provide first aid.
- > Provide resuscitation.
- > Protect health and safety in the workplace.
- > Communicate information in a specified workplace.
- > Sling and communicate during crane operations.

Elective:

- > Select, use, and care for engineering hand tools.
- > Select, use, and maintain portable hand held engineering power tools.

- > Follow safe working practices on an engineering work site.
- > Lubricate machines in industry.

Other courses and programmes:

ASM International runs courses in the USA, Canada as well as the UK.

Elements of Metallurgy:

- > Steps in processing common ores to metals.
- > Beneficiating and reducing methods.
- > Types of furnaces.
- > Refractories.

These items could very well form part of the training for the achievement of the proposed Minerals Processing qualification. However, they are not organised in the same manner as the proposed qualification.

India:

In India the courses offered are pitched well above the level of this proposed certificate. There are also degree courses and hence a comparative analysis was not practical.

Practical Metallurgical Solutions offers courses in various countries all over the world including:

- > North & South America.
- > India.
- > China.
- > Europe.
- > Japan.
- > South Korea.

The courses are not as broad as qualifications, but cover the learning that is part of the FETC: Minerals Processing.

Britain:

The competencies required for Minerals Processing are very similar to those required in the Chemical field. Competencies from the City & Guilds Level 3 NVQ in Chemical, Pharmaceutical and Petro-Chemical Manufacture illustrate this observation:

- > Controlling Process Operations.
- > Technical Support.
- > Safety.
- > Teamwork.
- > Work handover.
- > Preparing, controlling, maintaining, restoring and completing processing operations.
- > Quality management.
- > Cleaning and preparing equipment.
- > SHEQ.
- > Problem solving.
- > Risk assessment.
- > Quality control.

Conclusion:

It can be concluded that the competencies addressed by the FETC: Minerals Processing are in line with courses and qualifications from other parts of the world and represent best practice.

ARTICULATION OPTIONS

This qualification allows for both vertical and horizontal articulation.

Vertical articulation exists with:

- > National Diploma: Extraction Metallurgy, NQF Level 5.
- > National Diploma: Chemical Engineering, NQF Level 5.

Horizontal articulation exists with:

- > ID 58538: Further Education Training Certificate: Chemical Operations, NQF Level 4.

MODERATION OPTIONS

- > Anyone assessing a learner or moderating the assessment of a learner against the qualification must be registered as an assessor with the relevant Education, Training, Quality, Assurance (ETQA) Body.
- > Any institution offering learning that will enable the achievement of this qualification must be accredited as a provider with the relevant Education, Training, Quality, Assurance (ETQA) Body, or with an ETQA that has a Memorandum of Understanding with the relevant ETQA.
- > Assessment and moderation of assessment will be overseen by the relevant Education, Training, Quality, Assurance (ETQA) Body, or by an ETQA that has a Memorandum of Understanding with the relevant ETQA, according to the ETQA's policies and guidelines for assessment and moderation.
- > Moderation must include both internal and external moderation of assessments, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described in the associated unit standards.
- > Anyone wishing to be assessed against this qualification may apply to be assessed by any assessment agency, assessor or provider institution that is accredited by the relevant ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

Assessors should be in possession of:

- > An appropriate qualification above the level of the qualification and preferably relevant workplace practical experience.
- > Registration as an assessor with the relevant ETQA.

NOTES

This qualification replaces qualification 49049, "Further Education and Training Certificate: Lump Ore Beneficiation", Level 4, 166 credits.

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	119472	Accommodate audience and context needs in oral/signed communication	Level 3	5
Fundamental	119457	Interpret and use information from texts	Level 3	5
Fundamental	119467	Use language and communication in occupational learning programmes	Level 3	5
Fundamental	119465	Write/present/sign texts for a range of communicative contexts	Level 3	5

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	9015	Apply knowledge of statistics and probability to critically interrogate and effectively communicate findings on life related problems	Level 4	6
Fundamental	119462	Engage in sustained oral/signed communication and evaluate spoken/signed texts	Level 4	5
Fundamental	119469	Read/view, analyse and respond to a variety of texts	Level 4	5
Fundamental	9016	Represent analyse and calculate shape and motion in 2- and 3-dimensional space in different contexts	Level 4	4
Fundamental	119471	Use language and communication in occupational learning programmes	Level 4	5
Fundamental	7468	Use mathematics to investigate and monitor the financial aspects of personal, business, national and international issues	Level 4	6
Fundamental	119459	Write/present/sign for a wide range of contexts	Level 4	5
Core	8016	Maintaining occupational health, safety and general housekeeping	Level 3	8
Core	117877	Perform one-to-one training on the job	Level 3	4
Core	242810	Manage Expenditure against a budget	Level 4	6
Core	261017	Monitor and control a metallurgical plant from a control room	Level 4	15
Core	244105	Participate in a task team in a process environment	Level 4	4
Elective	260998	Administer first aid in the event of cyanide poisoning	Level 3	3
Elective	261137	Control a resin adsorption process in a metallurgical plant	Level 4	15
Elective	261003	Control the Biological Oxidation (Biox) Process	Level 4	15
Elective	260989	Control the carbon adsorption process in a metallurgical plant	Level 4	15
Elective	260980	Control the crushing and screening operation in a metallurgical plant	Level 4	15
Elective	261011	Control the de-watering process in a metallurgical plant	Level 4	15
Elective	261010	Control the dense medium separation process in a metallurgical plant.	Level 4	15
Elective	260978	Control the drying operation in a metallurgical plant	Level 4	15
Elective	261013	Control the elution process in a metallurgical plant	Level 4	15
Elective	260988	Control the froth flotation process in a metallurgical plant	Level 4	15
Elective	260983	Control the gravity concentration process in a metallurgical plant	Level 4	15
Elective	260985	Control the jig operation process in a metallurgical plant	Level 4	15
Elective	260999	Control the lump ore beneficiation process	Level 4	15
Elective	260986	Control the milling and classification operation in a metallurgical plant	Level 4	15
Elective	261002	Control the operation of an electric arc furnace	Level 4	15
Elective	261118	Control the process of uranium recovery from solution in a metallurgical plant	Level 4	15
Elective	260987	Control the thickening process in a metallurgical plant	Level 4	15
Elective	120389	Explain and apply the concept, principles and theories of motivation in a leadership context	Level 4	6
Elective	261117	Generate steam by means of a coal-burning boiler	Level 4	15
Elective	261012	Oversee the leaching operation in a metallurgical plant	Level 4	15

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION

None



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Control the drying operation in a metallurgical plant***

SAQA US ID	UNIT STANDARD TITLE		
260978	Control the drying operation in a metallurgical plant		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
15313	Control a drying operation in a metallurgical plant	Level 4	13	Will occur as soon as 260978 is registered

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the drying operation process.

SPECIFIC OUTCOME 2

Control the drying operation process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of the drying operation process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Control the crushing and screening operation in a metallurgical plant***

SAQA US ID	UNIT STANDARD TITLE		
260980	Control the crushing and screening operation in a metallurgical plant		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the crushing and screening process.

SPECIFIC OUTCOME 2

Control the crushing and screening process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of the crushing and screening process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Control the gravity concentration process in a metallurgical plant

SAQA US ID	UNIT STANDARD TITLE		
260983	Control the gravity concentration process in a metallurgical plant		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
110161	Control a gravity concentration process in a metallurgical plant	Level 4	17	Will occur as soon as 260983 is registered

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the gravity concentration process.

SPECIFIC OUTCOME 2

Control the gravity concentration process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of the gravity concentration process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Control the jig operation process in a metallurgical plant***

SAQA US ID	UNIT STANDARD TITLE		
260985	Control the jig operation process in a metallurgical plant		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the jig operation process.

