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**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

Generic Manufacturing, Engineering and Technology

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

This notice contains the titles, fields, sub-fields, NQF levels, credits, and purpose of the Qualifications and Unit Standards. The full Qualifications 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 Qualifications and Unit Standards should reach SAQA at the address below and **no later than 1 February 2008**. All correspondence should be marked **Standards Setting – Generic Manufacturing, Engineering and Technology** and addressed to

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SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:

National Certificate: Mechanical Handling (Rigging)

SAQA QUAL ID		QUALIFICATION TITLE	
59729		National Certificate: Mechanical Handling (Rigging)	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Certificate	6 - Manufacturing, Engineering and Technology	Engineering and Related Design	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	127	Level 2	Regular-Unit Stds Based

This qualification replaces:

Qual ID	Qualification Title	NQF Level	Min Credits	Replacement Status
13696	Mechanics: Chemical Rigging	Level 2	120	Will occur as soon as 59729 is registered

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

The purpose of the qualification is to provide learners, education and training providers and employers with the standards and the range of learning required to work effectively in various industries making use of mechanical handling (rigging) skills and to meet the challenges of such an environment. The primary focus of this qualification is the acquisition of knowledge, skills and attributes required to supervise the lifting and moving of loads using a variety of lifting equipment and tackle and by co-ordinating the operation of lifting machinery to achieve this.

This is the first in a learning pathway of three qualifications at NQF Level 2; NQF Level 3 and NQF Level 4. This series ends with the Further Education and Training Certificate in Mechanical Handling (Rigging) at NQF Level 4 and provides a developmental pathway for the full range of activities required for mechanical handling. The skills and knowledge required are described in a generic manner so that the changing needs of particular work environments can be met without requiring changes to the qualification or the unit standards.

The primary skills that are recognised in this qualification are:

- The use of hand and power tools.
- The application of lifting equipment and tackle, including fibre ropes.
- The use of overhead cranes to lift and move a load.
- An understanding of applicable legislation, regulatory and quality assurance criteria.

These capabilities require an understanding of lifting and mechanical handling principles in terms of the application of mathematical solutions.

Qualified learners will also understand:

- The basics of how a business functions.
- Their role in the business, i.e. in production and related activities.
- How they are affected by legislation, regulations, agreements and policies related to their particular work environment.

With this understanding learners will be able to participate effectively in workplace activities.

This qualification will ensure that the relevant rigging skills are developed according to the requirements of industry. This qualification will also contribute to the social upliftment and development of employees by allowing learners who are active in the industry to gain recognition for the skills and knowledge they have acquired without having to go through a formal apprenticeship process.

Rationale:

The need to provide mechanical handling (rigging) skills within various industry sectors and the impact of a growing economy has created a demand for people with the ability to move a wide range of loads (machinery, equipment, goods and structures). In order to meet this demand (example, through learnerships and skills programmes), industry needs a mechanical handling (rigging) qualification which focuses on the lifting and moving of loads using lifting equipment and tackle. This qualification series represents an alignment with the traditional occupation of a rigger, which is characterised by the lifting and moving of loads by using various methods and techniques in accordance with legislative and regulatory requirements.

The environment in which these skills are practised is characterised by strict codes of safety and high levels of planning and preparation. This qualification spells out the skills needed to operate successfully in this field.

Typically learners would be new entrants to the industry or existing employees with some experience in rigging. Once qualified, they would be able to prepare lifting equipment and tackle and perform slinging tasks. They would perform tasks under supervision within the context of an overall team. It is possible for this role to represent a recognised position in the organisation (example, slinger's assistant).

This qualification series recognises skills, knowledge and values relevant to a workplace and requires workplace experience. It is suitable for learners who:

- Are already workers and have acquired the skills and knowledge without attending formal courses (RPL can be done through the summative assessment and portfolio of evidence).
- Participate in skills programmes and have the appropriate work experience.
- Are part of a learnership programme which integrates structured learning and work experience.
- Acquire their learning through any combination of the above.

The outcomes of this qualification combine skills and knowledge in the technical, inter-personal and business spheres, enabling the learner to perform the operational aspects of the work, function within a team context and contribute to value-adding processes within the organisation.

This qualification provides learners who have gained relevant experience in the workplace with an opportunity to obtain credits through an RPL process.

It also forms the basis for further learning in the field of mechanical handling (rigging) where the learner will be able to lift and move loads using a range of mobile machines.

Learner achievements will contribute to the ability of South African companies to compete for work in the global economy, thus securing jobs and employment opportunities.

RECOGNIZE PREVIOUS LEARNING?

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LEARNING ASSUMED IN PLACE

The following competencies are assumed for a learner accessing this qualification:

- Communication at NQF Level 1.
- Mathematical Literacy at NQF Level 1.

These skills form the basis for determining the credit allocation in this qualification. The allocation of credits is also based on the assumption that the learner will be working towards this qualification as part of a learning programme, which integrates all the unit standards.

Recognition of Prior Learning:

This qualification may be obtained through a process of RPL. The learner should be thoroughly briefed prior to the assessment and support should be provided to assist the learner in the process of developing a portfolio. The guidelines for integrated assessment should be used to develop the RPL assessment process. As with integrated assessment, 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.

Access to the qualification:

There is open access to this qualification. It is however, necessary to obtain relevant work experience in order to produce the evidence required for the assessment of the Exit Level Outcomes.

QUALIFICATION RULES

Fundamental Component:

The Fundamental Component consists of Unit Standards in:

Communications at NQF Level 2 to the value of 20 credits:

- Mathematical Literacy at Level 2 to the value of 16 credits.
- All Unit Standards in the Fundamental Component are compulsory.

Core Component:

The Core Component consists of Unit Standards to the value of 71 credits all of which are compulsory.

Elective Component:

The Elective Component consists of a number of specializations each with its own set of Unit Standards. Learners are to choose a specialization area and must choose Elective Unit Standards to the value of 20 credits from the Elective Unit standards listed under that specialization so as to attain a minimum of 127 credits for this qualification.

Specialisation Area 1:

Learning Programme:

Rigging (Manufacturing, Engineering and Related Industries).

Learners must choose Elective Unit Standards from the list below to give a minimum of 20 credits for the Elective Component:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 253638; Sling and communicate during crane operations; Level 2; 4 Credits.
- Elective; ID 253603; Manoeuvre a load using mechanical lifting equipment; Level 3; 7 Credits.
- Elective; ID 10641; Carry out a detailed inspection on enhanced safety apparatus; Level 2; 3 Credits.
- Elective; ID 8420; Operate in a team; Level 2; 4 Credits.
- Elective; ID 116235; Operate a pendant-controlled overhead crane; Level 2; 3 Credits.
- Elective; ID 242981; Operate defined purpose lift trucks; Level 2; 4 Credits.
- Elective; ID 253600; Use a sideboom to lift, lower and carry material; Level 2; 5 Credits.
- Elective; ID 116254; Operate a mobile crane; Level 2; 5 Credits.
- Elective; ID 12466; Explain the individual's role within business; Level 2; 4 Credits.
- Elective; ID 12465; Develop a learning plan and a portfolio for assessment; Level 2; 6 Credits.
- Elective; ID 116253; Operate a truck mounted loader crane; Level 2; 20 Credits.
- Elective; ID 242976; Operate overhead/gantry cranes; Level 2; 7 Credits.

Total: 72 Credits.

Specialisation area 2:

Learning Programme:

Rigging (Chemical Industry).

Learners must do Unit Standard ID 253374 and choose additional Elective Unit Standards from the list below to give a minimum of 20 credits for the Elective Component:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 253374; Describe the chemical industry, its regulatory requirements and communication techniques; Level 2; 2 Credits.
- Elective; ID 253638; Sling and communicate during crane operations E; Level 2; 4 Credits.
- Elective; ID 253603; Manoeuvre a load using mechanical lifting equipment; Level 3; 7 Credits.
- Elective; ID 10641; Carry out a detailed inspection on enhanced safety apparatus; Level 2; 3 Credits.
- Elective; ID 8420; Operate in a team; Level 2; 4 Credits.
- Elective; ID 116235; Operate a pendant-controlled overhead crane; Level 2; 3 Credits.
- Elective; ID 242981; Operate defined purpose lift trucks; Level 2; 4 Credits.
- Elective; ID 242976; Operate overhead/gantry cranes; Level 2; 7 Credits.

Total: 34 Credits.

Specialisation area 3:

Learning Programme:

(Rigging) Mining Industry.

Learners must choose Elective Unit Standards from the list below to give a minimum of 20 credits for the Elective Component:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 253638; Sling and communicate during crane operations E; Level 2; 4 Credits.
- Elective; ID 253603; Manoeuvre a load using mechanical lifting equipment; Level 3; 7 Credits.
- Elective; ID 10641; Carry out a detailed inspection on enhanced safety apparatus; Level 2; 3 Credits.
- Elective; ID 8420; Operate in a team; Level 2; 4 Credits.
- Elective; ID 116235; Operate a pendant-controlled overhead crane; Level 2; 3 Credits.
- Elective; ID 242981; Operate defined purpose lift trucks; Level 2; 4 Credits.
- Elective; ID 242976; Operate overhead/gantry cranes; Level 2; 7 Credits.
- Elective; ID 119061; Erect, alter/reposition and dismantle load bearing scaffolding; Level 2; 13 Credits.
- Elective; ID 243067; Cut materials using the oxy-fuel gas cutting process (manual cutting); Level 2; 6 Credits.
- Elective; ID 243063; Weld carbon steel work-pieces using the shielded metal arc welding process in the down-hand position; Level 2; 15 Credits.
- Elective; ID 110163; Lift and move a load using a tugger winch; Level 2; 4 Credits.
- Elective; ID 253674; Install scraper rigs and rig scraper ropes in an underground workplace; Level 2; 4 Credits.
- Elective; ID 253714; Install scraper ropes onto scraper winch drums; Level 2; 2 Credits.
- Elective; ID 253694; Load and unload persons into and from a shaft conveyance; Level 2; 4 Credits.
- Elective; ID 253715; Load long material into a shaft conveyance; Level 2; 3 Credits.
- Elective; ID 253581; Lift and move a load by means of rollers; Level 2; 2 Credits.
- Elective; ID 253659; Make up a steel wire rope specimen for testing purposes; Level 2; 2 Credits.
- Elective; ID 253657; Re-rail rolling stock by means of jacks; Level 3; 3 Credits.
- Elective; ID 253774; Prepare a conveyance for shaft examination and repairs; Level 2; 4 Credits.
- Elective; ID 253754; Load and remove rolling stock into and from a shaft conveyance; Level 2; 8 Credits.
- Elective; ID 253775; Prepare a conveyance for shaft examination and repairs; Level 2; 2 Credits.
- Elective; ID 253635; Replace the bucket assembly of a dragline; Level 2; 2 Credits.

Total: 102 Credits.

Specialisation area 4:

Learning Programme:

Rigging (Electrical Power Generation).

Learners must do Unit Standard ID 9839 and must choose additional Elective Unit Standards from the list below to give a minimum of 20 credits for the Elective Component:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 9839; Apply and maintain safety in an electrical environment; Level 1; 5 Credits.
- Elective; ID 253638; Sling and communicate during crane operations E; Level 2; 4 Credits.
- Elective; ID 253603; Manoeuvre a load using mechanical lifting equipment; Level 3; 7 Credits.
- Elective; ID 10641; Carry out a detailed inspection on enhanced safety apparatus; Level 2; 3 Credits.

- Elective; ID 8420; Operate in a team; Level 2; 4 Credits.
- Elective; ID 116235; Operate a pendant-controlled overhead crane; Level 2; 3 Credits.
- Elective; ID 242981; Operate defined purpose lift trucks; Level 2; 4 Credits.
- Elective; ID 242976; Operate overhead/gantry cranes; Level 2; 7 Credits.
- Elective; ID 119061; Erect, alter/reposition and dismantle load bearing scaffolding; Level 2; 13 Credits.
- Elective; ID 116231; Operate a cab controlled overhead crane; Level 2; 8 Credits.
- Elective; ID 253581; Place and move a load by utilising rollers; Level 2; 2 Credits.

Total: 60 Credits.

EXIT LEVEL OUTCOMES

1. Apply mechanical technology applicable to a lifting and mechanical handling environment.

- Range:
 - Tools: hand tools, measuring, marking off, fastening, power tools, and other basic tools.
 - Processes: drilling, tapping, filing (metal-removal), grinding, cutting, and other basic processes.
 - Skills: read and interpret simple engineering drawings, grinding, sharpening and filing.
 - Basic rigging implements may include tee-needle, marline spike and serving mallet.

2. Identify and apply rigging equipment.

3. Lift and move a load using overhead lifting machinery.

4. Understand and solve problems and communicate in verbal or written form with peers, members of supervisory/management levels and others.

Critical Cross-Field Outcomes:

These are embedded in the unit standards, which make up the qualification and are thus also reflected in the Exit Level Outcomes of the qualification.

The Critical Cross-Field Outcomes are supported by the Exit Level Outcomes as follows:

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

- Related to the lifting and moving of loads.
- In preparation and during the use of overhead lifting machinery.
- Solving problems during the execution of lifting and moving a load.

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

- All tasks and work-related experience are performed within a team environment.
- Taking into account, the safety of others.
- Communicating with production, quality control and supervisory personnel and/or clients.

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

- Related to planning and preparation during the lifting and moving of loads.

Collecting, analyzing, organizing and critically evaluating information:

- Related to planning and preparation in order to lift and move a load.
- Completion of technical reports related to the job activity.

- Solve familiar problems during the execution of lifting tasks.

Communicating effectively using visual, mathematical and/or language skills:

- During planning, preparation and the execution of job activities Completion of technical reports related to the job activity.
- Communicating as a part of a team.

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

- During the lifting and moving of loads.
- Relating to the safety of others.
- Solving problems and applying science and technology to the rigging activity.

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

- Integrating the rigging task with the plant installation's functionality.
- Solving problems through the integration of various sources of information.
- Demonstrating and understanding of related systems through the use of general and specific channels of communication when dealing with peers, production, quality control and supervisory personnel and/or clients.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria for Exit Level Outcome 1:

- 1.1 Mechanical technology, techniques and processes applicable to Mechanical Handling (Rigging) are explained and demonstrated using engineering workshop machinery in a safe manner.
- 1.2 The use of hand tools, measuring instruments and engineering materials, are demonstrated by manufacturing rigging hand tools, using appropriate knowledge and skills.
- 1.3 Occupational health, safety and environmental legislation issues are explained and safety practices and procedures are applied while using tools, equipment and workshop machinery.
- 1.4 Machinery, tools and equipment are cleaned and stored according to standard operating procedures.

Associated Assessment Criteria Exit Level Outcome 2:

- 2.1 Fibre ropes are identified and splicing and joining methods are applied according to standard work-site practice.
 - 2.2 Manual lifting equipment is selected, inspected and used in terms of safety and regulatory requirements, ensuring that a load is lifted and moved efficiently according to work instructions.
 - 2.3 Workplace procedures are applied in the handling of the load in order to avoid damage and avoiding danger to others.
 - 2.4 Quality, safety and environmental procedures are followed in terms of worksite procedures, with specific reference to regulatory and legislative requirements.
- Range:
 - Operating methods and procedures (characteristics) may include working load limits (WLL) and safe working load (SWL); awareness of defects; correct application (centre of gravity, environment, functions; advantages of one type over the other).
 - Rigging equipment (lifting equipment and tackle) may include rope blocks, snatch blocks, tirlors (hand-winch), chain blocks, ratchet-lever hoists, hydraulic and mechanical jacks, rollers and other lifting equipment.
 - Safe use includes checking and inspection, recognized procedures for recording condition of equipment, due regard for the well-being of others, the rigging equipment.

- Overhead lifting machinery includes cab-controlled, pendant-controlled and gantry cranes.

Associated Assessment Criteria Exit Level Outcome 3:

- 3.1 A load is lifted and moved by directing the operation of an overhead crane, according to work instructions, paying attention to effective communication through the use of hand signals.
- 3.2 Knowledge and application of the regulatory requirements pertaining to crane operations are demonstrated using safe lifting methods in avoiding danger to others and damage to the load.
- Range:
 - Legislative requirements may include information from the Occupational, Health and Safety Act No. 85 of 1993; Driven Machinery Regulations, Mine Health and Safety Act, No.29 of 1996; South African Maritime Safety Regulations.

Associated Assessment Criteria Exit Level Outcome 4:

- 4.1 Verbal communication is used during the interaction with other role players in the lifting and mechanical handling environment to determine and understand the extent of the lifting task, find and implement solutions and giving and getting feedback.
- 4.2 Written communication is used in order to understand, evaluate and report on the completion of the lifting task.
- 4.3 Technical reading skills are applied in order to understand task information through the use of work instructions or drawings.
- 4.4 Technical writing skills are applied in order to record extraordinary occurrences or related information.

