

National Vocational Certificate in Metal Fabrication (Boilermaking) (Level 3)
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NQF level of qualification:	3
Total credits available:	90
Total credits required:	90

	Compulsory	Elective
level 2 credits:	8	-
level 3 credits:	82	-
minimum totals required	90	-

Registration date: 29 November 2018

Scheduled review date: 2023

Body responsible for the qualification: Namibia Training Authority-NTA OR through the Mining and Quarrying Construction, Electricity, Gas, Water Supply and Sanitation Industry Skills Committee (ISC) of the Namibia Training Authority

Other bodies whose unit standards are included in the qualification: None.

1 purpose

This qualification recognises people who have the competencies required for metal fabrication. It is awarded to people who apply workplace communication processes in a metal fabrication workplace; perform basic estimations, measurements and calculations for metal fabrication operations; interpret welding signs and symbols as part of metal fabrication operations; weld cast iron using the manual arc welding process in the down hand position; estimate production costs; join metals using oxy-acetylene brazing and silver soldering equipment as part of metal fabrication operations; weld aluminium using the manual arc welding process in the down hand position; weld stainless steel using the manual arc welding process in the down hand position; cut work pieces using the plasma cutting process as part of metal fabrication operations; weld stainless steel using the tungsten inert gas welding process in the down hand position; weld mild steel using the metal inert gas welding

process in the down hand position; carry out basic rigging and safe lifting practices as part of metal fabrication operations; interpret and draw basic engineering drawings and sketches as part of metal fabrication operations; lay out and fabricate hoppers and cones using the triangulation method as part of metal fabrication operations; lay out and fabricate pipe joints using the parallel line development method as part of metal fabrication operations; lay out and fabricate cones by means of the radial line development method as part of metal fabrication operations.

They further have a good understanding of applying knowledge of basic mathematics in different context; applying knowledge of fundamental engineering science in different contexts; applying fundamental knowledge of engineering drawing in different contexts; providing general First Aid.

The entry requirement for this qualification is the National Vocational Certificate in Metal Fabrication Level 2.

This qualification leads to the National Vocational Certificate in Metal Fabrication (Boilermaker) Level 4.

2. regulations for the qualification

2.1 summary of qualification requirements

This qualification will be awarded to people who are credited with 90 credits and have met the requirements of both the compulsory sections, as well as all requirements for Workplace Integrated Learning (WIL) as laid out in the National Policy On Work-Integrated Learning for Technical and Vocational Education and Training (TVET).

2.2 detailed qualification requirements

Compulsory

Credits for *all the unit standards listed below are required.*

FIELD: Manufacturing, Engineering and Technology

Subfield: Manufacturing Engineering

Domain: Metal Fabrication – Core Skills

Unit No.	Unit Standard Title	Level	Credit
231	Apply workplace communication processes in a metal fabrication workplace	2	2
237	Perform basic estimations, measurements, conversions and calculations for metal fabrication operations	2	4
239	Make templates and jigs as part of metal fabrication operations	2	2
2144	Weld cast iron using the manual arc welding process in the down hand position	3	4
2145	Estimate production costs	3	5
241	Join metals using oxy-acetylene brazing and silver soldering equipment as part of metal fabrication operations	3	4

242	Weld aluminium using the manual arc welding process in the down hand position	3	4
243	Weld stainless steel using the manual arc welding process in the down hand position	3	4
245	Cut work pieces using the plasma cutting process as part of metal fabrication operations	3	4
246	Weld stainless steel using the tungsten inert gas welding process in the down hand position	3	3
247	Weld mild steel using the metal inert gas welding process in the down hand position	3	6
249	Carry out basic rigging and safe lifting practices as part of metal fabrication operations	3	4
250	Interpret and draw basic engineering drawings and sketches as part of metal fabrication operations	3	4

FIELD: Manufacturing, Engineering and Technology
 Subfield: Manufacturing Engineering
 Domain: Metal Fabrication – Boilermaking

Unit No.	Unit Standard Title	Level	Credit
257	Lay out and fabricate hoppers and cones using the triangulation method as part of metal fabrication operations	3	6
258	Lay out and fabricate pipe joints using the parallel line development method as part of metal fabrication operations	3	6
259	Lay out and fabricate cones by means of the radial line development method as part of metal fabrication operations	3	6

FIELD: PHYSICAL, MATHEMATICAL AND COMPUTER STUDIES
 Subfield: Numeracy Skills
 Domain: Foundation Numeracy Skills

Unit No.	Unit Standard Title	Level	Credit
891	Apply knowledge of basic mathematics in different context	3	6

FIELD: MANUFACTURING, ENGINEERING AND TECHNOLOGY
 Subfield: Engineering Science and Drawing
 Domain: Foundation Engineering Science and Drawing Skills

Unit No.	Unit Standard Title	Level	Credit
894	Apply knowledge of fundamental engineering science in different contexts	3	6
901	Apply fundamental knowledge of engineering drawing in different contexts	3	6

FIELD: HEALTH SCIENCES AND SOCIAL SERVICES
 Subfield: Core Health
 Domain: First Aid

Unit No.	Unit Standard Title	Level	Credit
844	Provide General First Aid	3	4

3. Credits recognition and transfer arrangements

Credits for any version of a unit standard with the same identification number will be recognised in the award of this qualification.