SPECIFIC OUTCOME 2

Control the jig operation process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of a jig operation process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Control the milling and classification operation in a metallurgical plant***

SAQA US ID	UNIT STANDARD TITLE		
260986	Control the milling and classification operation in a metallurgical plant		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
11078	Control a milling and classification operation in a metallurgical plant	Level 4	17	Will occur as soon as 260986 is registered

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the milling and classification process.

SPECIFIC OUTCOME 2

Control the milling and classification process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of a milling and classification process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Control the thickening process in a metallurgical plant**

SAQA US ID	UNIT STANDARD TITLE		
260987	Control the thickening process in a metallurgical plant		
ORIGINATOR			PROVIDER
SGB Mining and Minerals			
FIELD			SUBFIELD
6 - Manufacturing, Engineering and Technology			Fabrication and Extraction
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the thickening process.

SPECIFIC OUTCOME 2

Control the thickening process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of a thickening process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Control the froth flotation process in a metallurgical plant**

SAQA US ID	UNIT STANDARD TITLE		
260988	Control the froth flotation process in a metallurgical plant		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the froth flotation process.

SPECIFIC OUTCOME 2

Control the froth flotation process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of a froth flotation process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Control the carbon adsorption process in a metallurgical plant**

SAQA US ID	UNIT STANDARD TITLE		
260989	Control the carbon adsorption process in a metallurgical plant		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the carbon adsorption process.

SPECIFIC OUTCOME 2

Control the carbon adsorption process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of the carbon adsorption process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Administer first aid in the event of cyanide poisoning***

SAQA US ID	UNIT STANDARD TITLE		
260998	Administer first aid in the event of cyanide poisoning		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

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

SPECIFIC OUTCOME 1

Prepare to administer first aid in the event of cyanide poisoning.

SPECIFIC OUTCOME 2

Administer first-aid.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the administering of first aid.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Control the lump ore beneficiation process***

SAQA US ID	UNIT STANDARD TITLE		
260999	Control the lump ore beneficiation process		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the lump ore beneficiation process.

SPECIFIC OUTCOME 2

Control the lump ore beneficiation process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of a lump ore beneficiation process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Control the operation of an electric arc furnace**

SAQA US ID	UNIT STANDARD TITLE		
261002	Control the operation of an electric arc furnace		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the electric arc furnace process.

SPECIFIC OUTCOME 2

Control the electric arc furnace process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of a electric arc furnace process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Control the Biological Oxidation (Biox) Process**

SAQA US ID	UNIT STANDARD TITLE		
261003	Control the Biological Oxidation (Biox) Process		
ORIGINATOR			PROVIDER
SGB Mining and Minerals			
FIELD			SUBFIELD
6 - Manufacturing, Engineering and Technology			Fabrication and Extraction
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the Biological Oxidation (Biox) process.

SPECIFIC OUTCOME 2

Control the Biological Oxidation (Biox) process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of a Biological Oxidation (Biox) process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Control the dense medium separation process in a metallurgical plant.

SAQA US ID	UNIT STANDARD TITLE		
261010	Control the dense medium separation process in a metallurgical plant.		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the dense medium separation process.

SPECIFIC OUTCOME 2

Control the dense medium separation process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of the dense medium separation process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Control the de-watering process in a metallurgical plant***

SAQA US ID	UNIT STANDARD TITLE		
261011	Control the de-watering process in a metallurgical plant		
ORIGINATOR			PROVIDER
SGB Mining and Minerals			
FIELD			SUBFIELD
6 - Manufacturing, Engineering and Technology			Fabrication and Extraction
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the de-watering process.

SPECIFIC OUTCOME 2

Control the de-watering process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of a de-watering process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Oversee the leaching operation in a metallurgical plant***

SAQA US ID	UNIT STANDARD TITLE		
261012	Oversee the leaching operation in a metallurgical plant		
ORIGINATOR			PROVIDER
SGB Mining and Minerals			
FIELD			SUBFIELD
6 - Manufacturing, Engineering and Technology			Fabrication and Extraction
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
11087	Oversee a leaching operation in a metallurgical plant	Level 4	22	Will occur as soon as 261012 is registered

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the overseeing of the leaching process.

SPECIFIC OUTCOME 2

Control the leaching process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the overseeing of the leaching process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Control the elution process in a metallurgical plant**

SAQA US ID	UNIT STANDARD TITLE		
261013	Control the elution process in a metallurgical plant		
ORIGINATOR	PROVIDER		
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
15338	Control an elution process in a metallurgical plant	Level 4	22	Will occur as soon as 261013 is registered

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the elution process.

SPECIFIC OUTCOME 2

Control the elution process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of a elution process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Monitor and control a metallurgical plant from a control room**

SAQA US ID	UNIT STANDARD TITLE		
261017	Monitor and control a metallurgical plant from a control room		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the monitoring and controlling of a metallurgical plant.

SPECIFIC OUTCOME 2

Start the metallurgical plant.

SPECIFIC OUTCOME 3

Monitor and control a metallurgical plant.

SPECIFIC OUTCOME 4

Complete the duties pertaining to the monitoring and controlling of a metallurgical plant.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Generate steam by means of a coal-burning boiler***

SAQA US ID	UNIT STANDARD TITLE		
261117	Generate steam by means of a coal-burning boiler		
ORIGINATOR			PROVIDER
SGB Mining and Minerals			
FIELD			SUBFIELD
6 - Manufacturing, Engineering and Technology			Fabrication and Extraction
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the generation of steam by means of a coal boiler.

SPECIFIC OUTCOME 2

Prepare to and generate steam by means of a coal boiler.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the steam generation process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Control the process of uranium recovery from solution in a metallurgical plant

SAQA US ID	UNIT STANDARD TITLE		
261118	Control the process of uranium recovery from solution in a metallurgical plant		
ORIGINATOR		PROVIDER	
SGB Mining and Minerals			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the uranium recovery process.

SPECIFIC OUTCOME 2

Control the uranium recovery process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of the uranium recovery process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Control a resin adsorption process in a metallurgical plant***

SAQA US ID	UNIT STANDARD TITLE		
261137	Control a resin adsorption process in a metallurgical plant		
ORIGINATOR			PROVIDER
SGB Mining and Minerals			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	15

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

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to the controlling of the resin adsorption process.

SPECIFIC OUTCOME 2

Control the resin adsorption process.

SPECIFIC OUTCOME 3

Complete the duties pertaining to the controlling of the resin adsorption process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64889	Further Education and Training Certificate: Minerals Processing	Level 4

No. 1400

29 December 2008

**SOUTH AFRICAN QUALIFICATIONS AUTHORITY (SAQA)**

In accordance with Regulation 24(c) of the National Standards Bodies Regulations of 28 March 1998, the Standards Generating Body (SGB) for

Maritime Defence

registered by Organising Field 08: Law, Military Science and Security, publishes the following Qualification and Unit Standards for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the Qualification and Unit Standards. The full Qualification and Unit Standards 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 Qualification and Unit Standards should reach SAQA at the address below and **no later than 29 January 2009**. All correspondence should be marked **Standards Setting – SGB for Maritime Defence** and addressed to

The Director: Standards Setting and Development
SAQA
Attention: Mr. E. Brown
Postnet Suite 248
Private Bag X06
Waterkloof
0145
or faxed to 012 – 431-5144
e-mail: ebrown@saqa.org.za


D. MPHUTHING

ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:**National Certificate: Vessel Safety Practices**

SAQA QUAL ID	QUALIFICATION TITLE		
64929	National Certificate: Vessel Safety Practices		
ORIGINATOR		PROVIDER	
SGB Maritime Defence			
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Certificate	8 - Law, Military Science and Security	Sovereignty of the State	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	139	Level 5	Regular-Unit Stds Based

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

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

Vessel Safety Officers, also known in the Merchant Navy as Deck Officers of the Watch, the Fishing Industry as vessel Skippers and in the South African Navy as Bridge Watchkeepers, are responsible for internal and external ship communication, the maintenance of a safe bridge watch, the navigation of the vessel and the execution of specific evolutions during a bridge watch.

