

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

SECTION A: QUALIFICATION DETAILS																						
QUALIFICATION DEVELOPER (S)			Woo International																			
TITLE		Certificate Iv In Coded Welding									NCQF LEVEL		4									
FIELD		Manufacturing, Engineering And Technology			SUB-FIELD		Welding			CREDIT VALUE		65										
New Qualification					☒		Review of Existing Qualification															
SUB-FRAMEWORK		General Education			☐		TVET			☒		Higher Education										
QUALIFICATION TYPE		<table border="1"> <tr> <td>Certificate</td> <td>I</td> <td>II</td> <td>III</td> <td>IV</td> <td>☒</td> <td>V</td> <td>Diploma</td> <td>Bachelor</td> </tr> </table>												Certificate	I	II	III	IV	☒	V	Diploma	Bachelor
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: The reasons for training learners on Coded Welding and facilitating the holistic development of people who can operate in a global context, is to achieve a high quality and fitness of purpose for training offered.																						

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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.

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 competencies. 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 Coded Welding 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, SONA reports, other indicators and NDP 11 identified various mega development projects that will apply Coded welding services for these projects.

This thus raises demand for human resources with Coded Welding competencies 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 Coded Welding skills.

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The qualification is designed to guide providers in developing learning programmes, according to the needs of industry for people with this skill, and circumstances of the learners. People credited with this qualification contribute to the cutting materials, welding and fabricating components by the application of knowledge and skills.

This qualification serves the needs of the society and the economy by providing welding processes, equipment and techniques, and the interpretation of engineering drawings for welding purposes 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.

PURPOSE:

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

- Interpret drawings and develop patterns and templates of coded welding.
- Carry out metal welding using manual arc and oxy-acetylene welding processes in all positions.
- Develop, lay out metal work pieces for fabrication and fabricate metal components and structures.
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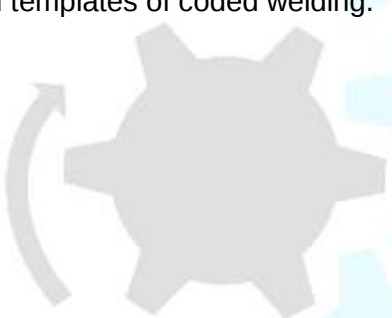
ENTRY REQUIREMENTS (including access and inclusion)

Entry Requirements:

The normal admission requirement is:

1. Certificate III (NCQF Level 3), or equivalent.
2. There is provision for entry through RPL and CAT.

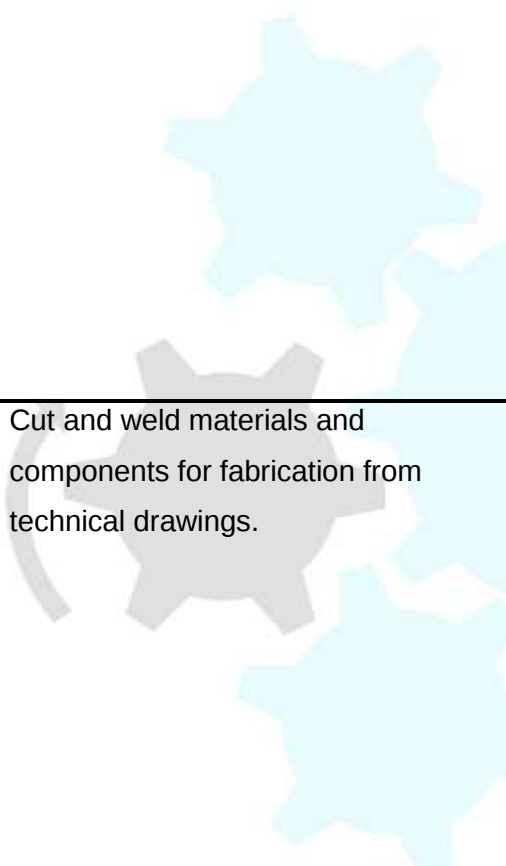
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SECTION B QUALIFICATION SPECIFICATION	
GRADUATE PROFILE (LEARNING OUTCOMES)	ASSESSMENT CRITERIA
1. Interpret drawings and develop patterns and templates of coded welding. 	1.1 Draw and interpret plate, pipe and structural steel engineering projections. 1.2 Explain techniques used to develop prefabricated components for plate, pipe structural steel drawings. 1.3 Determine material requirements with calculations according to drawing specifications.
2. Demonstrate knowledge on fundamentals of coded welding and metal technology.	2.2 Categorize properties and characteristics of metals. 2.3 Apply welding symbols used in coded welding and metal technology. 2.4 Apply welding and cutting procedures in a given welding task. 2.5 Differentiate the types of heat treatment and hardness tests of metals for coded welding. 2.6 Identify the different types of materials used in component fabrication applications.

