



Accredited Provider
The Skills College for Development and Training (Pty)Ltd.

National Certificate: Welding Application and Practice

Qualification ID 57886 – NQF 3; 151 Credits

INTRODUCTION

Purpose:

The purpose of this Qualification is to provide learners with the standards and the range of learning required to work effectively in the welding industry and to meet the challenges of such an environment.

This Qualification recognises the intermediate level skills, knowledge and values acquired by learners involved in welding. The purpose of this Qualification is to develop learners who, after completion, demonstrate the ability to:

Use and apply a variety of plate welding, cutting, and gouging processes according to performance standards.

Demonstrate an understanding of welding procedures and the quality of welded components.
Maintain organizational relationships through effective communication with clients, peers and members of supervisory/management levels.

> Range: Maintaining effective relationships; verbal and written reporting; exploring options for further learning.

Welding skills and techniques play a role in this Qualification.

This Qualification requires that learners apply intermediate level welding practice and theoretical knowledge, within any of the following environments:

Manufacturing and Assembly.

Chemical Plant Installations.

Food Processing Plant Installations.

Mining.

Building and Construction.

This qualification may be applied in other relevant engineering environments.

Qualifying learners will also understand:

The basics of business finance.

The investigation and monitoring of the financial aspects of personal, business and national issues.

Effective communication techniques (oral and written) when dealing with clients and fellow workers, while participating in workplace activities.

Applicable numeracy skills at this level.

Managing work-time effectively (Productivity).

What learners achieve in this Qualification will also serve as a basis for further learning where they will further develop their skills and knowledge to include more complex welding processes and techniques.

Rationale:

This is the second Qualification in a learning pathway for learners who want to follow a career in welding. The qualification replaces the National Certificate: Welding Application and Practice NQF Level 3, and the interimly registered qualification: National Certificate: Chemical Welder (NQF Level 3).

This Qualification focuses on developing skills and knowledge necessary to establish a career in welding at an intermediate level.

The welding industry operates in a competitive and challenging environment. The finished processes have to respond to a wide variety of exacting customer and consumer requirements. In addition, the industry has to respond to international competition and environmental issues.

Welding application and practice require joining and cutting of materials that meet national and international requirements. Welding generally requires the joining of material that is subjected to considerable stress when in operation and the welding process therefore needs to be consistent and accurate.

This Qualification forms part of a series at different levels to create opportunities for development, a career path and greater security of employment within the welding industry.

This Qualification enables learners who have gained relevant experience in the workplace to obtain credits through the RPL process.

Recognition of prior learning:

This qualification may be obtained in part or wholly through the recognition of prior learning. The learner should be thoroughly briefed on the mechanism to be used and support and guidance should be provided. Care should be taken that the mechanism used provides the learner with an opportunity to demonstrate competence and is not so onerous as to prevent learners from taking up the RPL option towards gaining a Qualification.

Access to the Qualification:

Access to this qualification is open. However, it is preferable that learners have completed the National Certificate: Welding Application and Practice: NQF Level 2.

EXIT LEVEL OUTCOMES

1. Use and apply a variety of plate welding, cutting, and gouging processes according to performance standards.
2. Demonstrate an understanding of welding procedures and the quality of welded components.
3. Maintain organizational relationships through effective communication with clients, peers and members of supervisory/management levels.

Range: Maintaining effective relationships; verbal and written reporting; exploring options for further learning.

TIME PERIOD

This Learnership can be presented over a period of 12 months. Contact sessions can be determined. This do not need to be 100% contact session based.

A SELECTION OF THE FOLLOWING UNIT STANDARDS WILL BE COMPLETED THAT IS CONSTITUENT TO 151 CREDITS:

UNIT STANDARDS:

	ID	UNIT STANDARD TITLE	PRE-2009 NQF LEVEL	NQF LEVEL	CREDITS
Core	243055	Prepare and secure work pieces for welding (includes the use of manipulators)	Level 2	NQF Level 02	8
Core	243056	Weld carbon steel workpieces using the shielded metal arc welding process in all positions	Level 2	NQF Level 02	16
Core	243064	Weld carbon steel workpieces, using the gas metal arc welding process in all positions	Level 2	NQF Level 02	15
Core	14707	Gouge material with air-carbon-arc gouging process	Level 3	NQF Level 03	10
Core	243052	Weld carbon steel workpieces using the cored-wire welding process in all positions	Level 3	NQF Level 03	8
Core	243058	Weld carbon steel workpieces using the gas tungsten arc welding process in all positions	Level 3	NQF Level 03	25
Core	243053	Weld carbon steel workpieces using the oxy-acetylene gas welding process in all positions	Level 3	NQF Level 03	10
Fundamental	116937	Use a Graphical User Interface (GUI)-based spreadsheet application to create and edit spreadsheets	Level 2	NQF Level 02	4
Fundamental	119472	Accommodate audience and context needs in oral/signed communication	Level 3	NQF Level 03	5
Fundamental	9528	Communicate with clients	Level 3	NQF Level 03	3
Fundamental	12488	Complete feasibility and commissioning reports	Level 3	NQF Level 03	3
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	NQF Level 03	2
Fundamental	119457	Interpret and use information from texts	Level 3	NQF Level 03	5
Fundamental	9012	Investigate life and work related problems using data and probabilities	Level 3	NQF Level 03	5
Fundamental	7456	Use mathematics to investigate and monitor the financial aspects of personal, business and national issues	Level 3	NQF Level 03	5
Fundamental	119465	Write/present/sign texts for a range of communicative contexts	Level 3	NQF Level 03	5