This Qualification will equip learners to fulfil these responsibilities by giving them holistic training in the procedural, structural, navigational and mechanical components and competencies of the bridge and contextualised understanding of how these various components function together to optimise the performance and safety of the ship and its crew.

Recipients of this qualification will be able to:

- > Communicate in a maritime environment.
- > Maintain a safe bridge watch.
- > Navigate the vessel.
- > Conduct specific evolutions during a bridge watch.

Rationale:

This Qualification has been purpose-built for the Maritime Sector and meets the needs of the sector by providing training standards against which junior maritime officers can be trained. This Qualification meets the needs of society by providing competent maritime officers who are able to apply the complex knowledge and skills required to manage the bridge of a ship, as Vessel Safety Officers, within a safety conscious and highly regulated sector. Learners achieving this Qualification could be recognised for licensing purposes by the various maritime sub-sectors, namely the South African Navy, the Merchant Navy and the Fishing Industry.

This Qualification contributes to an integrated National Qualifications Framework; provides for access, mobility and progression within the maritime sector; enhances the quality of training

within the maritime industry, allows for the redress of past and contributes to the development of the learner as maritime officers within the Maritime Sector.

The majority of the learners attempting this qualification are likely, in the case of the Merchant Navy or the Fishing Industry, to be cadets who are working their way up the ranks or, in the case of the South African Navy, candidate officers or officers on officer training opportunities. This Qualification will allow learners access to learning pathways within the Merchant Navy, the Fishing Industry and the South African Navy.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED IN PLACE

It is assumed that the Merchant Navy and SA Navy learner has the following knowledge and skills:

- > Communication at NQF Level 4.
- > Mathematics at NQF Level 4.

It is assumed that the Fishing Industry learner has the following knowledge and skills:

- > Communication at NQF Level 4.
- > Mathematical Literacy at NQF Level 4.

Recognition of Prior Learning:

This Qualification makes the Recognition of Prior Learning possible, if the learner is able to demonstrate competence in the knowledge, skills, values and attitudes implicit in this Marketing Qualification. Recognition of Prior Learning will be done by means of an Integrated Assessment as mentioned in the previous paragraph.

This Recognition of Prior Learning may allow:

- > For accelerated access to further learning.
- > Gaining of credits towards a unit standard.
- > For full or partial recognition of the Qualification.

All recognition of Prior Learning is subject to quality assurance by the relevant accredited Education, Training, Quality, and Assurance Body and is conducted by a registered workplace assessor. Because the standards are only core and fundamental, these standards may have been acquired in a range of economic sectors and these will be recognized as appropriate.

Access to the Qualification:

There is an open access to this qualification for learners:

- > Who have successfully completed a National Senior Certificate.
- > Who have successfully completed the FETC: Harbour Watchkeeping.
- > Who meet the psychological and physical requirements of the respective Maritime Sub-sectors.

QUALIFICATION RULES

The Qualification consists of a Fundamental, a Core and an Elective Component.

To be awarded the Qualification learners are required to obtain a minimum of 139 credits as detailed below.

Fundamental Component:

The Fundamental Component consists of Unit Standards to the value of 15 credits all of which are compulsory.

Core Component:

The Core Component consists of Unit Standards to the value of 80 credits all of which are compulsory.

Elective Component:

The Elective Component consists of three specialisations, each with its own set of Unit Standards. Learners are to choose a specialisation area and complete all the Unit Standards in that specialisation. The specialisation areas are:

South African Navy Ship Bridge Watchkeeping (44 Credits):

- > ID 261037: "Execute emergency drills during a bridge watch on a naval vessel", NQF Level 4, 7 Credits.
- > ID 261007: "Maintain vessel safety under operational conditions", NQF Level 5, 6 Credits.
- > ID 261080: "Prepare for and carry out fleet work exercises", NQF Level 5, 7 Credits.
- > ID 261077: "Maintain the stability of the ship", NQF Level 5, 5 Credits.
- > ID 261014: "Apply meteorological concepts to shipboard operations", NQF Level 5, 6 Credits.
- > ID 261000: "Demonstrate knowledge of and compliance with pollution prevention requirements", NQF Level 4, 3 Credits.
- > ID 261001: "Maintain the watertight integrity of the ship", NQF Level 5, 8 Credits.
- > ID 261005: "Prepare and execute bridge procedures for helicopter operations", NQF Level 5, 2 Credits.

South African Navy Submarine Bridge Watchkeeping. This specialisation has still to be developed.

Maritime Bridge Watchkeeping (Merchant Navy and Fishing Vessels). This specialisation has still to be developed.

EXIT LEVEL OUTCOMES

1. Communicate in a maritime environment.
2. Maintain a safe bridge watch.
3. Navigate the vessel.
4. Conduct specific evolutions during a bridge watch.

Critical Cross-Field Outcomes:

This qualification promotes, in particular, the following Critical Cross-Field Outcomes:

Identifying and solving problems in which responses display that responsible decisions using critical and creative thinking have been made when:

- > Maintaining a safe bridge watch.
- > Navigating the vessel.

- > Conducting specific evolutions during a bridge watch.

Working effectively with others as a member of a team, group, organisation, and community during:

- > The maintenance of a safe bridge watch.
- > The navigation of the vessel.
- > The conducting of specific evolutions during a bridge watch.

Organising and managing oneself and one's activities responsibly and effectively when:

- > Maintaining a safe bridge watch.
- > Navigating the vessel.
- > Conducting specific evolutions during a bridge watch.

Communicate effectively using visual, mathematical and/or language in the modes of oral and/or written persuasion when:

- > Communicating in a maritime environment.
- > Maintaining a safe bridge watch.
- > Navigating the vessel.
- > Conducting specific evolutions during a bridge watch.

Using science and technology effectively and critically, showing responsibility towards the environment and health of others when:

- > Communicating in a maritime environment.
- > Maintaining a safe bridge watch.
- > Navigating the vessel.

Demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation when:

- > Communicating in a maritime environment.
- > Maintaining a safe bridge watch.
- > Navigating the vessel.
- > Conducting specific evolutions during a bridge watch.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria for Exit Level Outcome 1:

- 1.1 Visual and verbal communication are conducted according to national and international maritime accepted codes and practices.
- 1.2 The appropriate technology is used to establish contact and transfer information.

Associated Assessment Criteria for Exit Level Outcome 2:

- 2.1 Bridge watch duties are executed in compliance with standard operating procedures for the maintenance of a safe watch.
- 2.2 Emergencies are handled according to the level of authority and standard operating procedures.
- 2.3 Bridge personnel are supervised in the execution and accomplishment of their tasks.
- 2.4 The safety, security, stability and integrity of the vessel is maintained throughout the watch in accordance with standard operating procedures.
- 2.5 Waste disposal is monitored for compliance with pollution prevention requirements.

Associated Assessment Criteria for Exit Level Outcome 3:

- 3.1 Navigational planning is conducted so as ensure a safe and accurate passage within prevailing weather conditions.
- 3.2 Electronic navigation systems are applied to ensure a safe passage.