Integrated Assessment:

- Assessment practices must be open transparent fair valid and reliable and should ensure that no learner is disadvantaged in any way whatsoever, so that an integrated approach to assessment is incorporated into the qualification.
- Learning teaching and assessment are inextricably interwoven. Whenever possible the assessment knowledge skills attitudes and values shown in the unit standards should be integrated.
- Assessment of Communication and Mathematical Literacy should be integrated as far as possible with other aspects and should use practical administration 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 or will work. 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 a range of summative assessment methods and assess combinations of practical, applied, foundational and reflective competencies.
- Assessors must assess and give credit for the evidence of learning that has already been acquired and could include formal, non-formal learning and work experience.
- Assessment should ensure that all specific outcomes, embedded knowledge and critical cross-field outcomes are evaluated in an integrated manner.
- Integrated assessment instruments may combine practical and theoretical components of assessment with the following unit standards in relation to the exit level outcomes:

Exit Level Outcomes and Associated Unit Standards:

1. Use and apply mechanical technology, techniques, processes and skills, applicable to a lifting and mechanical handling environment, according to standard industry practices.

Category; ID; Title; Credits:

- Core; ID 12477; Identify engineering materials, their characteristics and applications and common metal tests used in engineering; Level 2; 4 Credits.
- Core; ID 13220; Keep the work area safe and productive; Level 2; 8 Credits.
- Core; ID 12215; Read, interpret and produce basic engineering drawings; Level 2; 6 Credits.
- Core; ID 119744; Select, use and care for engineering hand tools; Level 2; 8 Credits.
- Core; ID 12476; Select, use and care for engineering measuring equipment; Level 2; 4 Credits.
- Core; ID 12219; Select, use and care for engineering power tools; Level 2; 6 Credits.
- Core; ID 13214; Operate and monitor a drilling machine to produce simple components; Level 2; 6 Credits.
- Fundamental; ID 12444; Measure, estimate and calculate physical quantities and explore, describe and represent geometrical relationships in 2-dimensions in different life or workplace contexts; Level 2; 3 Credits.
- Core; ID 253555; Manufacture basic rigging hand tools; Level 2; 4 Credits.
- Fundamental; ID 119463; Access and use information from texts; Level 2; 5 Credits.
- Fundamental; ID 119460; Use language and communication in occupational learning programmes; Level 2; 5 Credits.

2. Identify and apply rigging equipment, according to appropriate operating methods and procedures, in terms of safety and efficiency.

Category; ID; Title; Credits:

- Core; ID 13220; Keep the work area safe and productive; Level 2; 8 Credits.
- Core; ID 253575; Use, care and inspect lifting equipment and tackle; Level 2; 5 Credits.
- Core; ID 253591; Identify and use fibre ropes; Level 2; 4 Credits.
- Core; ID 253582; Lift and move a load using manual lifting equipment and tackle.; Level 2; 8 Credits.
- Core; ID 253595; Direct the operation of an overhead crane; Level 2; 3 Credits.
- Core; ID 116283; Demonstrate knowledge of and apply regulatory requirements pertaining to crane operation; Level 2; 5 Credits.
- Fundamental; ID 119460; Use language and communication in occupational learning programmes; Level 2; 5 Credits.

3. Lift and move a load using different overhead lifting machinery by applying an understanding of applicable legislative and regulatory requirements.

Category; ID; Title; Credits:

- Core; ID 253582; Lift and move a load using manual lifting equipment and tackle; Level 2; 8 Credits.
- Core; ID 253592; Direct the operation of an overhead crane; Level 2; 2 Credits.
- Core; ID 116283; Demonstrate knowledge of and apply regulatory requirements pertaining to crane operation; Level 2; 5 Credits.
- Fundamental; ID 119463; Access and use information from texts; Level 2; 5 Credits.
- Fundamental; ID 7480; Demonstrate understanding of rational and irrational numbers and number systems; Level 2; 3 Credits.

- Fundamental; ID 12444; Measure, estimate and calculate physical quantities and explore, describe and represent geometrical relationships in 2-dimensions in different life or workplace contexts ; Level 2; 3 Credits.
- Fundamental; ID 119460; Use language and communication in occupational learning programmes; Level 2; 5 Credits.
- Fundamental; ID 9007; Work with a range of patterns and functions and solve problems; Level 2; 5 Credits.

4. Understand and solve problems and communicate in verbal or written form with peers, members of supervisory/management levels and others.

Category; ID; Title; Credits:

- Core; ID 253582; Lift and move a load using manual lifting equipment and tackle; Level 2; 8 Credits.
- Core; ID 253595; Direct the operation of a overhead crane; Level 2; 2 Credits.
- Fundamental; ID 119463; Access and use information from texts; Level 2; 5 Credits.
- Fundamental; ID 7480; Demonstrate understanding of rational and irrational numbers and number systems; Level 2; 3 Credits.
- Fundamental; ID 12444; Measure, estimate and calculate physical quantities and explore, describe and represent geometrical relationships in 2-dimensions in different life or workplace contexts; Level 2; 3 Credits.
- Fundamental; ID 119460; Use language and communication in occupational learning programmes; Level 2; 5 Credits.
- Fundamental; ID 9007; Work with a range of patterns and functions and solve problems; Level 2; 5 Credits.
- Fundamental; ID 119456; Write/present for a defined context; Level 2; 5 Credits.

INTERNATIONAL COMPARABILITY

1. Introduction:

This qualification: "National Certificate: Mechanical Handling (Rigging)" does not use the traditional term "rigger" as used in the South African apprenticeship system and most other countries. However, the knowledge and skills contained within this qualification series at NQF Level 2 to Level 4, are similar to the trade-related occupation of a rigger as it is recognised locally and internationally.

The National Certificate: Mechanical Handling (Rigging) Level 2 is the first of a learning pathway for three consecutive qualifications which culminate in the Further Education and Training Certificate: Mechanical Handling (Rigging) Level 4. Some of the international qualifications investigated, do not lead to three different qualifications, but culminate in one qualification over a four-year period and are commonly called traditional apprenticeships.

It is only in the vocational context, that we find the tendency to "break up" the traditional trades into different levels of learning and subsequent occupational descriptors. This practice is endemic of those countries which have a close association with outcomes-based methodology and standards-based qualifications development.

The Mechanical Rigging qualifications (Level 2, Level 3 and Level 4 respectively) collectively compare well to similar apprenticeship and vocational education and training (VET) international qualifications.

In benchmarking the Mechanical Handling (Rigging) qualification series, against international qualifications, examples in different parts of the world were investigated. The country which dominates the international standard for mechanical handling (rigging) is the United Kingdom. For centuries Britain's maritime influence has simultaneously developed best practices in rope-

work (the origins of rigging), the application of lifting equipment and the development of a regulatory infrastructure which is still evident today. This influence has cascaded into Commonwealth Countries (examples, Singapore; Malaysia; Australia; New Zealand; India) and includes the United States of America (USA).

Although countries across the globe have independent regulatory frameworks pertaining to mechanical handling, the lifting and moving of loads and the application of lifting equipment, there is a close resemblance to the British equivalent (The Lloyd's Register: Code for Lifting Appliances, the Lifting Operations and Lifting Equipment Regulations of 1998: LOLER and the applicable British Standards). Currently, this mechanical handling standard is applicable to the maritime, offshore oil and gas exploration, mining, civil engineering and construction and manufacturing and engineering sectors across the globe.

2. Countries and qualifications investigated:

United Kingdom (England and Scotland) from www.ecitb.org.uk:

The Scottish Qualifications Authority (SQA) is responsible for overseeing the Scottish system for Vocational Qualifications and Further Education. Scottish Vocational Qualifications (SVQ) provide a guarantee that someone can do a real job to the standard required by employers. They have been developed in partnership with industry and are specifically designed to meet the needs of employers and employees alike. SVQs are part of a concept designed to recognise competence in the workplace.

In engineering, the classification of SVQs are by occupational area and are at 5 distinct Levels:

- Level 1: Operations.
- Level 2: Operations and Higher Skills.
- Level 3: Technicians and Craft Employees.
- Level 4: Technician Engineer.
- Level 5: Professional and Chartered Engineers.

Each SVQ is made up of a number of units of competence, which describe what is expected of a competent candidate. In turn the units are broken down into elements of competence which are the standards the candidate should be able to achieve.

The qualification from the National and Scottish Vocational Qualifications (N/SVQ) which relates to "Rigging", is the standards-based programme-N/SVQ Moving Loads Apprenticeship Programme. Programme description:

The apprenticeship programme, run under the NASEC (National Apprenticeship Scheme for Engineering and Construction), combines skills-specific training for rigging & lifting, with engineering VQ's through a Further Education Qualification. Apprentices complete the provider-based ("centre-based") part of the programme and then transfer to employed status for completion of their apprenticeships with stakeholders operating in the offshore oil & gas and engineering construction sectors.

Apprentices are employed from the outset and follow the SEMTA's (Science Engineering and Manufacturing Technologies Alliance) Modern Apprenticeship framework:

- Learners start with a Level 2 programme at a training centre followed by a Level 3 within a company.
- This vocational programme is combined with a third component, Further Education, which together adds up to two vocational awards (SVQ Level 2 and 3), an educational qualification and the SEMTA Modern Apprenticeship (MA) Certificate. A typical apprenticeship comprises:
 - SVQ Level 2 (minimum of 26 weeks at an accredited training centre).

- SVQ Level 3 (in the workplace with monitoring and assessments by a training officer).
- An educational qualification for example, National Certificate (NC) in Engineering Practice (day release at a training centre).

Entry qualifications vary from company to company but in most cases Standard Grades at Level 3 or above in Maths, Science, English and Craft related subjects are sought by employers.

United States:

In the United States model, the "rigger" apprenticeship is achieved over a four-year period and is similar to the traditional apprenticeship system in South Africa. The methodology is competency-based as opposed to outcomes-based.

The programme content however, is similar to the broad context of Mechanical Handling (Rigging) Levels 2, 3 and 4.

Conclusion: The National Certificate: Mechanical Handling (Rigging) qualification Level 2 is in line with the US example for year 1/2 of the apprenticeship programme.

Australia (www.ntis.gov.au) in terms of the Australian Quality Training Framework (AQTF):

"Australian Apprenticeships" (formerly "New Apprenticeships"), embrace all apprenticeships and traineeships. They combine time at work with training and can be full-time, part-time or school-based.

The change of name and appearance is the first step in a range of improvements to be introduced in Australian Apprenticeships. The qualifications for "Riggers" are covered within the apprenticeship format, of which the duration is 4 years.

African Comparability:

Southern African Development Community (SADC): Zimbabwe and Botswana:

Alignment with the United Kingdom's model of Vocational Education and Training (VET), through the London City and Guilds qualification framework and the National Vocational Qualification system (NVQ) exists: The Botswana National Qualifications Act was passed in 1998. At this present time, focus on the development of standards-based qualifications through a Botswana Vocation Education and Training System (BVET) has revolved around the Wholesale and Retail and Tourism sectors.

Currently, Botswana riggers are trained through the apprenticeship system. The length and duration of the practical and theoretical components differ slightly to the South African apprenticeship system, but the learning competencies are similar. The context focuses on the diamond mining sector and small local manufacturing and engineering industries.

East African Community (EAC):

The three member states of the EAC; Kenya, Tanzania and Uganda, are currently engaged in the harmonisation of education and training systems within the EAC. Currently, no qualification infrastructure exists.

Canada:

Information regarding training was also found on the website of the North Alberta Institute of Technology and the College of The Rockies. The full "rigger" qualification is obtained over a four-year period. The "job description" of the "rigger" is similar across the international arena.

"Riggers" at Certificate Level 1 and 2 are able to select the proper sling; sling loads; and direct and position loads. They can work safely within the capability of the crane and with straightforward loads.

Conclusion: The Canadian qualifications related to Mechanical Handling (Rigging) can be used interchangeably with the qualifications developed for the various South African industry sectors, and serve a similar purpose.

New Zealand (www.kiwiquals.govt.nz) in terms of the New Zealand Qualifications Framework (NZQF):

National Certificate in Rigging with strands in the Certificate in Basic Rigging Level 1 and 2 (selection of the relevant strand from the Certificate in Basic, Intermediate and Advanced Rigging Level 4).

3. Summary of international comparisons with NC Mechanical Handling (Rigging) Level 2:

The National Certificate: Mechanical Handling (Rigging) Level 2 compares well to all the qualifications investigated, with an overarching comparison covering:

Content:

The qualifications from the various countries all address the range of mechanical handling competencies included in Level 2, thus attending to the need to fulfil the requirements of being introductory of nature.

The content of the first/second year (Level) of the mechanical Rigging qualifications across the globe, relates favourably to the content of Mechanical Handling (Rigging) Level 2 and the learning assumed to be in place:

Progression:

The international qualifications investigated, all address a progression of competencies, e.g. Level 2: Introduction to mechanical handling technology and the ability to select the proper sling; sling loads; and direct and position loads. They can work safely within the capability of the crane and with straightforward loads.

The Level 3 strand progresses learners to carry out all basic functions; rig cranes, conveyers, and similar equipment for heavy lifts; handle the associated rope work; and work at heights.

The Level 4 strand progresses learners to an "Advanced Rigging" strand in which they are able to meet the top equipment usage level in the rigging industry, such as guyed derricks, gin poles, cable ways and fabricated hung scaffolds. They are also able to plan and supervise complex operations. This is the highest level qualification available in this industry.

Demonstration of Work Practices:

Level 2: Holders of the National Certificate with the Rigging Level 2 strand are able to select the proper sling; sling loads; and direct and position loads. They can work safely within the capability of the crane and with straightforward loads. Conclusion: These outcomes are covered within the Level 2 certificate developed for South Africa.

Learning delivery:

The learning delivery process in all the examples included on-the-job (practical) and off-the-job (theoretical) components. The methodology is predominantly outcomes-based, although there is overwhelming evidence of traditional competency-based practice in the USA.

Outcomes-Based Methodology:

All the examples found either directly or indirectly comply with principles of outcomes-based learning, particularly in terms of outcomes representing meaningful units of learning and assessment being conducted continuously (formatively). There is generally a final integrated assessment, typically called a certificate of qualification (trade test certificate), where the candidate is required to demonstrate specific and core (cross-field) knowledge and skills.

Apprenticeships and VET programme-alignment:

In the majority of all the examples found, learning is vocational-based. In some countries (England, Scotland, New Zealand and Australia) these are called "Modern Apprenticeships" (Cassels Report: 2001). These take the form of two categories, namely a programme-led apprenticeship where learners are able to follow a vocational programme at a college and then seek employment as trainees/apprentices/interns in order to qualify as artisans; and an employer-led apprenticeship, in which learners are engaged in a formal contract of learning and most learning is workplace-based. In most cases learners "earn while they learn".

Application (Purpose):

As is the intention with the South African qualifications, the international qualifications all prepare learners for working in a wide variety of industry sectors or contexts.

Status:

In all countries researched, rigging apprenticeship numbers have declined, thus making "riggers" sought after across the globe.

4. Concluding remarks:

The outcomes of the National Certificate: Mechanical Handling (Rigging) Level 2 certificate developed for South Africa compares favourably with the rest of the international community and by every indication, is compatible with those countries who engage with outcomes-and standards-based qualifications.

5. Reference documents:

- 5.1 Availability of skilled labour in selected occupations in Western Australia (Shah. Cooney, Long and Burke: 2005).
- 5.2 National Guidelines on Cross-Sectoral Qualification Linkages (Australian Qualifications Framework (AQF) Implementation Handbook: 2002).
- 5.3 Lifting and Mechanical Handling Guidelines (Step Change in Safety: ERS Network Off-shore Oil and Gas Industry: UK).
- 5.4 Policy Watch: Apprenticeship framework: A Change in Design (Sian Owen: 2005; Authorised by Steve Besley-UK).
- 5.5 Training in Engineering Construction Skills: Employers Guide (TECSkills and the ECITB-UK:2007).
- 5.6 Modern Apprenticeships: The Way to Work (Cassels Report: 2001): UK.
- 5.7 Role of Apprenticeship in VET System: The Case of Botswana (Ahmad: 2003) at Conference on the Reform of Technical and Vocational Education and Training (TVET) Gaborone, Botswana.

5.8 Challenges Facing Vet Transformation in the SADC Region (Akoojee and McGrath: 2003 HSRC-Pretoria) at the Conference on the Reform of Technical and Vocational Education and Training (TVET) in Gaborone, Botswana.

6. Reference Web-sites:

www.ecitb.org.za; www.ntis.gov.au; www.bota.org.bw; www.kiwiquals.govt.nz; www.bcit.ca; www.nait.ca; www.cotr.bc.ca
www.edexcel.co.uk; www.tullontraining.co.uk; www.doleta.com; www.tecskills.org.za.

ARTICULATION OPTIONS

This qualification was designed to enable qualifying learners to move from one engineering context to another and still get recognition for successful learning achievements in the previous context. This means that credit accumulation towards certification could be obtained across industries.

Vertical articulation:

- ID 59730: National Certificate: Mechanical Handling (Rigging), NQF Level 3.

Horizontal articulation:

Fundamental learning at this level applies to equivalent credit accrual for engineering-related qualifications at NQF Level 2.

Core and Elective learning at this level applies to equivalent credit accrual for some unit standards in most engineering qualifications where applicable, eg.:

- ID 23254: National Certificate: Mechanical Engineering: Fitting and Machining, NQF Level 2.
- ID 57881: National Certificate: Welding Application and Practice, NQF Level 2.
- ID 48961: National Certificate: Construction: Crane Operations, NQF Level 2.