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	2.7 Use the different types of pipe work components according to their characteristics and applications
3. Weld metals using Arc Welding method in coded welding designs. 	3.1 Identify manual metal arc welding techniques. 3.2 Use TIG Welding techniques in coded welding designs. 3.3 Use MIG welding process in coded welding designs. 3.4 Prepare and weld materials with manual metal arc welding techniques in all positions according to welding standards. 3.5 Weld fillet, plate butt and pipe welds with manual metal arc welding techniques according to welding standards. 3.6 Identify and correct welding defects in welding designs.
4. Weld metals using the oxy-fuel gas welding and brazing methods coded welding designs.	4.1 Identify appropriate Oxy- acetylene welding and brazing techniques for coded welding designs. 4.2 Apply soldering and brazing methods according to welding industry standards.

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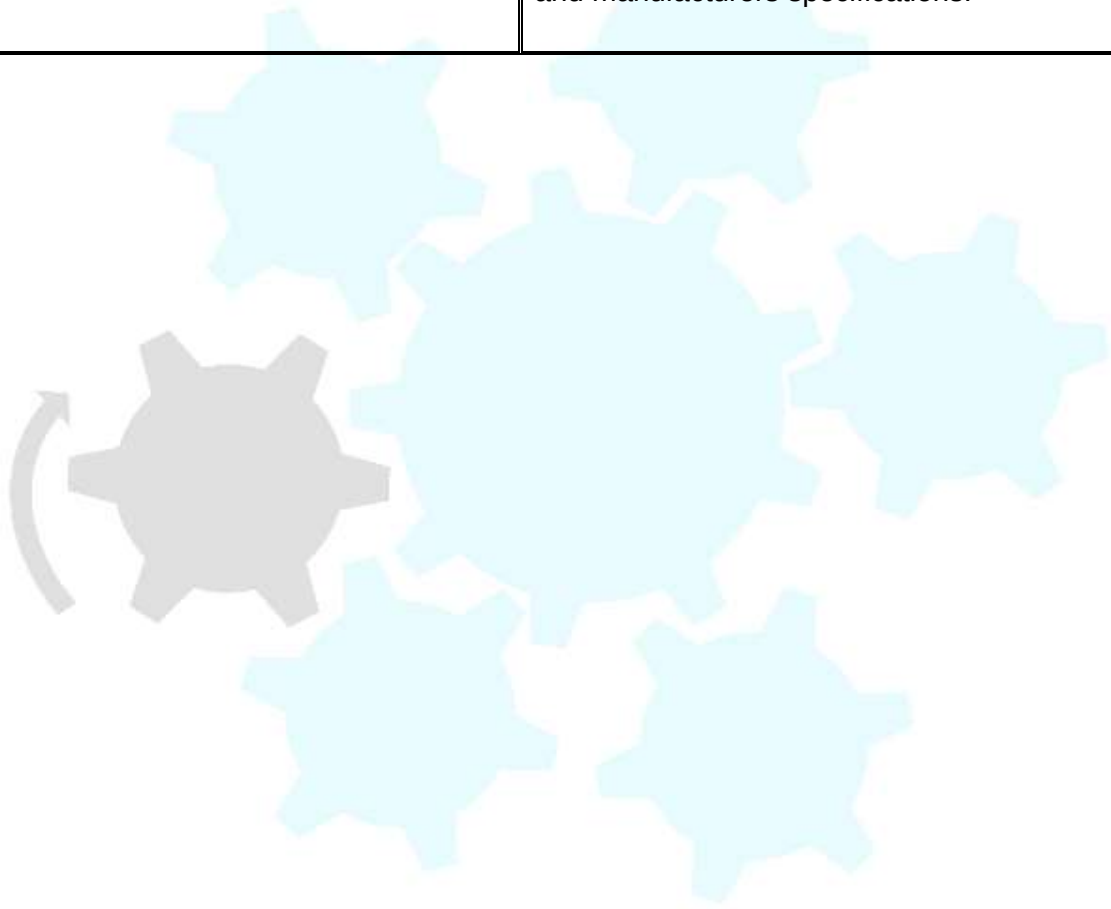
		4.3 Weld work pieces with the oxy-acetylene welding process in all positions according to welding standards. 4.4 Weld fillet, plate butt and pipes welds using the oxy-acetylene welding and drawings according to standards.
	5. Cut and weld materials and components for fabrication from technical drawings.	5.1 Interpret Technical Drawings and templates for fabrication from technical drawings. 5.2 Outline fabrication processes in accordance with workplace procedures and accepted industry practice. 5.3 Lay out and cut templates and jigs from the original blueprint or approved drawing. 5.4 Identify appropriate Arc and oxygen arc cutting equipment and processes for given tasks. 5.5 Perform gas cutting and heating of materials in accordance with drawings instructions.
	6. Fabricate components and structures according to specification requirements.	6.1 Employ appropriate fabrication procedures according to specification requirements.