Associated Assessment Criteria for Exit Level Outcome 4:

- 4.1 The ship is handled within its handling capabilities and limitations under all weather conditions and sea states.
- 4.2 Operations, evolutions and exercises are executed according to standard operating procedures and/or special orders.

Integrated Assessment:

Because assessment practices must be open, transparent, fair, valid, and reliable and ensure that no learner is disadvantaged in any way whatsoever, an integrated assessment approach is incorporated into the Qualification. Learning, teaching and assessment are inextricably linked. Whenever possible, the assessment of knowledge, skills, attitudes and values shown in the unit standards should be integrated.

Assessment of the communication, language and literacy should be conducted in conjunction with other aspects and should use authentic maritime sector contexts wherever possible.

A variety of methods must be used in assessment and tools and activities must be appropriate to the context in which the learner is working. Where it is not possible to assess the learner in the workplace or on-the-job, simulations, case studies, role-plays and other similar techniques should be used to provide a context appropriate to the assessment.

The term 'Integrated Assessment' implies that theoretical and practical components should be assessed together. During integrated assessments the assessor should make use of formative and summative assessment methods and assess combinations of practical, applied, foundational and reflective competencies.

Assessors and moderators should make use of a range of formative and summative assessment methods. Assessors should assess and give credit for the evidence of learning that has already been acquired through formal, informal and non-formal learning and work experience.

Assessment should ensure that all Specific Outcomes, Essential Embedded Knowledge and Critical Cross-Field Outcomes are assessed. The assessment of the Critical Cross-Field Outcomes should be integrated with the assessment of Specific Outcomes and Essential Embedded Knowledge.

INTERNATIONAL COMPARABILITY

Best Practice:

The Seafarer's Training, Certification and Watchkeeping Code. All maritime organisations and navies comply with the Seafarer's Training, Certification and Watchkeeping Codes. This leads to a substantial degree of uniformity in a highly regulated international environment. This qualification was developed based on the Code.

The Seafarer's Training, Certification and Watchkeeping Code:

Seafarer's Training, Certification and Watchkeeping Code as adopted by the 1995 Conference of the International Maritime Organisation and recognises the specific roles and responsibilities of a watchkeeper. It lays down duties and responsibilities and provides standards and criteria for the learning and assessment of watchkeepers. Signatories to the Convention include 71 countries, amongst them leading seafaring nations such as Argentina, Australia, Canada, China, Denmark, Finland, France, Germany, India, Japan, Netherlands, New Zealand, Norway, Portugal, Russia, South Africa, Spain, Sweden, and the United Kingdom.

Areas of specified competence include:

- > Plan and conduct a passage and determine position.
- > Maintain a safe navigational watch.
- > Use of radar and automatic radar plotting aids to maintain navigational safety.
- > Respond to emergencies.
- > Respond to a distress signal at sea.
- > Use the Standard Navigational Vocabulary as replaced by the IMO Standard Marine Communication Phrases, and use English in written and oral form.
- > Transmit and receive information by visual signaling.
- > Manoeuvre the ship.
- > Monitor the loading, stowage, securing, care during voyage and unloading of cargoes.
- > Inspect/report defects and damage to cargo spaces, hatch covers and ballast tanks.
- > Compliance with pollution-prevention requirements.
- > Maintenance of seaworthiness of the vessel.
- > Prevention, control and fighting of fires on board.
- > Operation of life-saving appliances.
- > First aid on board ship.
- > Compliance with legislative requirements.

Findings: All of these areas are addressed in the National Certificate: Vessel Safety Practices, Level 5.

Conclusion:

The National Certificate: Vessel Safety Practices, Level 5 deals with all of the requirements of the Seafarer's Training, Certification and Watchkeeping Code and therefore, due to its international acceptance, also compares favourably with a majority of foreign maritime sectors. Once the maritime officer has completed the National Certificate: Vessel Safety Practices, Level 5 he/she would have achieved all the competencies of the Seafarer's Training, Certification and Watchkeeping Code.

ARTICULATION OPTIONS

This Qualification lends itself to both vertical and horizontal articulation possibilities.

Horizontal articulation is possible with the following Qualifications:

- > ID 58840: National Certificate: Submarine Operations, NQF Level 5.
- > ID 64129: National Certificate: Warship Operations, NQF Level 5.
- > ID 57714: National Certificate: Marine Pilotage, NQF Level 5.

Vertical articulation is possible with the following qualifications:

- > ID 58783: National Certificate: Warship Command and Control, NQF Level 6.
- > ID 49783: National Diploma: Joint and Multi-National Operations, NQF Level 6.
- > ID 1413: National Diploma: Maritime Studies, NQF Level 6.
- > ID 62417: National Diploma: Transport Economics, NQF Level 6.

MODERATION OPTIONS

- > Anyone assessing a learner or moderating the assessment of a learner against this Qualification must be registered as an assessor with the relevant Education, Training, Quality, and Assurance (ETQA) Body.
- > Any institution offering learning that will enable the achievement of this Qualification must be accredited as a provider with the relevant ETQA.
- > Assessment and moderation of assessment will be overseen by the relevant ETQA according to the ETQA's policies and guidelines for assessment and moderation; in terms of agreements reached around assessment and moderation between ETQA's (including professional bodies); and in terms of the moderation guideline detailed immediately below.
- > Moderation must include both internal and external moderation of assessments at exit points of the Qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual unit standards, the integrated competence described in the Qualification.

Anyone wishing to be assessed against this Qualification may apply to be assessed by any assessment agency, assessor or provider institution that is accredited by the relevant ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

For an applicant to register as an assessor, the applicant needs:

- > A minimum of 2 (two) years' practical, relevant occupational experience.
- > A relevant Qualification at NQF Level 6 or higher.
- > To be registered as an assessor with the relevant ETQA.

NOTES

Terms have been clarified as far as possible through the use of range statements. Further clarification of terms is provided as follows:

- > Integrated Platform Management Systems (IPMS) refers to a system which enables the integrated monitoring and control of all of the platform machinery and systems of the ship, such as propulsion, steering, electrical generation and distribution, auxiliaries, fire/smoke/flood detection and damage control.
- > Global Positioning System (GPS) refers to a satellite-based radionavigation system which permits users with suitable receivers to establish their position, speed and time on land, sea or in the air, at any time of the day or night and in any weather condition, anywhere in the world. The System is accurate to within 30 metres.
- > Differential Global Positioning System (DGPS) refers to a method of increasing the accuracy of positions derived from GPS receivers. With DGPS receivers, position accuracy is improved, going from 30 meters to better than 10 metres.
- > Content Management System (CMS) refers to a computer software system used to assist its users in the process of content management. A CMS facilitates the organization, control, and publication of a large body of documents and other content, such as images and multimedia resources.
- > Global Maritime Distress and Safety System (GMDSS) refers to a system which is an amalgam of various individual radio systems, both terrestrial and satellite, specifically designed to automate a ship's radio distress alerting function, which removes the requirement for manual watchkeeping on distress channels. Search and Rescue (SAR) authorities ashore, as well as

shipping in the immediate vicinity of the ship or persons in distress will be rapidly alerted so that they can assist in a coordinated SAR operation with the minimum of delay.