MODERATION OPTIONS

- Anyone assessing a learner or moderating the assessment of a learner against this Qualification must be registered with an appropriate Education and Training Quality Assurance Body (ETQA) or with an ETQA which has a Memorandum of Understanding (MOU) with the relevant ETQA.

- Any institution offering learning that will enable the achievement of this qualification must be accredited as a Training Provider with the relevant ETQA or with an ETQA that has a Memorandum of Understanding (MOU) with the relevant ETQA.

- Moderation of assessment will be overseen by the relevant ETQA or by an ETQA that has a Memorandum of Understanding (MOU) with the relevant ETQA according to that ETQA's guidelines for assessment and moderation.

- Moderation includes both internal and external moderation of assessment/s at the exit points of the qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual unit standards as well as in exit level outcomes described in this Qualification.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

The following criteria should be applied by a relevant ETQA as a minimum requirement:

1. Assessors should be in possession of an appropriate qualification, namely:

- Further Education and Training Certificate: Mechanical Handling (Rigging) at NQF Level 4 and a minimum period of related experience as specified by the relevant ETQA.
- An artisan qualification - Rigger (Trade test certificate or completed contract of apprenticeship) with a minimum period of related experience as specified by the relevant ETQA.
- Subject matter experience, which may be established through recognition of prior learning (RPL).

2. Registration as an assessor with the relevant Education and Training Quality Assurance Body.

3. Proven inter-personal skills and the ability to:

- Maintain national and local industry standards.
- Act in the interest of the learner.
- Understand the need for transformation to redress the legacies of the past, and respect the cultural background and language of the learner.

NOTES

In terms of learning and assessment within the chemical industry sector, this qualification replaces qualification 13696, "Electrics: Chemical Instrumentation", Level 2, 120 credits.

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	119463	Access and use information from texts	Level 2	5
Fundamental	9009	Apply basic knowledge of statistics and probability to influence the use of data and procedures in order to investigate life related problems	Level 2	3
Fundamental	7480	Demonstrate understanding of rational and irrational numbers and number systems	Level 2	3
Fundamental	119454	Maintain and adapt oral/signed communication	Level 2	5
Fundamental	12444	Measure, estimate and calculate physical quantities and explore, describe and represent geometrical relationships in 2-dimensions in different life or workplace contexts	Level 2	3
Fundamental	119460	Use language and communication in occupational learning programmes	Level 2	5
Fundamental	7489	Use mathematics to investigate and monitor the financial aspects of personal and community life	Level 2	2
Fundamental	9007	Work with a range of patterns and functions and solve problems	Level 2	5
Fundamental	119456	Write/present for a defined context	Level 2	5
Core	116283	Demonstrate knowledge of and apply regulatory requirements pertaining to crane operation	Level 2	5
Core	253595	Direct the operation of an overhead crane	Level 2	3
Core	253591	Identify and use fibre ropes	Level 2	4
Core	12477	Identify engineering materials, their characteristics and applications and common metal tests used in engineering	Level 2	4
Core	253575	Inspect, use and care for manual lifting equipment and tackle	Level 2	5
Core	13220	Keep the work area safe and productive	Level 2	8
Core	253582	Lift and move a load using manual lifting equipment and tackle	Level 2	8
Core	253555	Manufacture basic rigging hand tools	Level 2	4
Core	13214	Operate and monitor a drilling machine to produce simple components	Level 2	6
Core	12215	Read, interpret and produce basic engineering drawings	Level 2	6
Core	119744	Select, use and care for engineering hand tools	Level 2	8
Core	12476	Select, use and care for engineering measuring equipment	Level 2	4
Core	12219	Select, use and care for engineering power tools	Level 2	6
Elective	9839	Apply and maintain safety in an electrical environment	Level 1	5
Elective	253774	Adhere to basic occupational health and safety practices pertaining to shaft operations	Level 2	3

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Elective	252373	Apply basic concepts of cargo care	Level 2	7
Elective	10641	Carry out a detailed inspection on enhanced safety apparatus	Level 2	3
Elective	243067	Cut materials using the oxy-fuel gas cutting process (manual cutting)	Level 2	6
Elective	253374	Describe the chemical industry's composition, its regulatory requirements and communication techniques	Level 2	2
Elective	12465	Develop a learning plan and a portfolio for assessment	Level 2	6
Elective	119061	Erect, alter/reposition and dismantle load bearing scaffolding	Level 2	13
Elective	12466	Explain the individual's role within business	Level 2	4
Elective	253674	Install scraper rigs and rig scraper ropes in an underground workplace	Level 2	4
Elective	253714	Install scraper ropes onto scraper winch drums	Level 2	2
Elective	110163	Lift and move a load using a Tugger Winch	Level 2	4
Elective	253754	Load and remove rolling stock into and from a shaft conveyance	Level 2	8
Elective	253694	Load and unload persons into and from a shaft conveyance	Level 2	4
Elective	253715	Load long material into a shaft conveyance	Level 2	3
Elective	253659	Make up a steel wire rope specimen for testing purposes	Level 2	2
Elective	116231	Operate a cab controlled overhead crane	Level 2	8
Elective	116254	Operate a mobile crane	Level 2	20
Elective	116235	Operate a pendant controlled overhead crane	Level 2	5
Elective	116255	Operate a tower crane	Level 2	20
Elective	116253	Operate a truck mounted loader crane	Level 2	20
Elective	242981	Operate defined purpose lift trucks	Level 2	4
Elective	8420	Operate in a team	Level 2	4
Elective	242976	Operate overhead/gantry cranes	Level 2	5
Elective	253581	Place and move a load by utilising rollers	Level 2	2
Elective	253775	Prepare a conveyance for shaft examination and repairs	Level 2	2
Elective	253635	Replace the bucket assembly of a dragline	Level 2	2
Elective	253638	Sling and communicate during crane operations	Level 2	4
Elective	253600	Use a side-boom to lift, lower and carry materials	Level 2	5
Elective	243063	Weld carbon steel work-pieces using the shielded metal arc welding process in the down-hand position.	Level 2	15
Elective	243072	Weld workpieces using the oxy-acetylene gas welding process in the downhand position	Level 2	10
Elective	253603	Manoeuvre a load using mechanical lifting equipment	Level 3	7
Elective	253657	Re-rail rolling stock by means of jacks	Level 3	3

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION**None**



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:**National Certificate: Mechanical Handling (Rigging)**

SAQA QUAL ID		QUALIFICATION TITLE	
59730		National Certificate: Mechanical Handling (Rigging)	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
QUALIFICATION TYPE	FIELD	SUBFIELD	
National Certificate	6 - Manufacturing, Engineering and Technology	Engineering and Related Design	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	121	Level 3	Regular-Unit Stds Based

This qualification replaces:

Qual ID	Qualification Title	NQF Level	Min Credits	Replacement Status
13694	Mechanics: Chemical Rigging	Level 3	120	Will occur as soon as 59730 is registered

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:

This trade-related qualification will allow a learner in the engineering industry to obtain national certification in mechanical handling. It is a stepping stone between the NQF Level 2 and the Further Education and Training Certificate in Mechanical Handling (Rigging). The learning outcomes build on the knowledge, skills and attributes of the Level 2 qualification and prepare learners for the pathway to artisanship at NQF Level 4.

Typical entrants to this qualification could be:

- Learners who have completed the Level 2 qualification and who are engaged on a learning path towards the Level 4 qualification. While work experience after achieving the Level 2 qualification may be advisable, this is not necessarily a requirement.
- Individuals currently working in an industry sector, who have acquired lifting and mechanical handling knowledge and skills at the appropriate level and who have the potential to complete this qualification successfully (RPL candidates).

This Level 3 qualification enables the learner to work with a degree of responsibility during the performance of lifting/moving tasks without working under direct supervision. The status and relevance of this qualification will attract and retain an acceptable calibre of learners and employees, and is the second step along a recognised and meaningful career path.

This qualification can also be attained by means of RPL (Recognition of Prior Learning), thus acknowledging existing knowledge, skills and experience. RPL will not only allow an individual to

gain credits towards this qualification, but will also allow movement across different occupational areas where it applies.

People credited with this qualification contribute to the rendering of lifting and mechanical handling tasks by the application of knowledge and skills. They are able to:

- Understand and use steel wire ropes and mechanical lifting equipment.
- Use specialized methods and techniques to perform lifting and mechanical handling tasks by using lifting machinery (mobile crane/s) and mechanical lifting equipment.
- Conduct routine maintenance and inspections on lifting machinery (overhead cranes) and equipment.
- Display a leadership role in the directing of lifting and mechanical handling tasks.
- Secure loads/cargo for transportation.

The Unit Standards in this unit standards-based qualification are intended as building blocks for the further development of skills that will make the learner a more fulfilled, informed, efficient and cost effective worker in the industry. This should result in more efficient service to the customer and make the industry more competitive in the global market.

After completing this qualification and gaining appropriate working experience, a learner will then be able to progress to the Level 3 qualification, and later to the Level 4 qualification.

Rationale:

This qualification serves the needs of society and the economy by providing support services in the mechanical handling of machinery, structures, goods and equipment.

Mechanical handling is vital to the existence, performance and growth of the South African economy. A healthy economy is in turn vital to the upliftment of the country, its industrial infrastructure and its population.

Stakeholders within the various industry sectors invest considerable sums of money in plant, equipment, processes, raw materials and other resources. These investments can only be justified if there is an assurance that the goods, machinery, equipment and structures are lifted, moved and placed with the utmost efficiency by individuals who are trained and qualified to do so.

Similarly, maintenance shutdowns on process plant installations, the moving of goods at a shipping container terminal and the haulage of materials in the mining industry, all need a degree of efficiency in lifting and mechanical handling which will ensure a minimum impact on costs and productivity.

For this purpose, competent artisans are required to meet the exacting legislative and hazardous nature of most lifting and mechanical handling projects.

Through its design, this qualification will meet the needs of existing learners in the lifting and mechanical handling sector who require technical expertise and essential knowledge needed to earn a formal qualification relevant to the occupation. The qualification facilitates access from previously disadvantaged groups and other learners to acquire the technical knowledge and skills that are required.

The National Certificate: Mechanical Handling (Rigging) Level 3 will produce competent learners who are able to contribute to improved productivity and efficiency within the engineering support environment. They will be able to work according to legislative, regulatory and quality assurance requirements.

This qualification will enhance the status, productivity and employability of the learner within the engineering sector as well as contribute to quality and productivity. This allows for greater access, progression, portability and mobility within and between the different sectors for which the engineering sector provides support services.

RECOGNIZE PREVIOUS LEARNING?

Y

LEARNING ASSUMED IN PLACE

This qualification assumes learners obtained a National Certificate in Mechanical Handling (Rigging) NQF Level 2 or an equivalent qualification. If the learner does not already have such a qualification, learning in preparation for this qualification would also have to include:

- Language and Maths at NQF Level 2.
- Introductory concepts of Science and Technology.
- An ability to apply manual lifting methods.
- An understanding of procedures related to workplace relationships, roles and responsibilities.

Recognition of Prior Learning:

This qualification can be obtained wholly or in part through the recognition of prior learning (RPL). The learner should be thoroughly briefed on the process. Support and guidance should be provided. The process should not be so onerous as to prevent learners from taking up the RPL option in obtaining the qualification.

Access to the Qualification:

Access to this qualification is open. However, it is preferred that learners would have completed a National Certificate in Mechanical Handling (Rigging) NQF Level 2 or an equivalent qualification.

QUALIFICATION RULES**Fundamental Component:**

The Fundamental Component consists of Unit Standards in:

- Communications at NQF Level 3 to the value of 20 credits.
- Mathematical Literacy at NQF Level 3 to the value of 16 credits.
- All Unit Standards in the Fundamental Component are compulsory.

Core Component:

The Core Component consists of Unit Standards to the value of 55 credits all of which are compulsory.

Elective Component:

The Elective Component consists of a number of specializations each with its own set of Unit Standards. Learners are to choose a specialization area and must choose Elective Unit Standards to the value of 30 credits from the Elective Unit standards listed under that specialization so as to attain a minimum of 121 credits for this qualification.

Specialisation area 1:**Learning Programme:**

Rigging (Chemical Industry).

Learners must do Unit Standard ID 244077 and must choose additional Elective Unit Standards from the list below to give a minimum of 30 credits for the Elective Component:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 244077; Demonstrate understanding of chemicals in a processing environment; Level 2; 6 Credits.
- Elective; ID 253615; Lift and move a load using the pick and carry method; Level 2; 4 Credits.
- Elective; ID 253880; Adapt to working in a client's work environment; Level 3; 3 Credits.
- Elective; ID 113981; Arrange and complete lifts on-site using lifting equipment; Level 4; 15 Credits.
- Elective; ID 253597; Lift and turn a load; Level 3; 4 Credits.
- Elective; ID 14920; Participate in groups and/or teams to recommend solutions to problems; Level 4; 3 Credits.

Total: 34 Credits:

Specialisation area 2:

Learning Programme:

Rigging (Electrical Power Generation).

Learners must do Unit Standard ID 10195 and must choose additional Elective Unit Standards from the list below to give a minimum of 30 credits for the Elective Component:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 10195; Apply Engineering Principles and concepts in a Power Generation Process Plant; Level 3; 5 Credits.
- Elective; ID 253615; Lift and move a load using the pick and carry method; Level 2; 4 Credits.
- Elective; ID 253880; Participate in groups and/or teams to recommend solutions to problems; Level 4; 3 Credits.
- Elective; ID 113981; Arrange and complete lifts on-site using lifting equipment; Level 4; 15 Credits.
- Elective; ID 253597; Lift and turn a load; Level 3; 4 Credits.
- Elective; ID 14920; Participate in groups and/or teams to recommend solutions to problems; Level 4; 3 Credits.

Total = 33 Credits.

Specialisation Area 3:

Learning Programme:

Manufacturing, Engineering and Related Industries.**Rigging (Manufacturing, Engineering and Related Industries).**

Learners must choose Elective Unit Standards from the list below to give a minimum of 30 credits for the Elective Component:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 253615; Lift and move a load using the pick and carry method; Level 2; 4 Credits.
- Elective; ID 14920; Participate in groups and/or teams to recommend solutions to problems; Level 4; 3 Credits.
- Elective; ID 253880; Adapt to working in a client's work environment; Level 3; 3 Credits.
- Elective; ID 113981; Arrange and complete lifts on-site using lifting equipment; Level 4; 15 Credits.
- Elective; ID 116981; Conduct advanced tower crane operations; Level 3; 20 Credits.
- Elective; ID 9526; Manage basic business finance; Level 3; 6 Credits.
- Elective; ID 12118; Operate ship cargo lifting appliances; Level 3; 10 Credits.
- Elective; ID 113998; Carry out rigging operations on a vessel; Level 3; 8 Credits.
- Elective; ID 113995; Work with fibre ropes, wire ropes and chains on a vessel; Level 3; 8 Credits.
- Elective; ID 113994; Transfer and secure cargo and stores; Level 3; 8 Credits.
- Elective; ID 253597; Lift and turn a load; Level 3; 4 Credits.

Total = 88 Credits.

Specialisation area 4:

Learning Programme:

Rigging (Mining Industry).

Learners must choose Elective Unit Standards from the list below to give a minimum of 30 credits for the Elective Component:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 253615; Lift and move a load using the pick and carry method; Level 2; 4 Credits.
- Elective; ID 253880; Adapt to working in a client's work environment; Level 3; 3 Credits.
- Elective; ID 119042; Erect, alter/reposition and dismantle access scaffolding; Level 2; 13 Credits.
- Elective; ID 14920; Participate in groups and/or teams to recommend solutions to problems; Level 4; 3 Credits.
- Elective; ID 113981; Arrange and complete lifts on-site using lifting equipment; Level 4; 15 Credits.
- Elective; ID 117033; Demonstrate knowledge of wire rope, rigging accessories, anchor systems and rigging in cable yard operations; Level 3; 3 Credits.
- Elective; ID 244366; Remove broken rock by means of a suction unit; Level 2; 3 Credits.
- Elective; ID 253637; Replace steelwork in a shaft; Level 3; 3 Credits.
- Elective; ID 253639; Replace a conveyance in a shaft; Level 2; 2 Credits.
- Elective; ID 253585; Apply lubrication to a steel wire rope; Level 2; 2 Credits.
- Elective; ID 253597; Lift and turn a load; Level 3; 3 Credits.

Total = 54 Credits.

EXIT LEVEL OUTCOMES

1. Perform lifting and mechanical handling tasks by using techniques involving steel wire ropes and mechanical lifting equipment.
2. Supervise the lifting, moving and placing of loads according to work instructions using lifting machinery and equipment.
3. Demonstrate an understanding of mechanical handling equipment maintenance.

4. Solve problems by communicating in verbal or written form with peers, members of supervisory/management levels and others.

Critical Cross-Field Outcomes:

These are embedded in the unit standards, which make up the qualification and are thus also reflected in the Exit Level Outcomes of the qualification.

The critical cross-field outcomes are supported by the exit level outcomes as follows:

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

- Related to the lifting and moving of loads using steel wire ropes and mechanical lifting equipment and tackle.
- Related to the maintenance of mechanical lifting machinery, equipment and tackle.
- Solving problems during the execution of lifting and moving a load.

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

- All tasks and work-related experience are performed within a team environment.
- Taking into account, the safety of others.
- Communicating with production, quality control and supervisory personnel and/or clients.