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		6.2 Identify and use appropriate fabrication materials and processes of drawings to meet job requirements. 6.3 Identify the right fabrication machinery components to meet specification requirements. 6.4 Interpret drawings and identify components and assemblies to be fabricated. 6.5 Fabricate materials, components and work in accordance with drawings instructions.
	7. Demonstrate knowledge and use requirements of current legislation impacting on Health, Safety and environmental issues in the workplace.	7.1 Apply current legislation, regulations and standard practices to the right SHE incident and scenario to meet set targets. 7.2 Apply legislation that affects ones occupational SHE to handle all incidents and scenarios. 7.3 Identify workplace safe work procedures by name and use,
	8. Erect, use and dismantle access scaffolding as per manufacturers standards	8.1 Identify access scaffolding in terms of type of cargo to be lifted. 8.2 Carry out scaffolding erection safely and to the customers' needs and intended use.

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	8.3 Dismantle scaffolding by following set procedure and manufacturers specifications.
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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 [5]	
FUNDAMENTAL COMPONENT Subjects/ Courses/ Modules/Units	Safety, Health And Environmental	2			2
	Technical Drawings	2			2
	Scaffolding, working at heights	3			3
	Entrepreneurship	2			2
CORE COMPONENT Subjects/Courses/ Modules/Units	Welding	3			3
	Oxy-Fuel Welding	3			3
	Flux-Cored Arc Welding		5		5
	Metal work		5		5
	Manual Metal Arc Welding		5		5
	oxy/acetylene welding		5		5

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	Gas tungsten and gas metal arc welding		5		5
	Arc Cutting		5		5
	Forming and shaping components		5		5
	Develop and fabricate components		5		5
	Tools and Equipment		5		5
ELECTIVE/ OPTIONAL COMPONENT <i>Subjects/Courses/ Modules/Units</i> NB: Choose one	Plasma Arc Cutting		5		5
	Plasma Arc Welding		5		5
	TIG Welding		5		5
	MIG Welding		5		5
	Total credits	15	50		65

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SUMMARY OF CREDIT DISTRIBUTION FOR EACH COMPONENT PER NCQF LEVEL	
TOTAL CREDITS PER NCQF LEVEL	
NCQF Level	Credit Value
Level 3	15
Level 4	50
TOTAL CREDITS	65
Rules of Combination: (Please Indicate combinations for the different constituent components of the qualification)	
This Certificate IV in Coded Welding comprises 65 credits, comprising of Fundamental, Core and elective Components. Fundamental Components: The Fundamental components consist of foundational knowledge to the value of 9 credits all of which are compulsory. Core Components: The core components consist of modules containing applied knowledge and practical skills to the value of 51 credits which are compulsory. Elective Components: Learners are to choose elective unit standard to the value of at least 5 credits so as to attain a minimum of 65 credits for the qualification.	

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ASSESSMENT ARRANGEMENTS

- 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.

MODERATION ARRANGEMENTS

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.

- 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.

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RECOGNITION OF PRIOR LEARNING

This qualification is designed to allow award through RPL assessment, in accordance with Institutional and National RPL policy.

CREDIT ACCUMULATION AND TRANSFER

This qualification is designed to allow award through CAT, in accordance with Institutional and National CAT policy

PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

Horizontal Articulation

- Certificate IV in Electro-Mechanical Welding
- Certificate IV Gas Metal Arc Welding
- Certificate IV in Pipe Developing & Fabrication

Vertical Articulation

- Certificate V in Electro-Mechanical Welding
- Certificate V Gas Metal Arc Welding
- Certificate V in Pipe Developing & Fabrication

Employment Pathways

- Coded Welder.
- Welder
- Fabricator
- Welding Technician

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QUALIFICATION AWARD AND CERTIFICATION

Award of the Qualification

A candidate is required to achieve a minimum credit of 65 to be awarded the **CERTIFICATE IV IN CODED WELDING** qualification, inclusive of the fundamental, core and elective components, to be awarded the qualification.

Certification

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

REGIONAL AND INTERNATIONAL COMPARABILITY

Compared to the proposed qualification, modules offered in the benchmark qualifications are almost similar when considering the strands or specializations in welding as a stand- alone.

The National Certificate in Welding offers unit standards based and reflects a similar level of complexity and duration of study (1 year) to the proposed qualification. The competencies covered are the same but, the National Certificate in Welding qualification ones are covered as part of qualifications rather than short courses.

The proposed qualification recognises demonstrated core knowledge, skills, and competence in welding. It is in terms of the latter that it differs to the SAQA qualification, National Certificate: Welding Application and Practice.

Compared to the proposed qualification, modules offered in the benchmark qualifications are almost similar when considering the strands or specializations in welding as a stand- alone. Modules offered in the proposed and the benchmark qualifications are almost similar as conformity to International Welding and Fabrication Standards.

REVIEW PERIOD

The qualification will be reviewed every Five (5) years.