- > Radio Regulations refer to the Radio Regulations annexed to, or regarded as being annexed to, the most recent International Telecommunications Convention which may be in force at any time.
- > Officer refers to a member of the crew, other than the Captain (or Master), designated as such by international law or regulations or, in the absence of such designation, by collective agreement or custom.
- > Deck officer refers to an officer qualified in accordance with the provisions of Chapter II of the Seafarer's Training, Certification and Watchkeeping Convention.
- > Rating refers to a member of the ship's crew other than the Captain (or Master) or an officer.
- > The Seafarer's Training, Certification and Watchkeeping (STCW) Code refers to the code as adopted by the 1995 Conference resolution 2, as it may be amended.
- > Seagoing service refers to the service on board a ship relevant to the issue of a certificate or other qualification.
- > Standard of competence refers to the level of proficiency to be achieved for the proper performance of functions on board ship in accordance with the internationally agreed criteria.
- > Management level refers to the level of responsibility associated with:
 - > Serving as captain (or master) or first officer on board a seagoing ship.
 - > Ensuring that all functions within the designated area of responsibility are properly performed.
- > Support Level refers to the level of responsibility associated with performing assigned tasks, duties or responsibilities on board a seagoing ship.
- > Operational level refers to:
 - > Serving as officer in charge of a navigational watch on board a seagoing ship.
 - > Maintaining direct control over the performance of all functions within the designated area of responsibility in accordance with proper procedures and under the direction of an individual serving in the management level for that area of responsibility.

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	115792	Access, process, adapt and use data from a wide range of texts	Level 5	5
Fundamental	115789	Sustain oral interaction across a wide range of contexts and critically evaluate spoken texts	Level 5	5
Fundamental	115790	Write and present for a wide range of purposes, audiences and contexts	Level 5	5
Core	261006	Communicate using standard maritime verbal and visual communication procedures	Level 4	12
Core	261079	Conduct seamanship evolutions	Level 4	3
Core	261098	Supervise personnel in a shipboard environment	Level 4	5
Core	261004	Conduct a safe navigational passage	Level 5	24
Core	260997	Demonstrate understanding of operating procedures, capabilities and limitations of bridge equipment	Level 5	7
Core	261008	Execute and manage bridge conduct procedures	Level 5	8
Core	261057	Manoeuvre the ship using control systems	Level 5	6
Core	261097	Use electronic navigation systems other than radar to maintain safety of navigation	Level 5	5

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Core	261078	Use maritime communications system for internal and external communication	Level 5	3
Core	261009	Use radar and automatic radar plotting aids to maintain safety of navigation	Level 5	7
Elective	261000	Demonstrate knowledge of compliance with pollution prevention requirements	Level 4	3
Elective	261037	Execute emergency drills during a bridge watch	Level 4	7
Elective	261014	Apply meteorological concepts to shipboard operations	Level 5	6
Elective	261005	Conduct bridge procedures for helicopter operations	Level 5	2
Elective	261080	Conduct fleet work exercises	Level 5	7
Elective	261077	Demonstrate an understanding of ship stability	Level 5	5
Elective	261001	Demonstrate an understanding of ship watertight integrity	Level 5	8
Elective	261007	Maintain vessel safety under operational conditions	Level 5	6

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION

None



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Demonstrate understanding of operating procedures, capabilities and limitations of bridge equipment

SAQA US ID	UNIT STANDARD TITLE		
260997	Demonstrate understanding of operating procedures, capabilities and limitations of bridge equipment		
ORIGINATOR		PROVIDER	
SGB Maritime Defence			
FIELD		SUBFIELD	
8 - Law, Military Science and Security		Sovereignty of the State	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	7

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

SPECIFIC OUTCOME 1

Demonstrate understanding of bridge equipment.

SPECIFIC OUTCOME 2

Operate bridge equipment in the course of executing bridge watchkeeping duties.

SPECIFIC OUTCOME 3

Respond to bridge alarm systems.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Demonstrate knowledge of compliance with pollution prevention requirements***

SAQA US ID	UNIT STANDARD TITLE		
261000	Demonstrate knowledge of compliance with pollution prevention requirements		
ORIGINATOR	PROVIDER		
SGB Maritime Defence			
FIELD	SUBFIELD		
8 - Law, Military Science and Security	Sovereignty of the State		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	3

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

SPECIFIC OUTCOME 1

Describe precautions to take in order to prevent pollution.

SPECIFIC OUTCOME 2

Demonstrate an understanding of a response to a pollution incident.

SPECIFIC OUTCOME 3

Implement pollution prevention measures during fuel oil or liquid cargo transfer operations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Demonstrate an understanding of ship watertight integrity***

SAQA US ID	UNIT STANDARD TITLE		
261001	Demonstrate an understanding of ship watertight integrity		
ORIGINATOR		PROVIDER	
SGB Maritime Defence			
FIELD		SUBFIELD	
8 - Law, Military Science and Security		Sovereignty of the State	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	8

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

SPECIFIC OUTCOME 1

Demonstrate an understanding of general arrangements of common large and small ship types.

SPECIFIC OUTCOME 2

Demonstrate an understanding of the fundamental concepts of ship stresses.

SPECIFIC OUTCOME 3

Demonstrate an understanding of the purpose of load lines.

SPECIFIC OUTCOME 4

Explain how the structure and attachments of hull fittings are constructed.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Conduct a safe navigational passage**

SAQA US ID	UNIT STANDARD TITLE		
261004	Conduct a safe navigational passage		
ORIGINATOR			PROVIDER
SGB Maritime Defence			
FIELD			SUBFIELD
8 - Law, Military Science and Security			Sovereignty of the State
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	24

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

SPECIFIC OUTCOME 1

Plan a navigational passage.

SPECIFIC OUTCOME 2

Execute a safe navigational passage.

SPECIFIC OUTCOME 3

Demonstrate understanding of international regulations for preventing collisions at sea.

SPECIFIC OUTCOME 4

Maintain a safe navigational watch.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Conduct bridge procedures for helicopter operations**

SAQA US ID	UNIT STANDARD TITLE		
261005	Conduct bridge procedures for helicopter operations		
ORIGINATOR	PROVIDER		
SGB Maritime Defence			
FIELD	SUBFIELD		
8 - Law, Military Science and Security	Sovereignty of the State		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	2

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

SPECIFIC OUTCOME 1

Demonstrate knowledge of helicopter and vessel capabilities and limitations.

SPECIFIC OUTCOME 2

Provide joining information to inbound helicopters.

SPECIFIC OUTCOME 3

Conduct flight deck operations on a vessel.

SPECIFIC OUTCOME 4

Demonstrate knowledge of procedures for helicopter emergencies.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Communicate using standard maritime verbal and visual communication procedures***

SAQA US ID	UNIT STANDARD TITLE		
261006	Communicate using standard maritime verbal and visual communication procedures		
ORIGINATOR		PROVIDER	
SGB Maritime Defence			
FIELD		SUBFIELD	
8 - Law, Military Science and Security		Sovereignty of the State	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	12

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

SPECIFIC OUTCOME 1

Demonstrate an understanding of both visual and verbal communication used in a maritime environment.

SPECIFIC OUTCOME 2

Issue, receive and execute verbal and written orders.

SPECIFIC OUTCOME 3

Signal intentions and/or communicate information using naval communication procedures.

SPECIFIC OUTCOME 4

Communicate with persons visiting and working on board the ship.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Maintain vessel safety under operational conditions***

SAQA US ID	UNIT STANDARD TITLE		
261007	Maintain vessel safety under operational conditions		
ORIGINATOR		PROVIDER	
SGB Maritime Defence			
FIELD		SUBFIELD	
8 - Law, Military Science and Security		Sovereignty of the State	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	6

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

SPECIFIC OUTCOME 1

Direct the vessel's conduct with regard to torpedo and missile countermeasures.

SPECIFIC OUTCOME 2

Demonstrate knowledge of bridge weapons safety drills.

SPECIFIC OUTCOME 3

Execute bridge weapon firing drills.