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

- Related to planning and preparation during the lifting and moving of loads.

Collecting, analyzing, organizing and critically evaluating information:

- Related to supervision of lifting activities.
- Completion of technical reports related to the job activity.
- Solve familiar problems during the execution of lifting tasks.

Communicating effectively using visual, mathematical and/or language skills:

- During supervision and the execution of job activities.
- Execution of commands and completion of technical reports related to the job activity.
- Communicating as a part of a team.

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

- During the lifting and moving of loads.
- Relating to the safety of others.
- Solving problems and applying science and technology to the rigging activity.

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

- Integrating the rigging task with the plant installation's functionality.
- Solving problems through the integration of various sources of information.

- Demonstrating and understanding of related systems through the use of general and specific channels of communication when dealing with peers, production, quality control and supervisory personnel and/or clients.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria for Exit Level Outcome 1:

- 1.1 Steel wire ropes are identified and splicing and joining methods are applied according to a pre-arranged instruction/s, in order to use them for a lifting and mechanical handling task.
Range: Joining methods includes splicing and clamping (wire rope clamps, u-and double bolt types).
- 1.2 Mechanical lifting equipment is selected, inspected and used to lift and move a load according to a given task by applying floating techniques.
- 1.3 Lifting procedures are applied in the handling of the load in order to avoid damage to the load and according to safe load and working load limits to ensure the safety of personnel.

Associated Assessment Criteria for Exit Level Outcome 2:

- 2.1 The supervision of the lifting task is performed according to worksite practice and project specifications, with particular focus on lifting procedures related to the use of a crane.
- 2.2 A powered lifting machine (mobile crane) is directed in order to lift, move and place the load according to standard work-site practice, by making the necessary calculations and taking into account, ground and other lifting conditions.
- 2.3 The lifting task is supervised according to work instructions and leadership is demonstrated in terms of the coordination of the lifting team and the available resources.

Associated Assessment Criteria for Exit Level Outcome 3:

- 3.1 Lifting machinery and equipment is inspected, maintained and routine lubrication procedures are performed by demonstrating knowledge of the location of potential faults and applicable corrective action.
- 3.2 Lifting machinery and equipment are maintained according to manufacturers' specifications, by showing an ability to read and interpret diagrams in order to identify lubrication areas.
- 3.3 Fault-finding of mechanical handling equipment and machinery is done in relation to the overall condition.
- 3.4 Various options are explained and solutions are considered before an appropriate solution is chosen in relation to the maintenance history.
- 3.5 Routine problems on various lifting and mechanical handling machinery and equipment are explained as they are encountered in operational circumstances.

Associated Assessment Criteria for Exit Level Outcome 4:

- 4.1 Verbal communication is used in the interaction with other role players in the lifting and mechanical handling process to determine and understand the extent of problems, find and implement solutions and giving and getting feedback.
- 4.2 Written communication is used in order to understand, evaluate and report on lifting and mechanical handling problems.
- 4.3 Technical reading skills are applied in order to understand engineering and related information.
- 4.4 Technical writing skills are applied in order to record engineering and related information.

Integrated Assessment:

- Assessment practices must be open transparent fair valid and reliable and should ensure that no learner is disadvantaged in any way whatsoever, so that an integrated approach to assessment is incorporated into the qualification.

- Learning teaching and assessment are inextricably interwoven. Whenever possible the assessment knowledge skills attitudes and values shown in the unit standards should be integrated.
- Assessment of Communication and Mathematical Literacy should be integrated as far as possible with other aspects and should use practical administration 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 or will work. 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 a range of summative assessment methods and assess combinations of practical, applied, foundational and reflective competencies.
- Assessors must assess and give credit for the evidence of learning that has already been acquired and could include formal, non-formal learning and work experience.
- Assessment should ensure that all specific outcomes, embedded knowledge and critical cross-field outcomes are evaluated in an integrated manner.
- Integrated assessment instruments may combine practical and theoretical components of assessment with the following unit standards in relation to the exit level outcomes:

Exit Level Outcomes and Associated Unit Standards:

1. Perform lifting and mechanical handling tasks by using techniques involving steel wire ropes and mechanical lifting equipment according to manufacturers' specifications and work instructions.

Category; ID; Title; Level; Credits:

- Core; ID 13223; Apply safety, health and environmental protection procedures; Level 3; 6 Credits.
- Core; ID 9530; Manage work time effectively; Level 3; 3 Credits.
- Core; ID 9322; Work in a team; Level 3; 3 Credits.
- Core; ID 253654; Perform pre-use maintenance and inspection on lifting machinery and equipment; Level 3; 4 Credits.
- Core; ID 253658; Perform a lifting task by means of a mobile crane; Level 3; 8 Credits.
- Core; ID 253640; Perform a lifting task using floating method; Level 3; 8 Credits.
- Core; ID 253554; Identify and use steel wire ropes; Level 3; 12 Credits.
- Core; ID 253603; Manoeuvre a load using mechanical lifting equipment; Level 3; 12 Credits.
- Core; ID 253601; Secure a load for transportation; Level 2; 4 Credits.
- Core; ID 119472; Accommodate audience and context needs in oral/signed communication ; Level 3; 5 Credits.
- Core; ID 9528; Communicate with clients; Level 3; 3 Credits.
- Core; ID 12488; Complete feasibility and commissioning reports; Level 3; 3 Credits.
- Fundamental; ID 9010; Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations; Level 3; 2 Credits.

2. Supervise the lifting, moving and placing of loads according to work instructions using lifting machinery and equipment.

Category; ID; Title; Level; Credits:

- Core; ID 13223; Apply safety, health and environmental protection procedures; Level 3; 6 Credits.
- Core; ID 9530; Manage work time effectively; Level 3; 3 Credits.
- Core; ID 9322; Work in a team; Level 3; 3 Credits.
- Core; ID 253654; Perform pre-use maintenance and inspection on lifting machinery and equipment; Level 3; 4 Credits.
- Core; ID 253658; Perform a lifting task by means of a mobile crane; Level 3; 8 Credits.
- Core; ID 253640; Perform a lifting task using floating method; Level 3; 8 Credits.
- Core; ID 253603; Manoeuvre a load using mechanical lifting equipment; Level 3; 12 Credits.
- Core; ID 253601; Secure a load for transportation; Level 2; 4 Credits.
- Core; ID 9528; Communicate with clients; Level 3; 3 Credits.
- Core; ID 12488; Complete feasibility and commissioning reports; Level 3; 3 Credits.
- Fundamental; ID 9010 ; Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations; Level 3; 2 Credits.

3. Demonstrate an understanding of mechanical handling equipment maintenance and respond to equipment maintenance requirements, in terms of increased levels of safety, health, quality and efficiency.

Category; ID; Title; Level; Credits:

- Core; ID 13223; Apply safety, health and environmental protection procedures; Level 3; 6 Credits.
- Core; ID 9530; Manage work time effectively; Level 3; 3 Credits.
- Core; ID 9322; Work in a team; Level 3; 4 Credits.
- Core; ID 253654; Perform pre-use maintenance and inspection on lifting machinery and equipment; Level 3; 4 Credits.
- Core; ID 253658; Perform a lifting task by means of a mobile crane; Level 3; 8 Credits.
- Core; ID 253640; Perform a lifting task using floating method 3; 8 Credits.
- Core; ID 253554; Identify and use steel wire ropes; Level 3; 12 Credits.
- Core; ID 253603; Manoeuvre a load using mechanical lifting equipment; Level 3; 12 Credits.
- Core; ID 9528; Communicate with clients; Level 3; 3 Credits.
- Core; ID 12488; Complete feasibility and commissioning reports; Level 3; 3 Credits.

4. Solve problems by communicating in verbal or written form with peers, members of supervisory/management levels and others.

Category; ID; Title; Level; Credits:

- Core; ID 9530; Manage work time effectively; Level 3; 3 Credits.
- Core; ID 9322; Work in a team; Level 3; 3 Credits.
- Core; ID 253654; Perform pre-use maintenance and inspection on lifting machinery and equipment; Level 3; 4 Credits.
- Core; ID 253658; Perform a lifting task by means of a mobile crane; Level 3; 8 Credits.
- Core; ID 253640; Perform a lifting task using floating method 3; 8 Credits.
- Core; ID 253554; Identify and use steel wire ropes; Level 3; 12 Credits.
- Core; ID 253603; Manoeuvre a load using mechanical lifting equipment; Level 3; 12 Credits.
- Core; ID 119472; Accommodate audience and context needs in oral/signed communication; Level 3; 5 Credits.
- Core; ID 9528; Communicate with clients; Level 3; 3 Credits.
- Core; ID 12488; Complete feasibility and commissioning reports; Level 3; 3 Credits.

- Fundamental; ID 9010; Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations; Level 3; 2 Credits.

INTERNATIONAL COMPARABILITY

1. Introduction:

In benchmarking the Mechanical Handling (Rigging) qualification series, against international qualifications, examples in different parts of the world were investigated. The country which dominates the international standard for mechanical handling (rigging) is the United Kingdom. For centuries Britain's maritime influence has simultaneously developed best practices in rope-work (the origins of rigging), the application of lifting equipment and the development of a regulatory infrastructure which is still evident today. This influence has cascaded into Commonwealth Countries (examples, Singapore; Malaysia; Australia; New Zealand; India) and includes the United States of America (USA).

Although countries across the globe have independent regulatory frameworks pertaining to mechanical handling, the lifting and moving of loads and the application of lifting equipment, there is a close resemblance to the British equivalent (The Lloyd's Register - Code for Lifting Appliances, the Lifting Operations and Lifting Equipment Regulations of 1998: LOLER and the applicable British Standards). Currently, this mechanical handling standard is applicable to the maritime, offshore oil and gas exploration, mining, civil engineering and construction and manufacturing and engineering sectors across the globe.

During this investigation into international comparability, a variety of examples in different parts of the world were evaluated.

2. Countries and qualifications investigated:

United Kingdom (England and Scotland): From www.ecitb.org.uk:

The qualification from the National and Scottish Vocational Qualifications (N/SVQ) which relates to standards-based programme is the N/SVQ Maintaining Plant and Systems: The "Rigging" strand at SVQ Level 3 is usually completed within a workplace context, with monitoring and assessments performed by a training officer).

The National Certificate: Mechanical Handling (Rigging) Level 3 is not in alignment with the N/SVQF owing to the differences in level description. However, the South African National Certificate: Mechanical Handling (Rigging) Level 3 appears to straddle the N/SVQ (Moving Loads) between Levels 3 and 4.

African Comparability:

Southern African Development Community (SADC): Zimbabwe and Botswana:

Alignment with the United Kingdom's model of Vocational Education and Training (VET), through the London City and Guilds qualification framework and the National Vocational Qualification system (NVQ): The Botswana National Qualifications Act was passed in 1998. At this present time, focus on the development of standards-based qualifications through a Botswana Vocation Education and Training System (BVET) has revolved around the Wholesale and Retail and Tourism sectors.

Currently, Riggers in Botswana are trained through the apprenticeship system. The length and duration of the practical and theoretical components differ slightly to the South African apprenticeship system, but the learning competencies are similar. The primary context is the diamond mining sector and small local manufacturing and engineering industries.

East African Community (EAC):

The three member states of the EAC; Kenya, Tanzania and Uganda, are in the process of the harmonisation of education and training systems within the EAC. Currently, no qualification infrastructure exists.

United States:

In the United States model, the "rigger" qualification is achieved over a four-year period and is similar to the traditional apprenticeship system in South Africa. The methodology is competency-based as opposed to outcomes-based.

The programme content however, is similar to the broad context of Mechanical Engineering (Rigging) Levels 2, 3 and 4.

Conclusion: The mechanical handling (rigger) qualification Level 3 is in line with the US example for year 3/4 of the apprenticeship programme.

Canada:

Information regarding training was also found on the website of the Manitoba Provincial Government's web-site. The full "rigger" qualification is obtained over a four-year period. The "job description" of the "rigger" is similar in content in the international arena for all levels of learning.

Conclusion: The Canadian qualifications related to mechanical Rigging can be used interchangeably with the qualifications developed for the South African manufacturing and engineering industries, serving a similar purpose.

New Zealand (www.kiwiquals.govt.nz) in terms of the New Zealand Qualifications Framework (NZQF):

- National Certificate in Industrial Rope Access (Elementary Rope Skills) (Level 3).
- National Certificate in Rigging with strands in Intermediate Rigging Level 3 (on selection of appropriate strand).

Australia (www.ntis.gov.au) in terms of the Australian Quality Training Framework (AQTF):

The following information was obtained on the website: <http://www.ntis.au> (National Information Training System) with regards to qualifications in "Rigger" training streams in Australia.

"Australian Apprenticeships" is the new name for the scheme formerly known as 'New Apprenticeships'.

Australian Apprenticeships encompass all apprenticeships and traineeships. They combine time at work with training and can be full-time, part-time or school-based.

The qualifications investigated for "Riggers" are only covered within the apprenticeship format.

3. Summary of comparisons with National Certificate: Mechanical Handling (Rigging) Level 3:

Content:

The qualifications from the various countries all address the range of mechanical handling competencies included in Level 3, thus attending to the need to fulfil the requirements of being intermediately of nature.

Progression:

The international qualifications all address a progression of competencies, from the basic functions (Level 2) to:

Level 3:

- Rigging cranes, conveyers, and similar equipment for heavy lifts.
- Handling the associated rope work.
- Working at heights.

Level 4:

- Using sophisticated and complex equipment in the rigging industry, such as guyed derricks, gin poles, cable ways and fabricated hung scaffolds.
- Planning and supervising complex operations.

The content:

The content of the second/third year of a typical mechanical Rigging programme in most countries, relates favourably to the content of Mechanical Handling (Rigging) Level 3:

Demonstration of work practices:

Investigation into international comparability produces overarching similarities in the outcomes of the various mechanical fitter (maintenance or production) training programmes in all the countries above. They are:

Level 3 outcomes common to most countries:

- Apply mechanical handling knowledge and skills in order to perform lifting and mechanical handling tasks.
- Perform a lifting task by means of a mobile crane.
- Inspect and conduct routine maintenance on an overhead crane.
- Perform a lifting task using floating techniques.
- Identify and use steel wire ropes.
- Lift and move a load using mechanical lifting equipment.
- Secure a load for transportation equipment.

The above outcomes are replicated within the South African equivalent qualification.

Learning delivery:

The learning delivery process in all the examples included on-the-job (practical) and off-the-job (theoretical) components.

Outcomes-Based Methodology:

All the examples found either directly or indirectly comply with principles of outcomes-based learning, particularly in terms of outcomes representing meaningful units of learning and assessment being conducted continuously (formatively). There is generally a final integrated

summative assessment, typically called a certificate of qualification (trade test), where the candidate is required to demonstrate specific and core (cross-field) knowledge and skills.

Apprenticeships and VET programmes:

In all the examples found, learning is vocational-based. In some countries (England, Scotland, New Zealand and Australia) these are called "modern apprenticeships". These take the form of two categories, namely a programme-led apprenticeship where learners are able to follow a vocational programme at a college and then seek employment as trainees/apprentice/interns in order to qualify as artisans; and an employer-led apprenticeship, in which learners are engaged in a formal contract of learning and most learning is workplace-based. In most cases learners "earn while they learn".

Application (Purpose):

As is the intention with the South African qualifications, the international qualifications all prepare learners for lifting and mechanical handling across a wide variety of industry sectors.

4. Concluding remarks:

The Level 3 certificate developed for South Africa compares favourably with the international qualifications mentioned above.

5. Reference documents:

- 5.1 Availability of skilled labour in selected occupations in Western Australia (Shah. Cooney, Long and Burke: 2005).
- 5.2 National Guidelines on Cross-Sectoral Qualification Linkages (Australian Qualifications Framework (AQF) Implementation Handbook: 2002).
- 5.3 Lifting and Mechanical Handling Guidelines (Step Change in Safety: ERS Network Off-shore Oil and Gas Industry-UK).
- 5.4 Policy Watch: Apprenticeship framework: A Change in Design (Sian Owen: 2005; Authorised by Steve Besley-UK).
- 5.5 Training in Engineering Construction Skills: Employers Guide (TECSkills and the ECITB-UK: 2007).
- 5.6 Modern Apprenticeships: The Way to Work (Cassels Report: 2001): UK.
- 5.7 Role of Apprenticeship in VET System: The Case of Botswana (Ahmad:2003) at Conference on the Reform of Technical and Vocational Education and Training (TVET) Gaborone, Botswana.
- 5.8 Challenges Facing Vet Transformation in the SADC Region (Akoojee and McGrath: 2003 HSRC-Pretoria) at Conference on the Reform of Technical and Vocational Education and Training (TVET) Gaborone, Botswana.

6. Reference Web-sites:

www.ecitb.org.za; www.ntis.gov.au; www.bota.org.bw; www.kiwiquals.govt.nz; www.bcit.ca; www.nait.ca; www.cotr.bc.ca; www.edexcel.co.uk; www.tullontraining.co.uk; www.doleta.com; www.tecskills.org.za.

ARTICULATION OPTIONS

This qualification was designed to enable qualifying learners to move from one engineering context to another and still get recognition for successful learning achievements in the previous context. This means that credit accumulation towards certification could be obtained across industries.

