


	BQA NCQF QUALIFICATION TEMPLATE	Document No.	DNCQF.QIDD.GD02
		Issue No.	01
		Effective Date	04/02/2020

SECTION A: QUALIFICATION DETAILS											
QUALIFICATION DEVELOPER (S)		Wool International									
TITLE	Certificate III in Heavy Plant Operations								NCQF LEVEL	3	
FIELD	Manufacturing, Engineering and Technology			SUB-FIELD		Heavy Plant Operations			CREDIT VALUE	45	
New Qualification					√		Review of Existing Qualification				
SUB-FRAMEWORK		General Education			√		TVET			Higher Education	
QUALIFICATION TYPE	Certificate	I	II	III	√	IV	V	Diploma	Bachelor		
	Bachelor Honours			Post Graduate Certificate				Post Graduate Diploma			
Masters					Doctorate/ PhD						

RATIONALE AND PURPOSE OF THE QUALIFICATION											
RATIONALE:											
<p>The reasons for training learners on Heavy Plant Operations is facilitating the holistic development of graduates who can operate in a global context, is to achieve a high quality and fitness of purpose for training offered. The policy, statutory and legislative context on the basis of which this qualification is being developed for registration and eventual awarding are include in the creation of a knowledge-based education system to respond to economic needs, responding to diversification of the economy to include education and skills development and citizen economic empowerment using education and training as a tool and asset.</p> <p>The scope of the qualification covers finding of training needs assessment undertaken in a specific desk research, job tasks analysis and determination of what employers believe are the knowledge, skills and</p>											

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competences. This coverage is to make the course relevant for its intended use, be of value to those who will access it and bring improvement in skills levels of people in the vocation which hopefully would improve productivity in workplaces.

By developing and packaging it as an outcomes-based credits awarding qualifications makes it credible valuable and useful to enable mobility of holders across borders and as entry currency to other similar level and higher qualifications in this vocation (horizontal and vertical articulation). This design thus conforms to NCQF policy for enabling lifelong learning by outcomes and credits system, which opens access to education to many through RPL, and enable CAT across ETPs and qualifications.

HRD Sector Skills Plans (2017) indicators identifies demand for people with Heavy Plant Operations at this level, to support productive safe work that contributes to economic growth of different sectors of the economy that are dependent on skilled human resources domain.

Labour statistics analysis list civil construction and mining machine operations as one of the occupational trades which are in high demand; on the other hand, Government NDP 11 has identified various mega development projects that will require machine operators. The mining sector also anticipate growth and expansion in its long-term projections. This thus raises demand for human resources with machine operations competences and qualified with a suit of skills required in these jobs.

This, thus raises demand for human resources with heavy plant competences and qualified with a suit of skills required in these jobs. The qualification could contribute to address the national problem of unemployed youth and increase the employability of graduates in certain vocational areas with acquisition of heavy pant fitting skills.

This qualification serves the needs of the society and the economy by providing heavy plant lifting support services. It will help in producing 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 and industry standards.

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PURPOSE:

The purpose of this qualification is to produce graduates with knowledge, skills and competences to:

- Prepare and inspect plant or machinery.
- Operate plant or machinery of choice in the construction or mining industry.
- Maintain plant or machinery according to manufacturer's specifications.
- Communicate clearly in the construction or mining industry.

ENTRY REQUIREMENTS (including access and inclusion)

Entry to this qualification is open to the following criteria:

- Certificate II in General Education (NCQF Level 2) or equivalence.
- There shall be consideration for RPL and CAT according to national RPL and CAT policies.

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SECTION B QUALIFICATION SPECIFICATION	
GRADUATE PROFILE (LEARNING OUTCOMES)	ASSESSMENT CRITERIA
<p>1. Apply knowledge of construction machinery and mechanics of machines.</p>	<p>1.1 Display knowledge of soil properties, earthwork materials and processes.</p> <p>1.2 Identify and rectify hazards before operating machine.</p> <p>1.3 Locate major components and respective operating systems.</p> <p>1.4 Exhibit knowledge of road traffic signs and Regulations.</p>
<p>2. Operate plant or machinery in construction or mining environment.</p>	<p>2.1 Conduct pre- operational and start up procedures of machine according to manufacturer's operating manual.</p> <p>2.2 Operate machinery according to plans, drawings and or job specification.</p> <p>2.3 Respond to the electronic monitoring system and warning light symbols.</p> <p>2.4 Perform Park and shut down procedures of machine according to operating manual.</p> <p>2.5 Isolate battery or electrical energy at the end of a working shift.</p>
<p>3. Service and maintain plant or machinery in construction or mining environment.</p>	<p>3.1 Clean the machine to remove all builds up at different areas in terms of cooling, lubrication and major components or systems.</p> <p>3.2 Select fuel, and lubricants used during service and maintenance of the machine.</p> <p>3.3 Complete inspections and maintenance records according to manufacturer's operating manual and</p>