SPECIFIC OUTCOME 4

Execute bridge procedures for submarine safety under exercise conditions.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Execute and manage bridge conduct procedures**

SAQA US ID	UNIT STANDARD TITLE		
261008	Execute and manage bridge conduct procedures		
ORIGINATOR	PROVIDER		
SGB Maritime Defence			
FIELD	SUBFIELD		
8 - Law, Military Science and Security	Sovereignty of the State		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	8

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

SPECIFIC OUTCOME 1

Demonstrate understanding of the Officer of the Watch's duties and responsibilities.

SPECIFIC OUTCOME 2

Execute bridge conduct procedures.

SPECIFIC OUTCOME 3

Evaluate the execution of bridge conduct procedures.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Use radar and automatic radar plotting aids to maintain safety of navigation

SAQA US ID	UNIT STANDARD TITLE		
261009	Use radar and automatic radar plotting aids to maintain safety of navigation		
ORIGINATOR		PROVIDER	
SGB Maritime Defence			
FIELD	SUBFIELD		
8 - Law, Military Science and Security	Sovereignty of the State		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	7

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

SPECIFIC OUTCOME 1

Apply an understanding of a maritime radar set.

SPECIFIC OUTCOME 2

Use a marine radar set to detect contacts and promote safe navigation.

SPECIFIC OUTCOME 3

Use an automatic radar plotting aid to maintain safe navigation.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Apply meteorological concepts to shipboard operations***

SAQA US ID	UNIT STANDARD TITLE		
261014	Apply meteorological concepts to shipboard operations		
ORIGINATOR			PROVIDER
SGB Maritime Defence			
FIELD			SUBFIELD
8 - Law, Military Science and Security			Safety in Society
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	6

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

SPECIFIC OUTCOME 1

Describe how weather information is applied to the operations of a ship.

SPECIFIC OUTCOME 2

Forecast weather for a ship in given conditions within a climatic zone.

SPECIFIC OUTCOME 3

Demonstrate an understanding of the effect of the earth's atmosphere on the climatic conditions.

SPECIFIC OUTCOME 4

Demonstrate knowledge of currents and seasonal weather patterns on the South African coast.

SPECIFIC OUTCOME 5

Record weather observations in the ship's deck log.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Execute emergency drills during a bridge watch**

SAQA US ID	UNIT STANDARD TITLE		
261037	Execute emergency drills during a bridge watch		
ORIGINATOR	PROVIDER		
SGB Maritime Defence			
FIELD	SUBFIELD		
8 - Law, Military Science and Security	Sovereignty of the State		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	7

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

SPECIFIC OUTCOME 1

Demonstrate knowledge of emergency drills.

SPECIFIC OUTCOME 2

Execute emergency drills.

SPECIFIC OUTCOME 3

Evaluate the execution of emergency drills.

SPECIFIC OUTCOME 4

Carry out nuclear, biological, chemical defence (NBCD) and damage control emergency drills.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Manoeuvre the ship using control systems***

SAQA US ID	UNIT STANDARD TITLE		
261057	Manoeuvre the ship using control systems		
ORIGINATOR			PROVIDER
SGB Maritime Defence			
FIELD			SUBFIELD
8 - Law, Military Science and Security			Sovereignty of the State
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	6

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

SPECIFIC OUTCOME 1

Operate an automatic pilot and steering controls.

SPECIFIC OUTCOME 2

Describe the function of rudders and propellers in steering a ship.

SPECIFIC OUTCOME 3

Bring a ship up to anchor.

SPECIFIC OUTCOME 4

Manoeuvre a ship.

SPECIFIC OUTCOME 5

Demonstrate knowledge of the mooring and unmooring of a ship.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Demonstrate an understanding of ship stability***

SAQA US ID	UNIT STANDARD TITLE		
261077	Demonstrate an understanding of ship stability		
ORIGINATOR		PROVIDER	
SGB Maritime Defence			
FIELD		SUBFIELD	
8 - Law, Military Science and Security		Sovereignty of the State	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	5

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

SPECIFIC OUTCOME 1

Demonstrate an understanding of ship stability assessment.

SPECIFIC OUTCOME 2

Demonstrate an understanding of the effects of the movement of the centre of gravity on the ship during loading operations or while on passage.

SPECIFIC OUTCOME 3

Demonstrate understanding of the effect of slack and fresh water tanks on ship stability.

SPECIFIC OUTCOME 4

Demonstrate understanding of the fundamentals of watertight integrity.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:*Use maritime communications system for internal and external communication*

SAQA US ID	UNIT STANDARD TITLE		
261078	Use maritime communications system for internal and external communication		
ORIGINATOR			PROVIDER
SGB Maritime Defence			
FIELD			SUBFIELD
8 - Law, Military Science and Security			Sovereignty of the State
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	3

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

SPECIFIC OUTCOME 1

Demonstrate understanding of the ship's communication systems.

SPECIFIC OUTCOME 2

Communicate using communication systems.

SPECIFIC OUTCOME 3

Select and use signalling equipment under maritime distress conditions.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Conduct seamanship evolutions**

SAQA US ID	UNIT STANDARD TITLE		
261079	Conduct seamanship evolutions		
ORIGINATOR		PROVIDER	
SGB Maritime Defence			
FIELD	SUBFIELD		
8 - Law, Military Science and Security	Sovereignty of the State		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	3

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

SPECIFIC OUTCOME 1

Demonstrate a knowledge of seamanship evolutions.

SPECIFIC OUTCOME 2

Execute routine seamanship evolutions during a bridge watch.

SPECIFIC OUTCOME 3

Evaluate the execution of seamanship evolutions.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Conduct fleet work exercises**

SAQA US ID	UNIT STANDARD TITLE		
261080	Conduct fleet work exercises		
ORIGINATOR	PROVIDER		
SGB Maritime Defence			
FIELD	SUBFIELD		
8 - Law, Military Science and Security	Sovereignty of the State		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	7

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

SPECIFIC OUTCOME 1

Demonstrate knowledge of fleet work exercises.

SPECIFIC OUTCOME 2

Carry out fleet work exercises.

SPECIFIC OUTCOME 3

Evaluate fleet work exercises.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Elective	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Use electronic navigation systems other than radar to maintain safety of navigation

SAQA US ID	UNIT STANDARD TITLE		
261097	Use electronic navigation systems other than radar to maintain safety of navigation		
ORIGINATOR		PROVIDER	
SGB Maritime Defence			
FIELD		SUBFIELD	
8 - Law, Military Science and Security		Sovereignty of the State	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 5	5

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

SPECIFIC OUTCOME 1

Use a radio direction finder to obtain a bearing of a transmitting station.

SPECIFIC OUTCOME 2

Use an echo sounder to navigate safely.

SPECIFIC OUTCOME 3

Use speed logs to determine the speed of the ship on passage.

SPECIFIC OUTCOME 4

Obtain the ship's position by using satellite navigation equipment.

SPECIFIC OUTCOME 5

Demonstrate knowledge of electronic chart information when navigating.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	64929	National Certificate: Vessel Safety Practices	Level 5



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Supervise personnel in a shipboard environment***

SAQA US ID	UNIT STANDARD TITLE		
261098	Supervise personnel in a shipboard environment		
ORIGINATOR	PROVIDER		
SGB Maritime Defence			
FIELD	SUBFIELD		
8 - Law, Military Science and Security	Sovereignty of the State		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	5

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

SPECIFIC OUTCOME 1

Demonstrate knowledge of the maritime legal system.

SPECIFIC OUTCOME 2

Observe safe working practices in the supervision of personnel.

SPECIFIC OUTCOME 3

Contribute to effective human relationships on board.