Employers or institutions should be able to evaluate the outcomes of this qualification against the needs of their context and structure top-up learning appropriately. Holders of other qualifications may be evaluated against this qualification for the purpose of RPL and placement in learning programmes.

Vertical articulation:

- ID 59731: Further Education and Training Certificate: Mechanical Handling (Rigging), NQF Level 4.

Horizontal articulation:

Fundamental learning at this level applies to equivalent credit accrual for engineering-related qualifications at NQF Level 3.

Core and Elective learning at this level applies to equivalent credit accrual for unit standards in some engineering qualifications, namely:

- ID 48535; National Certificate: Maritime Operations, NQF Level 3.
- ID 49080; National Certificate: Construction: Advanced Crane Operations, NQF Level 3.
- ID 49015; National Certificate: Construction: Structural Steel Erecting, NQF Level 3.
- ID 48988; National Certificate: Forestry: Timber Harvesting, NQF Level 3.

MODERATION OPTIONS

- Anyone assessing a learner or moderating the assessment of a learner against this Qualification must be registered with an appropriate Education and Training Quality Assurance Body (ETQA) or with an ETQA which has a Memorandum of Understanding (MOU) with the relevant ETQA.
- Any institution offering learning that will enable the achievement of this qualification must be accredited as a Training Provider with the relevant ETQA or with an ETQA that has a Memorandum of Understanding (MOU) with the relevant ETQA.
- Moderation of assessment will be overseen by the relevant ETQA or by an ETQA that has a Memorandum of Understanding (MOU) with the relevant ETQA according to that ETQA's guidelines for assessment and moderation.
- Moderation includes both internal and external moderation of assessment/s at the exit points of the qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual unit standards as well as in exit level outcomes described in this Qualification.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

The following criteria should be applied by the relevant ETQA as a minimum requirement:

1. Assessors should be in possession of an appropriate qualification, namely:

- Mechanical Handling (Rigging) at NQF Level 4 including a minimum period of work-related experience as specified by the relevant ETQA.
- An artisan qualification in Rigging (Trade test certificate or completed contract of apprenticeship) including a minimum period of work-related experience as specified by the relevant ETQA.
- Subject matter experience, which may be established through recognition of prior learning (RPL).

2. Registration as an assessor with the relevant Education and Training Quality Assurance Body.

3. Proven inter-personal skills and the ability to:

- Maintain national and local industry standards.
- Act in the interest of the learner.
- Understand the need for transformation to redress the legacies of the past, and respect the cultural background and language of the learner.

NOTES

In terms of learning and assessment within the chemical industry sector, qualification replaces qualification 13694, "National Certificate: Chemical Rigger (Interim-registered)", Level 3, 120 credits.

This qualification also replaces other registered and non-registered (in-house) occupational qualifications which are traditionally associated with Rigging and Rope-work.

UNIT STANDARDS

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Fundamental	119472	Accommodate audience and context needs in oral/signed communication	Level 3	5
Fundamental	9010	Demonstrate an understanding of the use of different number bases and measurement units and an awareness of error in the context of relevant calculations	Level 3	2
Fundamental	9013	Describe, apply, analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts	Level 3	4
Fundamental	119457	Interpret and use information from texts	Level 3	5
Fundamental	9012	Investigate life and work related problems using data and probabilities	Level 3	5
Fundamental	119467	Use language and communication in occupational learning programmes	Level 3	5
Fundamental	7456	Use mathematics to investigate and monitor the financial aspects of personal, business and national issues	Level 3	5
Fundamental	119465	Write/present/sign texts for a range of communicative contexts	Level 3	5
Core	253601	Secure a load for transportation	Level 2	4
Core	9322	Work in a team	Level 2	3
Core	13223	Apply safety, health and environmental protection procedures	Level 3	6
Core	253554	Identify and use steel wire ropes	Level 3	12
Core	9530	Manage work time effectively	Level 3	3
Core	253603	Manoeuvre a load using mechanical lifting equipment	Level 3	7
Core	253658	Perform a lifting task by using a mobile crane	Level 3	8
Core	253640	Perform a lifting task using a floating method	Level 3	8
Core	253654	Perform pre-use maintenance and inspection on lifting machinery and equipment	Level 3	4
Elective	253585	Apply lubrication to a steel wire rope	Level 2	2
Elective	244077	Demonstrate understanding of chemicals in a processing environment	Level 2	6
Elective	119042	Erect, alter/reposition and dismantle access scaffolding	Level 2	13
Elective	253615	Lift and move a load using the pick and carry method	Level 2	4
Elective	244366	Remove broken rock by means of a suction unit	Level 2	3
Elective	253639	Replace a conveyance in a shaft	Level 2	2
Elective	253880	Adapt to working in a client's work environment	Level 3	3
Elective	113998	Carry out rigging operations on a vessel	Level 3	8
Elective	116981	Conduct advanced tower crane operations	Level 3	20
Elective	10893	Demonstrate knowledge and understanding of electrical power generation	Level 3	5
Elective	117033	Demonstrate knowledge of wire rope, rigging accessories, anchor systems and rigging in cable yarding operations	Level 3	3
Elective	253597	Lift and turn a load	Level 3	4
Elective	9526	Manage basic business finance	Level 3	6

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Elective	242977	Operate ship cargo lifting appliances	Level 3	10
Elective	253637	Replace steelwork in a shaft	Level 3	3
Elective	113994	Transfer and secure cargo and stores	Level 3	8
Elective	113995	Work with fibre ropes, wire ropes and chains on a vessel	Level 3	8
Elective	113981	Arrange and complete lifts on site using lifting equipment	Level 4	15
Elective	14920	Participate in groups and/or teams to recommend solutions to problems	Level 4	3

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION**None**



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

QUALIFICATION:***Further Education and Training Certificate: Mechanical Handling (Rigging)***

SAQA QUAL ID		QUALIFICATION TITLE	
59731		Further Education and Training Certificate: Mechanical Handling (Rigging)	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
QUALIFICATION TYPE	FIELD	SUBFIELD	
Further Ed and Training Cert	6 - Manufacturing, Engineering and Technology	Engineering and Related Design	
ABET BAND	MINIMUM CREDITS	NQF LEVEL	QUAL CLASS
Undefined	136	Level 4	Regular-Unit Stds Based

This qualification replaces:

Qual ID	Qualification Title	NQF Level	Min Credits	Replacement Status
13693	Mechanics: Chemical Rigging	Level 4	120	Will occur as soon as 59731 is registered

PURPOSE AND RATIONALE OF THE QUALIFICATION**Purpose:**

The purpose of this qualification is to conclude the progression along a trade-related career path towards obtaining a Further Education and Training Certification in Mechanical Handling (Rigging).

Qualifying learners at NQF Level 4 will therefore be able to work as skilled artisans ("riggers") in lifting and mechanical handling. It must also be noted however, that an additional licensing requirement may be required by the relevant Education and Training Quality Assurance Body or industry sector in order to gain artisan status.

In this qualification, the knowledge, skills and values in order to display competency (applied competence) is recognised by showing the ability to:

- Understand advanced lifting and mechanical handling theory, principles and concepts which includes the interpretation of detailed work instructions, in order to meet the requirements of mechanical handling projects.
- Manage/supervise/perform lifting and mechanical handling projects/tasks using a reference framework which includes the view of the operating environment as a system within a wider context.
- Demonstrate integrated organisational skills in order to manage personnel in the supervision of lifting tasks.
- Apply and carry out actions by interpreting information from text and operational symbols or representations.

- Use knowledge of the mechanical handling (rigging) field of expertise to solve common problems within a familiar context, making adjustments or small changes to the application of common solutions within known parameters.

Qualifying learners will also demonstrate autonomy in learning through:

- Taking responsibility for their own learning within a supervised environment by planning, scheduling and evaluating own work according to given criteria.
- Interacting with and developing, the capacity of team members to maintain and support legislative, regulatory, quality, safety and health systems.
- Taking the initiative by addressing problems arising from the supervision of lifting and moving tasks.

Rationale:

The field of Mechanical Handling (Rigging) is characterised by the provision of support services within a broader engineering environment and across a variety of industry sectors, namely within the:

- Manufacturing and Engineering (Metals, Plastics, Tyre and Rubber, Automotive Manufacturing).
- Chemical and Petrochemical.
- Mining.
- Transport (Maritime, Road, Rail and Aviation).
- Civil Engineering and Construction.
- Other engineering-related industry sectors.

Mechanical Handling (Rigging) includes the lifting, handling, moving and positioning of commercial goods, machines, equipment, components or fabricated structures using manual and mechanised lifting equipment and machinery (includes mobile machines). Learners at NQF Level 4, performing rigging work, require:

- Highly developed mechanical orientation with associated diagnostic skills.
- Specialised organisational skills (evaluating, planning and scheduling work).
- Communication skills.
- Team and leadership skills.

Qualifying learners will obtain a Further Education Certificate in Mechanical Handling (Rigging) NQF Level 4. This qualification focuses on developing the skills, knowledge and values necessary to complete the range of competencies required to work as a skilled worker or artisan.

The qualification also provides:

- Opportunities for further learning in the field of Mechanical Handling.
- Recognition of prior learning (RPL) opportunities to learners who have gained relevant experience in the workplace.

RECOGNIZE PREVIOUS LEARNING?

N

LEARNING ASSUMED IN PLACE

This qualification assumes that learners have a National Certificate: Mechanical Handling (Rigging) at NQF Level 3 or an equivalent qualification.

Access to the Qualification:

Source: National Learners' Records Database

Qualification 59731

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Access to this qualification is open. However, it is preferred that learners have completed a National Certificate at NQF Level 3 (in trade-related sub-field) or equivalent.

QUALIFICATION RULES

Fundamental Component:

The Fundamental Component consists of Unit Standards in:

- Communications at Level 4 to the value of 46 credits.
- Maths Literacy at Level 4 to the value of 10 credits.
- All Unit Standards in the Fundamental Component are compulsory.

Core Component:

The Core Component consists of Unit Standards to the value of 68 credits all of which are compulsory.

Elective Component:

The Elective Component consists of a number of specializations each with its own set of Unit Standards. Learners are to choose a specialization area and must choose Elective Unit Standards to the value of 12 credits from the Elective Unit standards listed under that specialization so as to attain a minimum of 136 credits for this qualification.

Specialisation area 1:

Learning Programme:

Rigging (Chemical Industry).

Learners must do Unit Standard ID 14783 and must choose additional Elective Unit Standards from the list below to give a minimum of 12 credits for the Elective Component:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 14783; Conform to and apply legislation and operational instructions in chemical processing; Level 3; 4 Credits.
- Elective; ID 253656; Communicate with clients; Level 3; 3 Credits.
- Elective; ID 253578; Inspect, prepare and use a man-lift carriage for work at elevated heights; Level 4; 3 Credits.
- Elective; ID 253583; Inspect, prepare and use a tube bundle machine on a petrochemical plant; Level 4; 4 Credits.
- Elective; ID 253638; Sling complex loads and communicate during crane operations; Level 3; 12 Credits.
- Elective; ID 253586; Perform a boom conversion; Level 4; 8 Credits.
- Elective; ID 253590; Lift and move a load in suspension using a mobile crane; Level 3; 4 Credits.
- Elective; ID 113851; Manage the transportation of dangerous goods; Level 5; 6 Credits.

Total = 44 Credits.

Specialisation area 2:

Learning Programme:

Rigging (Electrical Power Generation).

Learners must do Unit Standard ID 113873 and must choose additional Elective Unit Standards from the list below to give a minimum of 12 credits for the Elective Component:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 113873; Understand basic electrical and mechanical engineering principles; Level 4; 8 Credits.
- Elective; ID 253656; Communicate with clients; Level 3; 3 Credits.
- Elective; ID 253578; Inspect, prepare and use a man-lift carriage for work at elevated heights; Level 4; 3 Credits.
- Elective; ID 253638; Sling complex loads and communicate during crane operations; Level 3; 12 Credits.
- Elective; ID 253590; Lift and move a load in suspension using a mobile crane; Level 3; 4 Credits.
- Elective; ID 14920; Participate in groups and/or teams to recommend solutions to problems; Level 4; 3 Credits.
- Elective; ID 116691; Plan, organise and control the erection, alteration/repositioning and dismantling of load bearing scaffolding; Level 4; 12 Credits.
- Elective; ID 253589; Transfer a load by means of snatching and anchoring; Level 3; 4 Credits.
- Elective; ID 253594; Lift and move a load by means of a temporary construction; Level 3; 5 Credits.

Total = 54 Credits.

Specialisation Area 3:**Learning Programme:****Manufacturing, Engineering and Related Industries.****Rigging (Manufacturing, Engineering and Related Industries).**

Learners must choose Elective Unit Standards from the list below to give a minimum of 12 credits for the Elective Component:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 253656; Communicate with clients; Level 3; 3 Credits.
- Elective; ID 253638; Sling complex loads and communicate during crane operations; Level 3; 12 Credits.
- Elective; ID 253590; Lift and move a load in suspension using a mobile crane; Level 3; 4 Credits.
- Elective; ID 14920; Participate in groups and/or teams to recommend solutions to problems; Level 4; 3 Credits.
- Elective; ID 116691; Plan, organise and control the erection, alteration/repositioning and dismantling of load bearing scaffolding; Level 4; 12 Credits.
- Elective; ID 253589; Transfer a load by means of snatching and anchoring; Level 3; 4 Credits.
- Elective; ID 253594; Lift and move a load by means of a temporary construction; Level 3; 5 Credits.
- Elective; ID 113851; Manage the transportation of dangerous goods; Level 5; 6 Credits.
- Elective; ID 115333; Repair, replace and/or adjust helicopter cargo suspension hooks and rescue joists; Level 4; 4 Credits.

Total = 63 Credits.

Specialisation area 4:

Learning Programme:

Rigging (Mining Industry).

Learners must choose Elective Unit Standards from the list below to give a minimum of 12 credits for the Elective Component:

Category; ID; Unit Standard Title; Level; Credits:

- Elective; ID 253656; Communicate with clients; Level 3; 3 Credits.
- Elective; ID 253638; Sling complex loads and communicate during crane operations; Level 3; 12 Credits.
- Elective; ID 253590; Lift and move a load in suspension using a mobile crane; Level 3; 4 Credits.
- Elective; ID 14920; Participate in groups and/or teams to recommend solutions to problems; Level 4; 3 Credits.
- Elective; ID 116691; Plan, organise and control the erection, alteration/repositioning and dismantling of load bearing scaffolding; Level 4; 12 Credits.
- Elective; ID 116692; Plan, organise and control the erection, alteration/repositioning and dismantling of access scaffolding; Level 4; 12.
- Elective; ID 116690; Plan, organise and control the erection, alteration/repositioning and dismantling of suspended scaffolding; Level 4; 18 Credits.
- Elective; ID 253589; Transfer a load by means of snatching and anchoring; Level 4; 4 Credits.
- Elective; ID 253594; Manoeuvre a load by means of a temporary construction; Level 4; 5 Credits.
- Elective; ID 253655; Examine winder rope attachments; Level 4; 4 Credits.
- Elective; ID 253614; Transport material and equipment in a shaft barrel; Level 3; 5 Credits.
- Elective; ID 253641; Terminate a rope end by means of capping; Level 3; 2 Credits.
- Elective; ID 253580; Replace a winder rope; Level 4; 6 Credits.
- Elective; ID 253636; Pilot material and equipment in a shaft; Level 3; 6 Credits.
- Elective; ID 253598; Terminate and secure back ends of a winder rope; Level 4; 4 Credits.
- Elective; ID 253584; Replace a winder rope sheave wheel; Level 4; 5 Credits.
- Elective; ID 253602; Examine a winder rope; Level 4; 4 Credits.
- Elective; ID 253557; Conduct a routine inspection on an elevator; Level 4; 2 Credits.
- Elective; ID 253576; Replace the boom sheave wheel of a dragline; Level 3; 3 Credits.

Total = 114 Credits.

EXIT LEVEL OUTCOMES

1. Demonstrate the skills and ability to supervise the lifting, moving and placing of complex loads by using lifting machinery.
2. Demonstrate an ability to plan and schedule work.
3. Apply procedures to solve a variety of problems within a mechanical handling context.
4. Demonstrate leadership through effective interaction and communication with clients, peers and members of supervisory and management levels.

Critical Cross-Field Outcomes:

These are embedded in the unit standards, which make up the qualification and are thus also reflected in the Exit Level Outcomes of the qualification.

The critical cross-field outcomes are supported by the exit level outcomes as follows:

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

- Related to the lifting and moving of complex loads using mechanical lifting equipment and a range of mechanical handling devices.
- Related to supervising the mechanical handling project.
- Related to the application of specialised methods during mechanical handling activities.
- Solving problems during the execution of lifting and moving a load.

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

- All tasks and work-related experience are performed within a team environment.
- Taking into account, the safety of others.
- Communicating with production, quality control and supervisory personnel and/or clients.
- Acting in a leadership role.

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

- Related to planning and preparation during the lifting and moving of loads.

Collecting, analyzing, organizing and critically evaluating information:

- Related to managing/supervising people and the lifting activity.
- Completion of technical reports related to the job activity.
- Solve familiar problems during the execution of lifting tasks.
- During the planning and preparation of the mechanical handling activity.