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	<p>organizational procedures.</p> <p>3.4 Clean and store tools and materials for plant or machinery.</p>
<p>4. Apply mining or construction machinery operation processes in a given project.</p>	<p>4.1 Identify appropriate machinery for operation in a given project.</p> <p>4.2 Interpret operations specifications and drawings.</p> <p>4.3 Display knowledge of Regulatory requirements of crane operation.</p> <p>4.4 Use appropriate load and capacity information in lifting and moving load.</p> <p>4.5 Explain methods used in identifying hazards and handling hazardous materials.</p>
<p>5. Demonstrate knowledge of major components and functions of lifting equipment.</p>	<p>5.1 Differentiate the various types of lifting machines that are in different projects.</p> <p>5.2 Describe the major components of lifting equipment and their functions.</p> <p>5.3 Identify various attachments to the lifting machines and explain their functions.</p> <p>5.4 Use proper systems, gauges, instruments and controls in lifting equipment.</p>
<p>6. Demonstrate knowledge and use requirements of current legislation impacting on Health, Safety and environmental issues in the workplace.</p>	<p>6.1 Apply current legislation, regulations and standard practices to the right SHE incident and scenario to meet set targets.</p> <p>6.2 Implement appropriate legislation to occupational SHE context in handling incidents and scenarios.</p> <p>6.3 Identify safe workplace procedures by name and use.</p>



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SECTION C	QUALIFICATION STRUCTURE				
COMPONENT	TITLE	Credits Per Relevant NCQF Level			Total (Per Subject/ Course/ Module/ Units)
		Level [3]	Level [4]	Level []	
FUNDAMENTAL COMPONENT <i>Subjects/ Courses/ Modules/Units</i>	Safety, Health and Environmental	2			2
	Plant and machinery safety		3		3
	Plans and drawings	2			2
	Team and Interpersonal Skills	2			2
CORE COMPONENT <i>Subjects/Courses/ Modules/Units</i>	Introduction to Plant & Machinery	2			2
	Construction Processes	3			3
	Operator Compartment	2			2
	Electronic Monitoring System	3			3
	Plant Components		4		4
	Machinery Attachments	2			2
	Plant Inspections		3		3
	Service and Maintenance	2			2

	Tools and Materials	2			2
	Road traffic signs and regulations	2			2
ELECTIVE/ OPTIONAL COMPONENT <i>Subjects/Courses/ Modules/Units</i> NB: Choose two (2) Modules	Small Plant Strand				
	Operate A Bitumen Spray Equipment	5			5
	Operate A Compactor	5			5
	Operate A Continuous Bucket Trencher		5		5
	Operate A Hot Mix Asphalt Paving Machine	5	5		5
	Operate A Pneumatic Roller	5			5
	Operate A Tow Tractor	5			5
	Operate A Side Boom		5		5
	Operate A Skid Steer Loader	5			5
		Construction Plant Strand			
	Operate An Articulated Dump Truck		5		5
	Operate A backhoe/loader		5		5
	Operate A Bulldozer		5		5
	Operate A Front-End Loader		5		5
	Operate A Hydraulic Excavator		5		5

	Operate A Motor Grader		5		5
	Operate A Motor Scrapper		5		5
	Operate A Pipe Layer		5		5
	Operate A Rigid Body Dump		5		5
	Operate A Rock Breaker		5		5
	large Mining Plant Strand				
	Operate An Articulated Dump Truck		5		5
	Operate An Off-Highway Rigid Truck		5		5
	Operate A Dragline		5		5
	Operate A Rope Shovel		5		5
	Operate A Hydraulic Shovel		5		5
	Operate A Track Drill		5		5
	Operate A Wheel Loader		5		5
	Operate A Wheel Dozer		5		5
	Operate A Track Dozer		5		5

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SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL

TOTAL CREDITS PER NCQF LEVEL

<i>NCQF Level</i>	<i>Credit Value</i>
3	25
4	20
TOTAL CREDITS	45

Rules of Combination:
(Please Indicate combinations for the different constituent components of the qualification)

This Certificate III in Heavy Plant Operations comprises 44 credits, comprising of Fundamental, Core and elective Components from one strand.