SPECIFIC OUTCOME 4

Contribute to the training and assessment of crew members.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL
Core	64929	National Certificate: Vessel Safety Practices	Level 5

No. 1401

29 December 2008

**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 Qualification for public comment.

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the Qualification. The full Qualification can be accessed via the SAQA web-site at www.saqqa.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 Qualification should reach SAQA at the address below and **no later than 29 January 2009**. All correspondence should be marked **Standards Setting – Task Team for Radiography and Clinical Technology** and addressed to

The Director: Standards Setting and Development
SAQA
Attention: Mr. E. Brown
Postnet Suite 248
Private Bag X06
Waterkloof
0145
or faxed to 012 – 431-5144
e-mail: ebrown@saqa.org.za


D. MPHUTHING
ACTING DIRECTOR: STANDARDS SETTING AND DEVELOPMENT



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:
National Certificate: Clinical Technology

SAQA QUAL ID	QUALIFICATION TITLE		
64969	National Certificate: Clinical Technology		
ORIGINATOR	PROVIDER		
TT - Radiography and Clinical Technology			
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Certificate	9 - Health Sciences and Social Services	Curative Health	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	120	Level 5	Regular-ELOAC

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

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

This qualification is based on a need in the market for competent electro-cardiographic, electro-encephalography and spirometry technologists. It will enable the learners to acquire the necessary knowledge, skills, attitudes and values to practice under the supervision of a Clinical Science Technologist/Graduate Clinical Technologist in one of the following categories:

- > Cardiology - as an Assistant ECG Technologist performing basic 12-lead ECGs.
- > Neurophysiology - as an Assistant EEG Technologist setting-up and recording routine EEGs.
- > Pulmonology - as an Assistant Spirometry Technologist performing basic screening/office spirometry.

These individuals will be able to render assistance to doctors and other health care practitioners. Learners obtaining this qualification can apply for registration with the Health Professions Council of South Africa (HPCSA) as an Assistant ECG Technologist, Assistant EEG Technologist, or Assistant Spirometry Technologist.

Rationale:

The South African Government is committed to providing a framework for a structured national health care system, and to combine the national health plan and human resource development strategy for an effective and efficient system of co-operative governance and management of health care service.

The Department of Health is leading the implementation of a multi-professional team-based approach to health care delivery, where each member of the team has a defined role to ensure there is minimum duplication and overlapping of functions. This process will also ensure that no single member of the team dominates but that different members of the team will lead at different times depending on the services to be rendered.

The Department of Health advocates an Assistant ECG Technologist, Assistant EEG Technologist, and an Assistant Spirometry Technologist, at NQF Level 5, who will perform specified ECG/EEG or Spirometry Technology skills at Health Care facilities under supervision.

The assistant clinical technologist will have the necessary knowledge and skills to create a safe therapeutic environment for the patient and personnel and ensure that the patient receives safe care.

Presently in South Africa, a one-year EEG technician's course is offered and the learners write a Professional Board Examination, consisting of both a theoretical and a practical component. Successful achievement of this Qualification will render the Professional Board Examination unnecessary.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED IN PLACE

- > Mathematical Literacy at NQF Level 4.
- > Communication at NQF Level 4.

Recognition of Prior Learning:

Rules for awarding RPL credits will be in accordance with the policy of the provider institution and in agreement with the relevant ETQA.

Access to the Qualification:

Access to the qualification is open to learners in possession of a National Senior Certificate, a Senior Certificate or equivalent NQF Level 4 qualification.

All learners assessing this qualification are required to be registered as learners with the health professions council of South Africa (HPCSA) for the duration of the period of study.

QUALIFICATION RULES

The qualification structure is as follows:

Fundamental Component (12 credits), compulsory for all learners:

This Component consists of learning related to Foundations of Professional Practice in which the learner will ethically perform and monitor safety, health, environmental and quality assurance procedures in the clinical environment to ensure professional service and the safety of all.

Core Component (100 Credits), compulsory for all learners:

This component consists of scientific knowledge where the learner will apply scientific and technological knowledge in the performance of one of the following categories:

- > A 12-lead ECG.
- > A routine EEG.
- > A screening/office spirometry.

Assistant Clinical Technology Practica (Minimum 400 hours): Based on application of concepts and principles of the relevant disciplines, in order to enable or assist other designated medical professionals in the diagnosis and treatment of various pathophysiological conditions, the learner will perform one of the following in accordance with the selected category:

- > A 12 lead ECG;
- > A routine EEG;
- > A screening/office spirometry.

Elective Component (Minimum of 8 credits required to complete the Qualification):

The Elective Component requires the learner to show competence in at least four of the following procedures, performed within the clinical context of the selected category:

- > Basic life support.
- > Use of automated external defibrillator.
- > Application of oxygen therapy (mask and nasal cannula).
- > Non-invasive blood pressure measurement.
- > Oral and axillar temperature measurement.
- > Radial and femoral pulse measurement.

Clinical Practical:

In order to achieve clinical competency in this qualification, it is the requirement of the relevant Professional Council (HPCSA) that all learners complete a prescribed minimum of 400 clinical under direct mentoring control at an accredited institution.

EXIT LEVEL OUTCOMES

1. Perform and assist with infection control procedures.
2. Apply scientific and technological knowledge in the performance of either a 12-lead ECG, a routine EEG or a screening/office spirometry, in order to assist medical professionals in the diagnosis and treatment of various patho-physiological conditions.
3. Manage self, time and resources efficiently in order to ensure professional and ethical service delivery based on the principles of human rights and medical law.
4. Apply Communication and Psycho-social skills for personal and professional development in the clinical technology context.

Critical Cross-Field Outcomes:

- > Identify and solve problems in the field of clinical technology in which responses display that responsible decisions using critical and creative thinking have been made.
- > Work effectively in collaboration with other health care professionals as members of a team.
- > Organise and manage oneself and one's activities responsibly and effectively.
- > Demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.
- > Collect, analyze organize and critically evaluate information in a 12 lead ECG, a routine EEG or a screening/office spirometry.
- > Communicate effectively in the learning and health care environment.
- > Use technology effectively by transferring and sharing information among health care workers and other stakeholders to deliver quality patient care and facilitate management processes.
- > Demonstrate an understanding of clinical therapy principles by recognizing that problem solving contexts do not exist in isolation.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria For Exit Level Outcome 1:

- 1.1 Apply relevant aspects of the current legislation pertaining to occupation health and safety.
- 1.2 Adhere to safety measures for specified procedures performed in compliance manufacturer specifications and occupational health and safety.
- 1.3 Describe procedures to be followed in the event of fire and emergency situations.

- 1.4 Recognise problems related to malfunctioning of equipment that effect procedures and results and take appropriate action to rectify the situation.
- 1.5 Explain principles of effective control procedures in context.
- 1.6 Compare test results to the norm and take corrective action in the event of any discrepancies.
- 1.7 Apply procedures to manage high risk patients.
- 1.8 Explain preventive procedures to be followed for alleviating needle-stick injury to patient and self.
- 1.9 Apply knowledge of infection control principles including, principles of sterilization, disinfection and health care risk waste management to ensure the health and safety of all, as well as of the environment.
- 1.10 Perform all activities ethically with due regard to patient rights and own responsibilities.