Communicating effectively using visual, mathematical and/or language skills:

- During supervision and the execution of job activities.
- Execution of commands and completion of technical reports related to the job activity.
- Communicating as a team leader or supervisor.

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

- During the lifting and moving of loads by implementing methods and techniques based on advanced knowledge of mechanical handling.
- Relating to the safety of others.
- Solving problems and applying science and technology to the rigging activity.

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

- Integrating the rigging task with the plant installation's functionality.
- Solving problems through the integration of various sources of information.
- Demonstrating and understanding of related systems through the use of general and specific channels of communication when dealing with peers, production, quality control and supervisory personnel and/or clients.

ASSOCIATED ASSESSMENT CRITERIA

Associated Assessment Criteria for Exit Level Outcome 1:

1.1 Lifting and mechanical handling tasks are demonstrated by using specialised lifting machinery in accordance with worksite practice and manufacturers' prescribed guidelines and specifications.

1.2 The technique/s for lifting and mechanically handling a complex load is demonstrated by using a combination of methods, lifting machinery and equipment with due care for personnel and the environment.

1.3 Procedures for safe lifting and mechanical handling are followed in terms of work instructions with specific attention to applicable regulatory standards.

● Range:

- Loads may include machines, components or fabricated structures.
- Lifting and mechanical handling machinery and equipment may include but is not limited to winches, mobile crane/s and other forms of power-driven machinery.
- Techniques may include the use of guyed derricks, gin poles, cable ways, types of scaffolding and complex tandem lifting techniques.
- Legislative and regulatory standards may refer but not be limited to OHS Act, local authority requirements, Code of Safe Working Practices (Marine), Driven Machinery, General Safety and Construction Regulations.

Associated Assessment Criteria for Exit Level Outcome 2:

2.1 Planning and scheduling of lifting and mechanical handling work is demonstrated in terms of available or pre-requisite resources, the nature of the task, productivity, safety, health and the environment.

2.2 Personnel (lifting team) are consulted and the lifting task is evaluated according to work instructions and prevailing conditions.

2.3 Work flow is explained and demonstrated, based on job information, in terms of standard worksite practices.

2.4 The documentation is completed according to organisational policies and all procedures are finalised and checked according to standard operating procedures.

Associated Assessment Criteria for Exit Level Outcome 3:

3.1 Solutions to lifting and mechanical handling problems are based on a clear analysis of information gathered through standard work-site procedures.

3.2 Procedures are modified to respond to familiar problems in terms of changes in prevailing conditions, the application of machinery and equipment and certain unforeseen events.

3.3 Questions are answered and familiar problems are discussed with respect to typical worse case scenarios.

Associated Assessment Criteria for Exit Level Outcome 4:

4.1 Relationships with peers, supervisors and management are established and leadership is demonstrated by assertive communication and behaviour within the workplace.

4.2 Technical information is communicated using written reports as required in terms of organisational procedures.

4.3 Learning opportunities and preparation requirements are identified and a learning plan is developed in order to map a personal development plan for oneself.

Integrated Assessment:

- Assessment practices must be open transparent fair valid and reliable and should ensure that no learner is disadvantaged in any way whatsoever, so that an integrated approach to assessment is incorporated into the qualification.

- Learning teaching and assessment are inextricably interwoven. Whenever possible the assessment knowledge skills attitudes and values shown in the unit standards should be integrated.
- Assessment of Communication and Mathematical Literacy should be integrated as far as possible with other aspects and should use practical administration 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 or will work. 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 a range of summative assessment methods and assess combinations of practical, applied, foundational and reflective competencies.
- Assessors must assess and give credit for the evidence of learning that has already been acquired and could include formal, non-formal learning and work experience.
- Assessment should ensure that all specific outcomes, embedded knowledge and critical cross-field outcomes are evaluated in an integrated manner.
- Integrated assessment instruments may combine practical and theoretical components of assessment with the following unit standards in relation to the exit level outcomes:

Exit Level Outcomes and Associated Unit Standards:

1. Demonstrate the skills and ability to supervise the lifting, moving and placing of complex loads by using lifting machinery according to legislative and regulatory standards.

Category; ID; Title; Level; Credits:

- Core; ID 9406; Manage a team; Level 5; 4 Credits.
- Core; ID 13224; Monitor the application of safety, health and environmental protection procedures; Level 4; 4 Credits.
- Core; ID 13254; Contribute to the implementation and maintenance of business processes; Level 4; 10 Credits.
- Core; ID 253883; Lift and move a complex load using a winch; Level 4; 6 Credits.

Category; ID; Title; Level; Credits:

- Core; ID 116583; Perform tandem lifting; Level 4; 12 Credits.
- Core; ID 253596; Perform a pre-engineering study in order to undertake rigging activities; Level 4; 6 Credits.
- Fundamental; ID 119471; Use language and communication in occupational learning programmes; Level 4; 5 Credits.
- Fundamental; ID 119467; Use language and communication in occupational learning programmes; Level 3; 5 Credits.
- Fundamental; ID 119472; Accommodate audience and context needs in oral/signaled communication; Level 3; 5 Credits.
- Fundamental; ID 119469; Read/view, analyse and respond to a variety of texts, Level 4; 5 Credits.

2. Demonstrate the ability to plan and schedule work according to work instructions and standard industry and organisational procedures.

Category; ID; Title; Level; Credits:

- Core; ID 9406; Manage a team; Level 5; 4 Credits.
- Core; ID 13224; Monitor the application of safety, health and environmental protection procedures; Level 4; 4 Credits.
- Core; ID 13254; Contribute to the implementation and maintenance of business processes; Level 4; 10 Credits.
- Core; ID 253883; Lift and move a complex load using a winch; Level 4; 6 Credits.
- Core; ID 253660; Supervise advanced mobile crane operations; Level 4; 20 Credits.
- Core; ID 116583; Perform tandem lifting; Level 4; 12 Credits.
- Core; ID 253596; Perform a pre-engineering study in order to undertake rigging activities; Level 4; 6 Credits.
- Core; ID 113855; Manage the transportation of abnormal loads; Level 5; 6 Credits.
- Fundamental; ID 119457; Interpret and use information from texts; Level 3; 5 Credits.
- Fundamental; ID 9016; Represent analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts; Level 4; 4 Credits.
- Fundamental; ID 119471; Use language and communication in occupational learning programmes; Level 4; 5 Credits.
- Fundamental; ID 119459; Write/present/sign for a wide range of contexts; Level 4; 5 Credits.
- Fundamental; ID 119467; Use language and communication in occupational learning programmes; Level 3; 5 Credits.
- Fundamental; ID 119472; Accommodate audience and context needs in oral/signed communication; Level 3; 5 Credits.
- Fundamental; ID 119469; Read/view, analyse and respond to a variety of texts, Level 4; 5 Credits.

3. Apply procedures to solve a variety of problems within a mechanical handling context, in terms of the application of advanced lifting theory, the ability to read and interpret manufacturer's assembly drawings and routine inspection.

Category; ID; Title; Level; Credits:

- Core; ID 9406; Manage a team; Level 5; 4 Credits.
- Core; ID 13224; Monitor the application of safety, health and environmental protection procedures; Level 4; 4 Credits.
- Core; ID 13254; Contribute to the implementation and maintenance of business processes; Level 4; 10 Credits.
- Core; ID 253883; Lift and move a complex load using a winch; Level 4; 6 Credits.
- Core; ID 253660; Supervise advanced mobile crane operations; Level 4; 20 Credits.
- Core; ID 113855; Manage the transportation of abnormal loads; Level 5; 6 Credits.
- Fundamental; ID 119457; Interpret and use information from texts; Level 3; 5 Credits.
- Fundamental; ID 119471; Use language and communication in occupational learning programmes; Level 4; 5 Credits.
- Fundamental; ID 119467; Use language and communication in occupational learning programmes; Level 3; 5 Credits.
- Fundamental; ID 119472; Accommodate audience and context needs in oral/signed communication; Level 3; 5 Credits.
- Fundamental; ID 119469; Read/view, analyse and respond to a variety of texts, Level 4; 5 Credits.

4. Demonstrate leadership through effective interaction and communication with clients, peers and members of supervisory and management levels.

Category; ID; Title; Level; Credits:

- Core; ID 13224; Monitor the application of safety, health and environmental protection procedures; Level 4; 4 Credits.
- Core; ID 253883; Lift and move a complex load using a winch; Level 4; 6 Credits.
- Core; ID 253596; Supervise advanced mobile crane operations; Level 4; 20 Credits.
- Core; ID 113855; Manage the transportation of abnormal loads; Level 5; 6 Credits.
- Fundamental; ID 119457; Interpret and use information from texts; Level 3; 5 Credits.
- Fundamental; ID 9016; Represent analyse and calculate shape and motion in 2-and 3-dimensional space in different contexts; Level 4; 4 Credits.
- Fundamental; ID 119471; Use language and communication in occupational learning programmes; Level 4; 5 Credits.
- Fundamental; ID 119459; Write/present/sign for a wide range of contexts; Level 4; 5 Credits.
- Fundamental; ID 119467; Use language and communication in occupational learning programmes; Level 3; 5 Credits.
- Fundamental; ID 119472; Accommodate audience and context needs in oral/signed communication; Level 3; 5 Credits.
- Fundamental; ID 119469; Read/view, analyse and respond to a variety of texts, Level 4; 5 Credits.

INTERNATIONAL COMPARABILITY

1. Introduction:

In benchmarking the Mechanical Handling (Rigging) qualification series, against international qualifications, examples in different parts of the world were investigated. The country which dominates the international standard for mechanical handling (rigging) is the United Kingdom. For centuries Britain's maritime influence has simultaneously developed best practices in rope-work (the origins of rigging), the application of lifting equipment and the development of a regulatory infrastructure which is still evident today. This influence has cascaded into Commonwealth Countries (examples, Singapore; Malaysia; Australia; New Zealand; India) and includes the United States of America (USA).

Although countries across the globe have independent regulatory frameworks pertaining to mechanical handling, the lifting and moving of loads and the application of lifting equipment, there is a close resemblance to the British equivalent (The Lloyd's Register-Code for Lifting Appliances, the Lifting Operations and Lifting Equipment Regulations of 1998: LOLER and the applicable British Standards). Currently, this mechanical handling standard is applicable to the maritime, offshore oil and gas exploration, mining, civil engineering and construction and manufacturing and engineering sectors across the globe.

During this investigation into international comparability, a variety of examples in different parts of the world were evaluated.

2. Qualifications investigated and countries of origin:

United Kingdom (England and Scotland) from www.ecitb.org.uk:

In order to perform a comparative study on S/NVQs, it is necessary to understand the qualifications framework and the classification of S/NVQs for the field of engineering and construction.

The S/NVQF by occupational areas are at 5 distinct Levels:

- Level 1: Operations.
- Level 2: Operations and Higher Skills.
- Level 3: Technicians and Craft Employees.
- Level 4: Technician Engineer.
- Level 5: Professional and Chartered Engineers.

National Certificate: Mechanical Handling (Rigging) Level 4, compares well to the Scottish and English (UK) qualifications. However, the UK's qualification content is pitched at S/NVQ Levels 2 and 3. This means that an equivalent and parallel level does not truly exist in the same form as the South African NQF.

In comparing the Level 3 programme, apprentices should progress to the S/NVQ Level 3 within a company after having completed Level 2 in a centre-based environment.

This vocational programme is combined with a third component, Further Education, which together adds up to two vocational awards (SVQ Level 2 and 3), an educational qualification and the SEMTA Modern Apprenticeship (MA) Certificate.

African Comparability:

Southern African Development Community (SADC): Zimbabwe and Botswana:

Alignment with the United Kingdom's model of Vocational Education and Training (VET), through the London City and Guilds qualification framework and the National Vocational Qualification system (NVQ): The Botswana National Qualifications Act was passed in 1998. At this present time, focus on the development of standards-based qualifications through a Botswana Vocation Education and Training System (BVET) has revolved around the Wholesale and Retail and Tourism sectors.

Currently, riggers in Botswana are trained through the apprenticeship system. The length and duration of the practical and theoretical components differ slightly to the South African apprenticeship system, but the learning competencies are similar, with a focus which predominant within the diamond mining sector and small local manufacturing and engineering industries.

East African Community (EAC):

The three member states of the EAC; Kenya, Tanzania and Uganda, are in the process of the harmonisation of education and training systems within the EAC. Currently, no qualification infrastructure exists.

United States:

In the United States model, the "rigger" qualification is achieved over a four-year period and is similar to the traditional apprenticeship system in South Africa. The methodology is competency-based as opposed to outcomes-based. The programme content however, is similar to the broad context of Mechanical Handling (Rigging) for the entire duration of apprenticeship programme.

Canada (Manitoba Province <http://www.gov.mb.ca/iedm/>):

Information regarding training was also found on the website of the Manitoba Provincial Government in Canada. The full "rigger" qualification is obtained over a four-year period. The "job description" of the "rigger" is similar to most countries investigated.

"Riggers" at certificate level 4 are able to carry out functions, similar its South African counterpart.

Conclusion: The Canadian qualifications related to Mechanical Handling (Rigging) can be used interchangeably with the qualifications developed for the various South African industry sectors, serving a similar purpose.

New Zealand (www.kiwiquals.govt.nz) in terms of the New Zealand Qualifications Framework (NZQF):

National Certificate in Industrial Rope Access Level 4:

National Certificate in Rigging with strands in Advanced Rigging Level 4 (on selection of appropriate strand).

Learning content within the Level 4 strand are:

- Use sophisticated and complex equipment in the rigging industry, such as guyed derricks, gin poles, cable ways and fabricated hung scaffolds.
- Plan and supervise complex operations.

Australia (www.ntis.gov.au) in terms of the Australian Quality Training Framework (AQTF):

The following information was obtained on the website: <http://www.ntis.au> (National Information Training System) with regards to qualifications in "Rigger" training streams in Australia.

"Australian Apprenticeships" is the new name for the scheme formerly known as 'New Apprenticeships'.

"Australian Apprenticeships" encompass all apprenticeships and traineeships. They combine time at work with training and can be full-time, part-time or school-based¹. The qualifications investigated for "Riggers" are only covered within the apprenticeship format.

3. Summary of comparisons with National Certificate: Mechanical Handling (Rigging) Level 4:

Content:

The qualifications from the various countries all address the range of mechanical handling competencies included in Level 3, thus attending to the need to fulfil the requirements of being introductory by nature.

Progression:

The international qualifications all address a progression of competencies, e.g. demonstration of the ability to meet the top equipment usage level in the rigging industry, such as guyed derricks, gin poles, cable ways and fabricated hung scaffolds. They are also able to plan and supervise complex operations. This is the highest level qualification available in this industry.

A typical progression is found in the Scottish apprenticeship (Moving Loads) and in England (Off-shore Oil & Gas Industry):

- SVQ Level 2 (minimum 26 weeks at an accredited training centre).
- SVQ Level 3 (in the workplace with monitoring and assessments by a training officer).
- An educational qualification e.g. National Certificate (NC) in Engineering Practice (day release at a training centre).

The off-shore oil and gas industry has progression indicators for mechanical handling which depict the following descriptors, namely:

- The responsible person.
- The competent person (at least 3 years' operational experience of lifting operations).
- The competent lifting team.
- Technical support.

The content of the third/fourth year of a typical "Rigging" programme in most countries, relates favourably to the content of Mechanical Engineering (Rigging) Level 4.

Demonstration of work practices:

Investigation into international comparability produces overarching similarities in the outcomes of the various "rigger" training programmes in all the countries above. They are:

Outcomes which are common to most countries (Level 4):

- Plan and prepare advanced rigging work.
- Complete advanced rigging.
- Dismantle structures and/or plant at advanced rigging level work.
- Identify and apply industrial rope access.
- Select and safely use industrial rope access equipment access legislation.
- Plan and prepare for advanced industrial rope access work.
- Set up, alter, and dismantle industrial rope access.
- Carry out advanced industrial rope access techniques systems.

Learning delivery:

The learning delivery process in all the examples included on-the-job (practical) and off-the-job (theoretical) components.

Outcomes-Based Methodology:

All the examples found either directly or indirectly comply with principles of outcomes-based learning, particularly in terms of outcomes representing meaningful units of learning and assessment being conducted continuously (formatively). There is generally a final integrated assessment, typically called a certificate of qualification (trade test certificate - red seal), where the candidate is required to demonstrate specific and core (cross-field) knowledge and skills.

Apprenticeships and VET programmes:

In all the examples found, learning is vocational-based. In some countries (England, Scotland, New Zealand and Australia) these are called "modern apprenticeships". These take the form of two categories, namely a programme-led apprenticeship where learners are able to follow a vocational programme at a college and then seek employment as trainees/apprentice/interns in order to qualify as artisans; and an employer-led apprenticeship, in which learners are engaged in a formal contract of workplace-based learning. In most cases learners "earn while they learn".

Application (Purpose):

As is the intention with the South African Further Education and Training Certificate Level 4 qualification, the international qualifications all prepare learners for working as skilled artisans within the field of Lifting and Mechanical Handling.

4. Concluding remarks:

The Further Education and Training Certificate: Mechanical Handling (Rigging) developed for South Africa compares favourably with the international qualifications mentioned above and there is no doubt concerning the portability of the Further Education and Training Certificate: Mechanical Handling (Rigging) qualification for migration purposes.