Fundamental Components:
 The Fundamental components to the value of 9 credits are compulsory.

Core Components:
 The core components to the value of 25 credits are compulsory.

Elective Components:
 Learners are to choose elective module(s) to the value of 10 credits from one strand to attain a minimum of 44 credits required for the qualification. the three strand includes.

- Small Plant Strand
- Construction Plant Strand
- Large Mining Strand


Credits Summary

25 Credits at level 3.

20 Credits at level 4.

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Total Minimum Credit 44
<i>ASSESSMENT ARRANGEMENTS</i>
<ul style="list-style-type: none"> • Assessment will include both formative and summative modes. • Formative assessment will contribute 50% to the overall course grade. Summative assessment will constitute the other 50% of the overall course grade. • Assessment shall be carried out by BQA accredited Assessors. • Assessment will be carried out in accordance with the institutional policies and in line with the national policy.
<i>MODERATION ARRANGEMENTS</i>
<p>The sole purpose of moderation is to make sure that assessment and marking across all courses is fair, valid and reliable. It also aligns the assessment tool to the outlined learning outcomes, that it is set at an appropriate level of study and that the process of marking is consistently done.</p> <ul style="list-style-type: none"> • There will be both Internal Moderation and External moderation • Moderation for assessment shall be carried out by BQA accredited moderators. • Moderation will be done in accordance with the institutional policies and in line with the national policy.
<i>RECOGNITION OF PRIOR LEARNING</i>
<p>This qualification is designed to allow award through RPL assessment, in accordance with Institutional and National RPL policy.</p>
<i>CREDIT ACCUMULATION AND TRANSFER</i>
<p>This qualification is designed to allow award through CAT assessment, in accordance with Institutional and National CAT policy.</p>
<i>PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)</i>
<p>Horizontal Pathways</p> <ul style="list-style-type: none"> Certificate III in Lifting Equipment Certificate III in Crane Operation

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Vertical Pathways

Certificate IV in Heavy Plant Operations

Certificate IV in Crane Operation

Employment Pathways

Heavy Plant Operator

Small Plant Operator

Construction Plant Operator

QUALIFICATION AWARD AND CERTIFICATION

Award of the Qualification

A candidate is required to achieve a minimum credit of 65 to be awarded the Certificate III in Heavy Plant Operations qualification, inclusive of the fundamental, core and elective components.

Certification

There will be issuance of a certificate and official transcript at award.

REGIONAL AND INTERNATIONAL COMPARABILITY

The Certificate III in Heavy Plant Operations qualification was benchmarked Regionally with SGB Civil Engineering Construction submitted and registered at SAQA, and benchmarked International with TAFE NSW in Australian as presented in the Comparability Matrix.


The proposed qualification is a hybrid that incorporates training in various mining and construction machines, both heavy and small as strands or specialisations. The modules and exit learning outcome are almost similar as conformity to international standards.

Similarities

All the compared qualifications serve the same purpose of preparing graduates to acquire elementary level knowledge and skills to be able to operate selected equipment in various contexts.

Similar in **learning outcomes** include:

- Understand mechanical and leverage principles to operate earthmoving,
- Apply health and safety legislations, regulations and procedures in plant operations.

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- Perform plant operation related functions.

The **core unit standards** of these qualifications reflect similarities in the following:

- Introduction to Plant & Machinery
- Safety
- Service and Maintenance
- Earthworks and civil construction

Differences

The scope of the core component of the South African qualification exceeds its counterparts as it prepares the learner for the workplace beyond the operation of plant to include other important competences to ensure success.

REVIEW PERIOD

The qualification shall be reviewed every Five, (5) years.