Associated Assessment Criteria For Exit Level Outcome 2:

- 2.1 Apply knowledge of anatomy and physiology in a chosen clinical context.
- 2.2 Explain pathophysiological conditions in context with examples.
- 2.3 Describe patho-physiological conditions which might affect screening results.
- 2.4 Explain basic biophysical principles by which different electrocardiography, electroencephalography or spirometry equipment functions and which ensure the effectiveness of the procedures.
- 2.5 Explain the electrocardiography, electroencephalography or spirometry procedures which ensure patient safety.
- 2.6 Perform principles, methods and application of electrocardiography, electroencephalography or spirometry procedures according to protocol to ensure accuracy of readings and effective monitoring of the processes.
- 2.7 Prepare the patient and equipment according to protocol.
- 2.8 Evaluate results and make recommendations to supervisors on abnormal electrocardiography, electroencephalography or spirometry findings for the benefit of the patient management.
- 2.9 Use computers and associated software for recording and retrieval of information related to patients and/or the testing institution or medical practice.

Associated Assessment Criteria For Exit Level Outcome 3:

- 3.1 Apply the relevant Professional Council Code of Conduct and Scope of Practice.
- 3.2 Explain the functions of the different medical professional bodies.
> Range: Include but are not limited to HPCSA, Professional Board South Africa Society of Clinical Technology (SASCT).
- 3.3 Execute administrative duties systematically and with due regard to patient confidentiality.
- 3.4 Adhere to manufacturer specifications in the use and storage of consumables in line with the principles of occupational health and safety.

Associated Assessment Criteria For Exit Level Outcome 4:

- 4.1 Use verbal and non-verbal communication skills in a clinical context e.g. writing of reports or giving explanations of procedure results.
- 4.2 Disseminate information via retrieval systems (electronic and non-electronic).
- 4.3 Apply proper academic referencing procedures e.g. Harvard system, to avoid plagiarism when doing research or writing reports.
- 4.4 Compile clinical reports concisely, comprehensively and clearly and store these appropriately.

Integrated Assessment:

Integrated assessment takes the form of an appropriate variety of assessment methods for example, written and oral examinations, problem-solving assignments, projects, presentations, case studies, portfolios, log books, clinical reports, and assessment of clinical competence through simulated clinical assessments in situ.

The qualification will be awarded to a learner who has provided evidence to the satisfaction of the assessors that the qualification, as detailed in the stated outcomes, has been achieved.

The integrated assessment needs to have the following characteristics:

- > Assessment of the extent to which learners can practice competently, effectively and safely in any clinical context nationally and internationally.
- > Measurement of the extent to which learners have integrated the professional roles, knowledge, practice and skills delivered through the different outcomes reflected in the programme.
- > Provision of opportunities for reflection-in-action and reflection-on-action to develop reflexive competence.

Clinical Competence:

Clinical competence is ensured through close supervision by clinical staff during the period of training. Learners need to complete a clinical work record based on integrated work experience, with a specified minimum of 250 cases, to be recorded in a logbook. A minimum of 300 working hours needs to be spent by the learner in the Clinical Technology environment under the supervision of a graduate clinical technologist in Cardiology, Neurophysiology or Pulmonology.

Learners' progress is assessed by appropriate appointed assessors and relayed to learners and educators. The learner must demonstrate competency in performing an ECG, EEG or basic spirometry procedure on actual patients and recognize common abnormalities. This must be undertaken at an accredited training facility and mentored by a registered practitioner.

On completion all learners will be required to successfully complete a competency-based test (CBT) in order to register with the relevant Professional Council as an Assistant ECG Technologist, Assistant EEG Technologist or Assistant Spirometry Technologist.

INTERNATIONAL COMPARABILITY

Introduction:

The primary reason for designing this Qualification was to meet the needs of the South African community as identified by the National Department of Health and also to ensure that it is compatible with the international standards. This qualification was compared to similar qualifications in first world countries, such as the United Kingdom, United States of America, New Zealand, Australia and Canada. No similar courses are currently offered in any other country with an economy similar to that of South Africa, nor anywhere else in Africa.

United Kingdom (UK):

The UK offers a 4-year degree in Clinical Physiology (Cardiology, Cardiovascular Perfusion or Neurophysiology). The degree can be done full time at university, or, for trainee physiologists already working in a cardiac unit/theatre, study opportunities are available with day or block release attendance at college. Trainee clinical technologists currently follow a two-year, mainly in-service, programme.

United States of America (USA):

In the USA the electro-neurodiagnostic course is offered at colleges and learners obtain an associate degree on completion of the course. All electroneurodiagnostic technologists register with the American Society of Electroneurodiagnostic Technologists (ASET). Currently there are 12 centres in USA that offer this programme. The Clinical Neurophysiology Technology Programme is accredited by the Commission on Accreditation of Allied Health Education Programmes upon the recommendation of the Committee on Institutions offering the END Technology Programme in the Nursing and Allied Health Sectors accreditation for education in Electroneurodiagnostic Technology.

Canada:

Formal Neurophysiology training programmes in Canada can be found in community colleges, technical schools, private school, and hospitals. Programmes last from 12-24 months and successful learners are awarded a diploma, certificate or associate degree. There are only 12 accredited END schools in the United States. The curriculum includes electronics, neuro-anatomy, neuropathology, computer skills, instrumentation, clinical science, neuro-pharmacology, neurophysiology, psychology, and clinical practicum. Qualified Electro-neurodiagnostic Technologists register with the American Board of Registration of Electroencephalographic and Evoked Potential Technologists (ABRET) who, in turn, award the credentials of "Registered EEG Technologist" and "Registered Evoked Potential Technologist".

Australia:

Currently, learner Neurophysiology Technologists in Australia enrol in the 3-year Diploma in Clinical Neurophysiology at the RMIT University in Victoria. This programme is offered by distance education. As the course has a large component of "on the job" training, students must be employed in a Clinical Neurophysiology Department or clinic. Once qualified, they are known as Neurophysiology Technologists.

New Zealand:

In New Zealand Neurophysiology technicians undertake four years of practical and theoretical training. The first part of the training is fully supervised by a qualified technician. In New Zealand neurophysiology technicians study by correspondence to obtain an Advanced Diploma in Health Sciences, majoring in clinical neurophysiology.

Auckland is the main training centre. Smaller centers are less likely to take on trainees due to commitment requirements in terms of expense and supervisory time. The New Zealand Society of Neurophysiology? Technologists (NZSNPT) is looking at setting up a registration system, but the small workforce in NZ makes this difficult.

Joint American and European Thoracic and Respiratory Societies recommend personnel qualifications as completion of secondary education and at least 2 years of college education as well as a recommended frequency of refresher courses every 3-5 years. According to the Committee on Accreditation for Respiratory therapists there are 327 registered respiratory therapist programmes and 134 certified respiratory therapist programmes. In most programmes, the last 2 years lead to an associate degree. Some are 4-year Bachelor degree programmes, which qualify the successful learner for a supervisory or managerial position. High school learners should have courses in health, biology, mathematics, chemistry and physics. Respiratory therapy programmes include human anatomy and physiology, chemistry, physics, microbiology and mathematics. Technical courses deal with procedures, equipment and clinical tests.

Conclusion:

This Qualification makes provision for qualified and competent individuals who may be registered with the HPCSA and who are able to conduct procedures ethically and safely for the patient. It covers all the learning offered in internationally similar qualifications.

ARTICULATION OPTIONS

Vertical articulation is possible with the Bachelor: Clinical Science, or an equivalent degree.

MODERATION OPTIONS

Assessments are conducted by one or more internal assessors/examiners employed by the relevant provider as well as an external moderator appointed from industry or other academic institution, according to the requirements of the relevant ETQA. Assessors are to be accredited as assessors by the relevant Professional Council and/or relevant ETQA.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

Qualifications required:

> A relevant qualification at least one level above that of this Qualification, in the specialist category.

Career experience:

> A minimum of 5 years research/teaching/academic/clinical experience in the appointed discipline.

NOTES

N/A

UNIT STANDARDS

This qualification is not based on Unit Standards.

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION

None