It must be stated though that certain countries do require an indigenous certification of qualification (trade test certificate). This may mean that individuals may need to be re-assessed in the selected target country.

5. Reference documents:

- 5.1 Availability of skilled labour in selected occupations in Western Australia (Shah. Cooney, Long and Burke: 2005).
- 5.2 National Guidelines on Cross-Sectoral Qualification Linkages (Australian Qualifications Framework (AQF) Implementation Handbook: 2002).
- 5.3 Lifting and Mechanical Handling Guidelines (Step Change in Safety-ERS Network Off-shore Oil and Gas Industry: UK).
- 5.4 Policy Watch: Apprenticeship framework: A Change in Design (Sian Owen: 2005; Authorised by Steve Besley-UK).
- 5.5 Training in Engineering Construction Skills: Employers Guide (TECSkills and the ECITB-UK: 2007).
- 5.6 Modern Apprenticeships: The Way to Work (Cassels Report: 2001)-UK.
- 5.7 Role of Apprenticeship in VET System: The Case of Botswana (Ahmad:2003) at Conference on the Reform of Technical and Vocational Education and Training (TVET) Gaborone, Botswana.
- 5.8 Challenges Facing Vet Transformation in the Sadc Region (Akoojee and McGrath: 2003 HSRC-Pretoria) at Conference on the Reform of Technical and Vocational Education and Training (TVET) Gaborone, Botswana.

6. Reference Web-sites:

www.ecitb.org.za; www.ntis.gov.au; www.bota.org.bw; www.kiwiquals.govt.nz; www.bcit.ca; www.nait.ca; www.cotr.bc.ca; www.edexcel.co.uk; www.tullontraining.co.uk; www.doleta.com; www.tecskills.org.za.

ARTICULATION OPTIONS

Horizontal articulation:

Horizontal articulation within the core learning component at this level, applies partially to equivalent credit accrual for some unit standards in the following engineering qualifications, e.g.:

- ID 49053: National Certificate: Supervision of Construction Processes, NQF Level 4.
- ID 48439: Further Education and Training Certificate: Road Transport Supervision, NQF Level 4.

The Qualification has been designed and structured so that qualifying learners can move from one mechanical handling context to another. This can be achieved by the appropriate selection of credits in the elective category.

Fundamental learning at this level applies to equivalent credit accrual for most engineering qualifications at NQF Level 4.

Vertical Articulation:

Stakeholders are urged to investigate specialist areas of expertise beyond NQF Level 4 which may allow for vertical articulation.

Possible articulation currently exists for progress to NQF Level 5 through:

- Specialisation as an Approved Inspection Authority (Lifting Machinery Inspection).
- Certificate: Engineering Management, NQF Level 5.

- Access Certificate: Business, NQF Level 5; or similar Business Administration Certificates.
- Certificate: Construction Project Management, NQF Level 5.
- Certificate: Project Management, NQF Level 5.

MODERATION OPTIONS

• Anyone assessing a learner or moderating the assessment of a learner against this Qualification must be registered with an appropriate Education and Training Quality Assurance Body (ETQA) or with an ETQA which has a Memorandum of Understanding (MOU) with the relevant ETQA.

• Any institution offering learning that will enable the achievement of this qualification must be accredited as a Training Provider with the relevant ETQA or with an ETQA that has a Memorandum of Understanding (MOU) with the relevant ETQA.

• Moderation of assessment will be overseen by the relevant ETQA or by an ETQA that has a Memorandum of Understanding (MOU) with the relevant ETQA according to that ETQA's guidelines for assessment and moderation.

• Moderation includes both internal and external moderation of assessment/s at the exit points of the qualification, unless ETQA policies specify otherwise. Moderation should also encompass achievement of the competence described both in individual unit standards as well as in exit level outcomes described in this Qualification.

CRITERIA FOR THE REGISTRATION OF ASSESSORS

The following criteria should be applied by a relevant ETQA as a minimum requirement:

1. Assessors should be in possession of an appropriate qualification, namely:

- Mechanical Handling (Rigging) at NQF level 4 including a minimum period of work-related experience as specified by the relevant ETQA.
- An artisan qualification in Rigging (Trade test certificate or completed contract of apprenticeship) including a minimum period of work-related experience as specified by the relevant ETQA.
- Subject matter experience, which may be established through recognition of prior learning (RPL).

2. Registration as an assessor with the relevant Education and Training Quality Assurance Body.

3. Proven inter-personal skills and the ability to:

- Maintain national and local industry standards.
- Act in the interest of the learner.
- Understand the need for transformation to redress the legacies of the past, and respect the cultural background and language of the learner.

NOTES

In terms of learning and assessment within the chemical industry sector, this qualification replaces qualification 13693, "Mechanics: Chemical Rigging", Level 4, 120 credits.

This qualification also replaces other registered and non-registered (in-house) occupational.

UNIT STANDARDS

ID	UNIT STANDARD TITLE	LEVEL	CREDITS
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	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
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	253660	Supervise advanced mobile crane operations	Level 3	20
Core	13254	Contribute to the implementation and maintenance of business processes	Level 4	10
Core	253883	Lift and move a complex load using a winch	Level 4	6
Core	13224	Monitor the application of safety, health and environmental protection procedures	Level 4	4
Core	253596	Perform a pre-engineering study in order to undertake rigging activities	Level 4	6
Core	116583	Perform tandem lifting	Level 4	12
Core	9406	Manage a team	Level 5	4
Core	113855	Manage the transportation of abnormal loads	Level 5	6
Elective	253638	Sling and communicate during crane operations	Level 2	4
Elective	10195	Apply Engineering Principles and concepts in a Power Generation Process Plant	Level 3	5
Elective	253656	Communicate with clients	Level 3	3
Elective	14783	Conform to and apply legislation and operational instructions in chemical processing	Level 3	4
Elective	253590	Lift and move a load in suspension using a mobile crane	Level 3	4
Elective	253636	Pilot material and equipment in a shaft	Level 3	2
Elective	253576	Replace the boom sheave wheel of a dragline	Level 3	3
Elective	253641	Terminate a steel wire rope by means of capping	Level 3	2
Elective	253614	Transport material and equipment in a shaft barrel	Level 3	5
Elective	253557	Conduct a routine inspection on an elevator	Level 4	2
Elective	253602	Examine a winder rope	Level 4	4
Elective	253655	Examine winder rope attachments	Level 4	4
Elective	253578	Inspect, prepare and use a man-lift carriage for work at elevated heights	Level 4	3
Elective	253583	Inspect, prepare and use a tube bundle machine on a petrochemical plant	Level 4	4
Elective	253594	Manoeuvre a load by utilising a temporary construction	Level 4	5
Elective	14920	Participate in groups and/or teams to recommend solutions to problems	Level 4	3
Elective	253586	Perform a boom conversion	Level 4	5
Elective	116692	Plan, organise and control the erection, alteration/repositioning and dismantling of access scaffolding	Level 4	12
Elective	116691	Plan, organise and control the erection, alteration/repositioning and dismantling of load bearing scaffolding	Level 4	12
Elective	116690	Plan, organise and control the erection, alteration/repositioning and dismantling of suspended scaffolding	Level 4	18
Elective	115333	Repair, replace and/or adjust helicopter cargo suspension hooks and rescue hoists	Level 4	4
Elective	253580	Replace a winder rope	Level 4	6
Elective	253584	Replace a winder rope sheave wheel	Level 4	5

	ID	UNIT STANDARD TITLE	LEVEL	CREDITS
Elective	253598	Terminate and secure the back-end of a winder rope	Level 4	4
Elective	253589	Transfer a load by means of snatching and anchoring	Level 4	4
Elective	113851	Manage the transportation of dangerous goods	Level 5	6

LEARNING PROGRAMMES RECORDED AGAINST THIS QUALIFICATION**None**



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Identify and use steel wire ropes***

SAQA US ID	UNIT STANDARD TITLE		
253554	Identify and use steel wire ropes		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	12

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

SPECIFIC OUTCOME 1

Identify and explain the application of steel wire ropes.

SPECIFIC OUTCOME 2

Splice, join and inspect steel wire ropes.

SPECIFIC OUTCOME 3

Use steel wire ropes.

SPECIFIC OUTCOME 4

Maintain, care and store steel wire ropes.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59730	National Certificate: Mechanical Handling (Rigging)	Level 3	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:**Manufacture basic rigging hand tools**

SAQA US ID	UNIT STANDARD TITLE		
253555	Manufacture basic rigging hand tools		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

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

SPECIFIC OUTCOME 1

Explain the manufacturing process.

SPECIFIC OUTCOME 2

Plan and prepare the manufacturing process.

SPECIFIC OUTCOME 3

Manufacture rigging hand tools.

SPECIFIC OUTCOME 4

Store tools and equipment.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Conduct a routine inspection on an elevator***

SAQA US ID		UNIT STANDARD TITLE	
253557		Conduct a routine inspection on an elevator	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	2

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

SPECIFIC OUTCOME 1

Explain the factors critical to conducting a routine inspection on an elevator.

SPECIFIC OUTCOME 2

Prepare to conduct a routine inspection on an elevator.

SPECIFIC OUTCOME 3

Conduct a routine inspection on an elevator.

SPECIFIC OUTCOME 4

Prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Inspect, use and care for manual lifting equipment and tackle***

SAQA US ID	UNIT STANDARD TITLE		
253575	Inspect, use and care for manual lifting equipment and tackle		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	5

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

SPECIFIC OUTCOME 1

Identify and explain the application of manual lifting equipment and tackle.

SPECIFIC OUTCOME 2

Inspect manual lifting equipment and tackle.

SPECIFIC OUTCOME 3

Use manual lifting equipment and tackle.

SPECIFIC OUTCOME 4

Maintain, care and store manual lifting equipment and tackle.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59769	Further Education and Training Certificate: Mechanical Engineering: Pipe-Fitting	Level 4	Draft - Prep for P Comment	
Core	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Replace the boom sheave wheel of a dragline

SAQA US ID	UNIT STANDARD TITLE		
253576	Replace the boom sheave wheel of a dragline		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technology			
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

Explain the factors critical to replacing the boom sheave wheel of a dragline.

SPECIFIC OUTCOME 2

Prepare to replace the boom sheave wheel of a dragline.

SPECIFIC OUTCOME 3

Replace the boom sheave wheel.

SPECIFIC OUTCOME 4

Test the boom sheave wheel, and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:*Inspect, prepare and use a man-lift carriage for work at elevated heights*

SAQA US ID		UNIT STANDARD TITLE	
253578		Inspect, prepare and use a man-lift carriage for work at elevated heights	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
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

Identify and explain the application of man-lift carriage.

SPECIFIC OUTCOME 2

Plan, prepare and inspect man-lift carriage.

SPECIFIC OUTCOME 3

Use a man-lift carriage.

SPECIFIC OUTCOME 4

Maintain, care and store the man-lift carriage, tools and equipment.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Replace a winder rope

SAQA US ID	UNIT STANDARD TITLE		
253580	Replace a winder rope		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	6

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

SPECIFIC OUTCOME 1

Explain the factors critical to replacing a winder rope.

SPECIFIC OUTCOME 2

Prepare to replace a winder rope.

SPECIFIC OUTCOME 3

Replace a winder rope.

SPECIFIC OUTCOME 4

Test the winder and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Place and move a load by utilising rollers***

SAQA US ID	UNIT STANDARD TITLE		
253581	Place and move a load by utilising rollers		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	2

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

SPECIFIC OUTCOME 1

Explain the factors critical to placing and moving a load by utilising rollers.

SPECIFIC OUTCOME 2

Prepare to place and move a load by utilising rollers.

SPECIFIC OUTCOME 3

Place and move a load by utilising rollers.

SPECIFIC OUTCOME 4

Complete the placing and moving process and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Lift and move a load using manual lifting equipment and tackle***

SAQA US ID	UNIT STANDARD TITLE		
253582	Lift and move a load using manual lifting equipment and tackle		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	8

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
116622	Lift and position loads	Level 3	12	Will occur as soon as 253582 is registered

SPECIFIC OUTCOME 1

Identify and explain the application of lifting equipment.

SPECIFIC OUTCOME 2

Plan and prepare to lift and move the load.

SPECIFIC OUTCOME 3

Use lifting equipment to lift and move the load.

SPECIFIC OUTCOME 4

Maintain, care and store equipment.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:*Inspect, prepare and use a tube bundle machine on a petrochemical plant*

SAQA US ID	UNIT STANDARD TITLE		
253583	Inspect, prepare and use a tube bundle machine on a petrochemical plant		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

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

SPECIFIC OUTCOME 1

Identify and explain the application of tube bundle machine.

SPECIFIC OUTCOME 2

Plan, prepare and inspect tube bundle machine.

SPECIFIC OUTCOME 3

Use a tube bundle machine.

SPECIFIC OUTCOME 4

Maintain, care and store the tube bundle machine, tools and equipment.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Replace a winder rope sheave wheel

SAQA US ID	UNIT STANDARD TITLE		
253584	Replace a winder rope sheave wheel		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technology			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
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

Explain the factors critical to replacing a winder rope sheave wheel.

SPECIFIC OUTCOME 2

Prepare to replace a winder rope sheave wheel.

SPECIFIC OUTCOME 3

Replace a winder rope sheave wheel.

SPECIFIC OUTCOME 4

Test the winder and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Apply lubrication to a steel wire rope***

SAQA US ID		UNIT STANDARD TITLE	
253585		Apply lubrication to a steel wire rope	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	2

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

SPECIFIC OUTCOME 1

Explain the factors critical to lubricating steel wire ropes.

SPECIFIC OUTCOME 2

Prepare to lubricate a steel wire rope.

SPECIFIC OUTCOME 3

Lubricate a steel wire rope.

SPECIFIC OUTCOME 4

Complete the lubrication process and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59730	National Certificate: Mechanical Handling (Rigging)	Level 3	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Perform a boom conversion***

SAQA US ID		UNIT STANDARD TITLE	
253586		Perform a boom conversion	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
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

Explain the boom conversion procedure.

SPECIFIC OUTCOME 2

Plan and prepare for the boom conversion.

SPECIFIC OUTCOME 3

Perform the boom conversion.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Transfer a load by means of snatching and anchoring

SAQA US ID	UNIT STANDARD TITLE		
253589	Transfer a load by means of snatching and anchoring		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

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

SPECIFIC OUTCOME 1

Explain the factors critical to transferring a load by means of snatching and anchoring.

SPECIFIC OUTCOME 2

Prepare to transfer a load by means of snatching and anchoring.

SPECIFIC OUTCOME 3

Transfer the load by means of snatching and anchoring.

SPECIFIC OUTCOME 4

Complete the load transferring process and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Lift and move a load in suspension using a mobile crane***

SAQA US ID	UNIT STANDARD TITLE		
253590	Lift and move a load in suspension using a mobile crane		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technology			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	4

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

SPECIFIC OUTCOME 1

Identify, discuss and explain the application of mobile cranes with loads in suspension.

SPECIFIC OUTCOME 2

Plan and prepare to lift and move the load (in suspension).

SPECIFIC OUTCOME 3

Lift and move the load (in suspension).

SPECIFIC OUTCOME 4

Maintain, care and store equipment.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Identify and use fibre ropes***

SAQA US ID	UNIT STANDARD TITLE		
253591	Identify and use fibre ropes		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

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

SPECIFIC OUTCOME 1

Identify and explain the application of fibre ropes.

SPECIFIC OUTCOME 2

Splice, join and inspect fibre ropes.

SPECIFIC OUTCOME 3

Maintain, care and store fibre ropes.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Manoeuvre a load by utilising a temporary construction***

SAQA US ID	UNIT STANDARD TITLE		
253594	Manoeuvre a load by utilising a temporary construction		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
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

Explain the factors critical to manoeuvring a load by means of a temporary construction.

SPECIFIC OUTCOME 2

Prepare to manoeuvre a load by means of a temporary construction.

SPECIFIC OUTCOME 3

Manoeuvre the load by means of a temporary construction.

SPECIFIC OUTCOME 4

Complete the manoeuvring process and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Direct the operation of an overhead crane***

SAQA US ID	UNIT STANDARD TITLE		
253595	Direct the operation of an overhead crane		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
10541	Direct the operation of an overhead crane	Level 2	3	Will occur as soon as 253595 is registered

SPECIFIC OUTCOME 1

Demonstrate knowledge relating to crane directing operations.

SPECIFIC OUTCOME 2

Prepare to direct crane operations.

SPECIFIC OUTCOME 3

Direct crane operations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Perform a pre-engineering study in order to undertake rigging activities***

SAQA US ID	UNIT STANDARD TITLE		
253596	Perform a pre-engineering study in order to undertake rigging activities		
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	6

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

SPECIFIC OUTCOME 1

Determine the necessity for undertaking a pre-engineering study.

SPECIFIC OUTCOME 2

Identify the elements and consideration of a pre-engineering study.

SPECIFIC OUTCOME 3

Conduct the pre-engineering study.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Lift and turn a load***

SAQA US ID		UNIT STANDARD TITLE	
253597		Lift and turn a load	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	4

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

SPECIFIC OUTCOME 1

Explain the factors critical to lifting and turning a load.

SPECIFIC OUTCOME 2

Prepare to replace lift and turn a load.

SPECIFIC OUTCOME 3

Lift and turn the load.