Elective	243061	Assemble work pieces in jigs (minor amendments include the use of manipulators)	Level 2	NQF Level 02	3
Elective	12238	Draw and interpret simple engineering drawings	Level 2	NQF Level 02	10
Elective	116231	Operate a cab controlled overhead crane	Level 2	NQF Level 02	8
Elective	116254	Operate a mobile crane	Level 2	NQF Level 02	20
Elective	243272	Operate a Mobile Elevating Work Platform (MEWP)	Level 2	NQF Level 02	10
Elective	116235	Operate a pendant controlled overhead crane	Level 2	NQF Level 02	5
Elective	262824	Operate a Sideboom	Level 2	NQF Level 02	8
Elective	116255	Operate a tower crane	Level 2	NQF Level 02	20
Elective	116253	Operate a truck mounted loader crane	Level 2	NQF Level 02	20
Elective	242981	Operate defined purpose lift trucks	Level 2	NQF Level 02	4
Elective	242976	Operate overhead/gantry cranes	Level 2	NQF Level 02	5
Elective	12484	Perform basic fire fighting	Level 2	NQF Level 02	4
Elective	12483	Perform basic first aid	Level 2	NQF Level 02	4
Elective	243021	Shift loads using lifting equipment	Level 2	NQF Level 02	4
Elective	243074	Weld carbon steel components, using the submerged arc welding process in a downhand position	Level 2	NQF Level 02	12
Elective	243077	Cut material using the oxy-fuel pipe cutting device	Level 3	NQF Level 03	3
Elective	243080	Cut material using the oxy-fuel profile cutting machine	Level 3	NQF Level 03	5
Elective	243081	Cut material using the oxy-fuel straight-line cutting machine	Level 3	NQF Level 03	3
Elective	12457	Develop learning strategies and techniques	Level 3	NQF Level 03	3
Elective	243086	Draw and interpret complex plate, pipe and structural steel plate, pipe and structural steel drawings	Level 3	NQF Level 03	6

Elective	244407	Lift and move a load using mechanical lifting equipment	Level 3	NQF Level 03	7
Elective	260798	Operate a cantilever container crane (ship to shore)	Level 3	NQF Level 03	12
Elective	260777	Operate a container side loader	Level 3	NQF Level 03	8
Elective	260818	Operate a counter balanced lift truck in excess of 15 tons	Level 3	NQF Level 03	9
Elective	260763	Operate a floating crane	Level 3	NQF Level 03	12
Elective	260760	Operate a inland container crane (rail mounted)	Level 3	NQF Level 03	10
Elective	260761	Operate a reach stacker	Level 3	NQF Level 03	10
Elective	260765	Operate a rubber tyred gantry crane	Level 3	NQF Level 03	12
Elective	260817	Operate a scotch derrick crane (ship mounted)	Level 3	NQF Level 03	10
Elective	260764	Operate a ships crane	Level 3	NQF Level 03	8
Elective	260797	Operate a sideloader lift truck	Level 3	NQF Level 03	8
Elective	260757	Operate a straddle carrier	Level 3	NQF Level 03	10
Elective	260780	Operate a sugar cane crane	Level 3	NQF Level 03	8
Elective	260781	Operate a telescopic boom handler	Level 3	NQF Level 03	10
Elective	260758	Operate a wall-mounted jib	Level 3	NQF Level 03	7
Elective	242972	Operate advanced defined purpose lift trucks	Level 3	NQF Level 03	7
Elective	242974	Operate counter-balanced lift truck	Level 3	NQF Level 03	7
Elective	242982	Operate heavy crane	Level 3	NQF Level 03	14
Elective	260762	Operate rough terrain/earthmoving/agricultural equipment	Level 3	NQF Level 03	11
Elective	123260	Operate tailgates and tail-lifts	Level 3	NQF Level 03	2

Elective	242978	Operate truck-mounted cranes	Level 3	NQF Level 03	8
Elective	8039	Operating cranes	Level 3	NQF Level 03	10
Elective	8038	Operating lift trucks	Level 3	NQF Level 03	6
Elective	253658	Perform a lifting task by using a mobile crane	Level 3	NQF Level 03	8
Elective	243078	Perform destructive testing on welded specimens	Level 3	NQF Level 03	5
Elective	14695	Remove material with the shields metal arc gouging process	Level 3	NQF Level 03	8
Elective	117001	Use a mobile crane to carry out pile driving	Level 3	NQF Level 03	8
Elective	9533	Use communication skills to handle and resolve conflict in the workplace	Level 3	NQF Level 03	3
Elective	243273	Monitor and control the safety and operations of Mobile Elevating Work Platforms	Level 4	NQF Level 04	8
Elective	116583	Perform tandem lifting	Level 4	NQF Level 04	12
Elective	253660	Supervise advanced mobile crane operations	Level 4	NQF Level 04	20
Elective	243088	Weld carbon steel pipe, with combination welding processes using the gas tungsten arc welding and gas metal arc welding, in all positions	Level 4	NQF Level 04	8
Elective	243059	Weld workpieces in the stainless steel material group, using the gas metal arc welding process in all positions	Level 4	NQF Level 04	10
Elective	243089	Weld workpieces within the aluminium material group, using the gas metal arc welding process in all positions	Level 4	NQF Level 04	10
Elective	243079	Weld workpieces within the aluminium material group, using the gas tungsten arc welding process in all positions.	Level 4	NQF Level 04	10
Elective	243057	Weld workpieces within the stainless steel material group, using the gas tungsten arc welding process in all positions	Level 4	NQF Level 04	10