SPECIFIC OUTCOME 4

Complete the lifting and turning a load process and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59730	National Certificate: Mechanical Handling (Rigging)	Level 3	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Terminate and secure the back-end of a winder rope

SAQA US ID		UNIT STANDARD TITLE	
253598		Terminate and secure the back-end of a winder rope	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

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

SPECIFIC OUTCOME 1

Explain the factors critical to terminating and securing of a back-end of a winder rope.

SPECIFIC OUTCOME 2

Prepare to terminate and secure the back-end of a winder rope.

SPECIFIC OUTCOME 3

Terminate and secure the back-end of the winder rope.

SPECIFIC OUTCOME 4

Complete the terminating and securing process, and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:*Use a side-boom to lift, lower and carry materials*

SAQA US ID		UNIT STANDARD TITLE	
253600		Use a side-boom to lift, lower and carry materials	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	5

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
14566	Use a sideboom to lift, lower and carry material	Level 2	5	Will occur as soon as 253600 is registered

SPECIFIC OUTCOME 1

Plan work activity.

SPECIFIC OUTCOME 2

Prepare work area.

SPECIFIC OUTCOME 3

Lift, lower and carry material.

SPECIFIC OUTCOME 4

Report and communicate information.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Secure a load for transportation

SAQA US ID	UNIT STANDARD TITLE		
253601	Secure a load for transportation		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

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

SPECIFIC OUTCOME 1

Identify, discuss and explain securing methods.

SPECIFIC OUTCOME 2

Plan and prepare to secure the load.

SPECIFIC OUTCOME 3

Secure the load.

SPECIFIC OUTCOME 4

Inspect the load.

SPECIFIC OUTCOME 5

Maintain, care and store equipment.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59730	National Certificate: Mechanical Handling (Rigging)	Level 3	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Examine a winder rope***

SAQA US ID		UNIT STANDARD TITLE	
253602		Examine a winder rope	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

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

SPECIFIC OUTCOME 1

Explain the factors critical to examining a winder rope.

SPECIFIC OUTCOME 2

Prepare to examine a winder rope.

SPECIFIC OUTCOME 3

Examine the winder rope.

SPECIFIC OUTCOME 4

Complete the examining process and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Manoeuvre a load using mechanical lifting equipment

SAQA US ID	UNIT STANDARD TITLE		
253603	Manoeuvre a load using mechanical lifting equipment		
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	7

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
10740	Lift and move a load using a mechanical lifting equipment	Level 3	7	Will occur as soon as 253603 is registered

SPECIFIC OUTCOME 1

Explain the factors critical to manoeuvring loads.

SPECIFIC OUTCOME 2

Prepare to manoeuvre a load.

SPECIFIC OUTCOME 3

Manoeuvre the load.

SPECIFIC OUTCOME 4

Make the load available for production purposes.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	
Core	59730	National Certificate: Mechanical Handling (Rigging)	Level 3	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Transport material and equipment in a shaft barrel***

SAQA US ID	UNIT STANDARD TITLE		
253614	Transport material and equipment in a shaft barrel		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	5

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

SPECIFIC OUTCOME 1

Explain the factors critical to transporting material and equipment in a shaft barrel.

SPECIFIC OUTCOME 2

Prepare to transport material and equipment in a shaft barrel.

SPECIFIC OUTCOME 3

Transport material and equipment in a shaft barrel.

SPECIFIC OUTCOME 4

Complete the transporting process and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Lift and move a load using the pick and carry method***

SAQA US ID		UNIT STANDARD TITLE	
253615		Lift and move a load using the pick and carry method	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

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

SPECIFIC OUTCOME 1

Discuss and explain the pick and carry method.

SPECIFIC OUTCOME 2

Plan and prepare to lift and move the load using the pick and carry method.

SPECIFIC OUTCOME 3

Pick and carry the load.

SPECIFIC OUTCOME 4

Maintain, care and store equipment.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59730	National Certificate: Mechanical Handling (Rigging)	Level 3	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Replace the bucket assembly of a dragline

SAQA US ID	UNIT STANDARD TITLE		
253635	Replace the bucket assembly of a dragline		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	2

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
115727	Replace the bucket assembly of a dragline	Level 2	2	Will occur as soon as 253635 is registered

SPECIFIC OUTCOME 1

Explain the factors critical to replacing the bucket assembly of a dragline.

SPECIFIC OUTCOME 2

Prepare to replace the bucket assembly of a dragline.

SPECIFIC OUTCOME 3

Replace the bucket assembly of a dragline.

SPECIFIC OUTCOME 4

Test the bucket assembly of a dragline and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Pilot material and equipment in a shaft

SAQA US ID		UNIT STANDARD TITLE	
253636		Pilot material and equipment in a shaft	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	2

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

SPECIFIC OUTCOME 1

Explain the factors critical to piloting material and equipment in a shaft.

SPECIFIC OUTCOME 2

Prepare to pilot the material and equipment.

SPECIFIC OUTCOME 3

Pilot the material and equipment.

SPECIFIC OUTCOME 4

Clear the shaft, and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Replace steelwork in a shaft***

SAQA US ID	UNIT STANDARD TITLE		
253637	Replace steelwork in a shaft		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technology			
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

Explain the factors critical to replacing steelwork in a shaft.

SPECIFIC OUTCOME 2

Prepare to replace the steelwork.

SPECIFIC OUTCOME 3

Replace the steelwork.

SPECIFIC OUTCOME 4

Prepare the shaft for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59730	National Certificate: Mechanical Handling (Rigging)	Level 3	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Sling and communicate during crane operations

SAQA US ID	UNIT STANDARD TITLE		
253638	Sling and communicate during crane operations		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
116256	Sling and communicate during crane operations	Level 2	4	Will occur as soon as 253638 is registered

SPECIFIC OUTCOME 1

Identify types of lifting equipment.

SPECIFIC OUTCOME 2

Inspect and evaluate lifting gear.

SPECIFIC OUTCOME 3

Prepare and sling regular loads.

SPECIFIC OUTCOME 4

Communicate during crane operations.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Replace a conveyance in a shaft

SAQA US ID	UNIT STANDARD TITLE		
253639	Replace a conveyance in a shaft		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	2

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

SPECIFIC OUTCOME 1

Explain the factors critical to replacing a conveyance in a shaft.

SPECIFIC OUTCOME 2

Prepare to replace a conveyance in a shaft.

SPECIFIC OUTCOME 3

Replace a conveyance in a shaft.

SPECIFIC OUTCOME 4

Test the conveyance and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59730	National Certificate: Mechanical Handling (Rigging)	Level 3	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:*Perform a lifting task using a floating method*

SAQA US ID	UNIT STANDARD TITLE		
253640	Perform a lifting task using a floating method		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	8

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

SPECIFIC OUTCOME 1

Identify, discuss and explain the use of floating methods.

SPECIFIC OUTCOME 2

Plan and prepare to lift and float the load.

SPECIFIC OUTCOME 3

Lift and float the load.

SPECIFIC OUTCOME 4

Maintain, care and store equipment.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59730	National Certificate: Mechanical Handling (Rigging)	Level 3	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Terminate a steel wire rope by means of capping

SAQA US ID	UNIT STANDARD TITLE		
253641	Terminate a steel wire rope by means of capping		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	2

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

SPECIFIC OUTCOME 1

Explain the factors critical to terminating steel wire ropes by means of resin capping.

SPECIFIC OUTCOME 2

Prepare to terminate a steel wire rope by means of resin capping.

SPECIFIC OUTCOME 3

Terminate the steel wire rope by means of resin capping.

SPECIFIC OUTCOME 4

Complete the terminating process, and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Perform pre-use maintenance and inspection on lifting machinery and equipment***

SAQA US ID		UNIT STANDARD TITLE	
253654		Perform pre-use maintenance and inspection on lifting machinery and equipment	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	4

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

SPECIFIC OUTCOME 1

Discuss and explain basic maintenance and inspection procedures.

SPECIFIC OUTCOME 2

Plan and prepare for the maintenance and inspection process.

SPECIFIC OUTCOME 3

Perform the maintenance and inspection procedure.

SPECIFIC OUTCOME 4

Maintain, care and store tools and equipment.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59730	National Certificate: Mechanical Handling (Rigging)	Level 3	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Examine winder rope attachments***

SAQA US ID		UNIT STANDARD TITLE	
253655		Examine winder rope attachments	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	4

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

SPECIFIC OUTCOME 1

Explain the factors critical to examining winder rope attachments.

SPECIFIC OUTCOME 2

Prepare to examine winder rope attachments.

SPECIFIC OUTCOME 3

Examine winder rope attachments.

SPECIFIC OUTCOME 4

Prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Communicate with clients***

SAQA US ID		UNIT STANDARD TITLE	
253656		Communicate with clients	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
9528	Communicate with clients	Level 3	3	Will occur as soon as 253656 is registered

SPECIFIC OUTCOME 1

Engage in an effective two-way communication discussion with customers.

SPECIFIC OUTCOME 2

Show a basic understanding of the role of body language and tone of voice when communicating.

SPECIFIC OUTCOME 3

Communicate effectively with clients on the telephone.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Re-rail rolling stock by means of jacks***

SAQA US ID		UNIT STANDARD TITLE	
253657		Re-rail rolling stock by means of jacks	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
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

Explain the factors critical to re-railing rolling stock by means of jacks.

SPECIFIC OUTCOME 2

Prepare to re-rail rolling stock by means of jacks.

SPECIFIC OUTCOME 3

Re-rail rolling stock by means of jacks.

SPECIFIC OUTCOME 4

Complete the re-railing process and prepare for operation and/or production.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Perform a lifting task by using a mobile crane***

SAQA US ID		UNIT STANDARD TITLE	
253658		Perform a lifting task by using a mobile crane	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Engineering and Related Design	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	8

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

SPECIFIC OUTCOME 1

Identify, discuss and explain the use of mobile cranes.

SPECIFIC OUTCOME 2

Plan and prepare to lift and move the load.

SPECIFIC OUTCOME 3

Direct the mobile crane operation to lift and move the load.

SPECIFIC OUTCOME 4

Maintain, care and store equipment.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59730	National Certificate: Mechanical Handling (Rigging)	Level 3	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Make up a steel wire rope specimen for testing purposes***

SAQA US ID		UNIT STANDARD TITLE	
253659		Make up a steel wire rope specimen for testing purposes	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	2

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

SPECIFIC OUTCOME 1

Explain the factors critical to making up a steel wire rope specimen for testing purposes.

SPECIFIC OUTCOME 2

Prepare to make up a steel wire rope specimen for testing purposes.

SPECIFIC OUTCOME 3

Make up a steel wire rope specimen for testing purposes.

SPECIFIC OUTCOME 4

Complete the steel wire rope making up process.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Supervise advanced mobile crane operations

SAQA US ID	UNIT STANDARD TITLE		
253660	Supervise advanced mobile crane operations		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technology			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	20

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
116978	Conduct advanced mobile crane operations	Level 3	20	Will occur as soon as 253660 is registered

SPECIFIC OUTCOME 1

Plan work activity.

SPECIFIC OUTCOME 2

Prepare work area.

SPECIFIC OUTCOME 3

Conduct mobile crane operations.

SPECIFIC OUTCOME 4

Carry out documentation, required checks and servicing.

SPECIFIC OUTCOME 5

Move mobile crane from site to site.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Install scraper rigs and rig scraper ropes in an underground workplace***

SAQA US ID	UNIT STANDARD TITLE		
253674	Install scraper rigs and rig scraper ropes in an underground workplace		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
9681	Install scraper rigs and rig scraper ropes in an underground workplace	Level 2	4	Will occur as soon as 253674 is registered

SPECIFIC OUTCOME 1

Rig scraper ropes for scraping operations in an underground workplace.

SPECIFIC OUTCOME 2

Explain specified requirements pertaining to the installation of scraper rigs.

SPECIFIC OUTCOME 3

Prepare to install scraper rigs and rig scraper ropes.

SPECIFIC OUTCOME 4

Install scraper rigs and rig scraper ropes.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Load and unload persons into and from a shaft conveyance***

SAQA US ID	UNIT STANDARD TITLE		
253694	Load and unload persons into and from a shaft conveyance		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	4

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
9605	Load and unload persons into and from a shaft conveyance	Level 2	4	Will occur as soon as 253694 is registered

SPECIFIC OUTCOME 1

Explain the specified requirements pertaining to the conveying of persons in a shaft.

SPECIFIC OUTCOME 2

Prepare to load and unload persons into and from a conveyance.

SPECIFIC OUTCOME 3

Load and unload persons into and from a conveyance.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Install scraper ropes onto scraper winch drums

SAQA US ID	UNIT STANDARD TITLE		
253714	Install scraper ropes onto scraper winch drums		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	2

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
9680	Install scraper ropes onto scraper winch drums	Level 2	2	Will occur as soon as 253714 is registered

SPECIFIC OUTCOME 1

Explain specified requirements pertaining to the installation of scraper ropes.

SPECIFIC OUTCOME 2

Prepare to install scraper ropes.

SPECIFIC OUTCOME 3

Install scraper ropes.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Load long material into a shaft conveyance***

SAQA US ID		UNIT STANDARD TITLE	
253715		Load long material into a shaft conveyance	
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
9606	Load long material into a shaft conveyance	Level 2	3	Will occur as soon as 253715 is registered

SPECIFIC OUTCOME 1

Explain specified requirements for the loading of long material into a shaft conveyance.

SPECIFIC OUTCOME 2

Preparing to load long material into a shaft conveyance.

SPECIFIC OUTCOME 3

Loading long material into a shaft conveyance.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Load and remove rolling stock into and from a shaft conveyance***

SAQA US ID	UNIT STANDARD TITLE		
253754	Load and remove rolling stock into and from a shaft conveyance		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	8

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

SPECIFIC OUTCOME 1

Explain specified requirements for the loading and removal of rolling stock into and from a shaft conveyance.

SPECIFIC OUTCOME 2

Prepare to load and remove rolling stock into and from a shaft conveyance.

SPECIFIC OUTCOME 3

Load and remove rolling stock into and from a shaft conveyance.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Adhere to basic occupational health and safety practices pertaining to shaft operations

SAQA US ID	UNIT STANDARD TITLE		
253774	Adhere to basic occupational health and safety practices pertaining to shaft operations		
ORIGINATOR		PROVIDER	
SGB Generic Manufacturing, Engineering & Technolog			
FIELD		SUBFIELD	
6 - Manufacturing, Engineering and Technology		Fabrication and Extraction	
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	3

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

SPECIFIC OUTCOME 1

Describe specified requirements in the event of operational problems pertaining to shaft operations.

SPECIFIC OUTCOME 2

Describe specified requirements in the event of emergencies pertaining to shaft operations.

SPECIFIC OUTCOME 3

Explain the legal requirements regarding health and safety practices in the workplace.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:***Prepare a conveyance for shaft examination and repairs***

SAQA US ID	UNIT STANDARD TITLE		
253775	Prepare a conveyance for shaft examination and repairs		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Fabrication and Extraction		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 2	2

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

SPECIFIC OUTCOME 1

Explain specified requirements for the preparation of a conveyance for shaft examination and repairs.

SPECIFIC OUTCOME 2

Prepare to set up a conveyance for shaft examination and repairs.

SPECIFIC OUTCOME 3

Prepare a conveyance for shaft examination and repairs.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59729	National Certificate: Mechanical Handling (Rigging)	Level 2	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Adapt to working in a client's work environment

SAQA US ID	UNIT STANDARD TITLE		
253880	Adapt to working in a client's work environment		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 3	3

This unit standard replaces:

US ID	Unit Standard Title	NQF Level	Credits	Replacement Status
14720	Adapt to working in a client's work environment	Level 3	3	Will occur as soon as 253880 is registered

SPECIFIC OUTCOME 1

Understand, describe and discuss the employer's rules and procedures related to working off site.

SPECIFIC OUTCOME 2

Determine the client's workplace policies and procedures and adapt work processes.

SPECIFIC OUTCOME 3

Understand, describe and discuss the relationship between contractor and client.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Elective	59730	National Certificate: Mechanical Handling (Rigging)	Level 3	Draft - Prep for P Comment	



SOUTH AFRICAN QUALIFICATIONS AUTHORITY

UNIT STANDARD:

Lift and move a complex load using a winch

SAQA US ID	UNIT STANDARD TITLE		
253883	Lift and move a complex load using a winch		
ORIGINATOR	PROVIDER		
SGB Generic Manufacturing, Engineering & Technolog			
FIELD	SUBFIELD		
6 - Manufacturing, Engineering and Technology	Engineering and Related Design		
ABET BAND	UNIT STANDARD TYPE	NQF LEVEL	CREDITS
Undefined	Regular	Level 4	6

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

SPECIFIC OUTCOME 1

Identify and explain the application of winches.

SPECIFIC OUTCOME 2

Prepare to lift and/or move the complex load.

SPECIFIC OUTCOME 3

Use a winch to lift and move the complex load.

SPECIFIC OUTCOME 4

Maintain, care and store equipment.

QUALIFICATIONS UTILISING THIS UNIT STANDARD

	ID	QUALIFICATION TITLE	LEVEL	STATUS	END DATE
Core	59731	Further Education and Training Certificate: Mechanical Handling (Rigging)	Level 4	Draft - Prep for P Comment	