4. Special Arrangements

4.1 Providers seeking registration and/or accreditation to deliver this qualification and the associated unit standards must meet the following special arrangements.

4.1.1 This qualification will be offered to trainees ***either*** including a 6 months period of **industrial/job attachment**, ***or*** as an **apprenticeship scheme** of a duration determined and agreed upon by the employer and the training provider on a ratio of 70/30 (70% at workplace and 30% at Training institution) basis.

Industrial/job attachment is defined as a period in a workplace setting where a trainee obtains structured practical experience in a specific occupation in order to complement competencies acquired during training at a technical vocational training provider (TVTP).

Apprenticeship refers to the system of work integrated learning, where an apprentice is employed by a company on contractual basis, earning a monthly salary, learning and working side-by-side with an experienced mentor. In this case the employer must be an NTA approved entity (company) to register apprentices and has to identify a suitable training provider to provide the apprentice with the opportunity to gain skills and knowledge from theoretical training.

Employers and training providers are encouraged to consult the **National Policy On Work-Integrated Learning (WIL) for Technical and Vocational Education and Training (TVET) Sector** for further details on WIL implementation.

4.1.2 Providers involved in the assessment of this qualification and the associated unit standards must comply with the national assessment framework for the TVET system up to and including level 5 of the National Qualifications Framework. Assessment will include performance and achievement assessment acquired through work integrated learning periods.

Assessment arrangements apply to all occupations and industries which are encompassed in the technical vocational education and training sector.

4.1.3 Providers of this qualification and the associated unit standards must be registered and/or accredited.

4.1.4 Providers of this qualification and their associated unit standards must have access to all equipment and facilities detailed in the tools and equipment list of the relevant training program.

4.2 Competencies covered in this qualification may be assessed through Recognition of Prior Learning (RPL).

4.3 Further relevant information and documentation may be accessed through:

Namibia Training Authority

Rand Street

Khomasdal

Namibia

Telephone number: 061 207 8550

Facsimile number: 061 207 8551

5 Transition arrangements

5.1 Non National Qualifications Framework transition

None

5.2 National Qualifications Framework transition

Version 2

This qualification was updated and issued as version 2 in 2018.

Version 1 of this qualification will not be awarded as from 31 December 2020. People currently working Version 1 of this qualification are advised to transfer their existing credits awards to this version of the qualification at any time during 2019 and beyond.

People holding the earlier version of this qualification will continue to have their qualification recognised within the Manufacturing, Engineering and Technology (Metal Fabrication) in terms of meeting relevant career and further learning entry and/or progression requirements.

National Vocational Certificate in Metal Fabrication (Boilermaking) (Level 4)
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NQF Level of qualification:	4
Total credits available:	109
Total Credits Required:	109

	Compulsory	Elective
level 3 credits:	33	-
level 4 credits:	76	-
minimum totals required	109	-

Registration date: 29 November 2018

Scheduled review date: 2023

Body responsible for the qualification: Namibia Training Authority-NTA OR through the Mining and Quarrying Construction, Electricity, Gas, Water Supply and Sanitation Industry Skills Committee (ISC) of the Namibia Training Authority

Other bodies whose unit standards are included in the qualification: None.

1 purpose

This qualification recognises people who have the competencies required for metal fabrication. It is awarded to people who gouge metals using manual arc equipment as part of metal fabrication operations; weld aluminum using the tungsten inert gas welding process in the down hand position; lay out, erect and install steel structures as part of metal fabrication operations; lay out and fabricate combined objects as part of metal fabrication operations; fabricate pipe joints using contour markers and

center finders as part of metal fabrication operations; lay out and fabricate work pieces and components using the calculation method as part of metal fabrication operations; perform fabrication of advanced cones by means of the radial line development method as part of metal fabrication operations; perform fabrication of advanced pipe joints using the parallel line development method as part of metal fabrication operations; weld mild steel using the tungsten inert gas welding process in all positions; perform advanced manual arc welding on aluminium in all positions; perform advanced tungsten inert gas welding on aluminium in all positions.

They further have a good understanding of applying knowledge of intermediate mathematics in different context; applying advanced knowledge of engineering science in different contexts; applying knowledge of advanced engineering drawing in different contexts; identifying, create and select business opportunities;

developing a business plan as part of business startup activities; provide general First Aid

The entry requirement for this qualification is the National Vocational Certificate in Metal Fabrication (Boilermaking) Level 3.

2. regulations for the qualification

2.1 summary of qualification requirements

This qualification will be awarded to people who are credited with 109 credits and have met the requirements of both the compulsory sections, as well as all requirements for Workplace Integrated Learning (WIL) as laid out in the National Policy On Work-Integrated Learning for Technical and Vocational Education and Training (TVET).

2.2 detailed qualification requirements

Compulsory

Credits for all the unit standards listed below are required.

FIELD: Manufacturing, Engineering and Technology
 Subfield: Mechanical Engineering
 Domain: Metal Fabrication – Core Skills

Unit No.	Unit Standard Title	Level	Credit
244	Gouge metals using manual arc equipment as part of metal fabrication operations	3	6
248	Weld aluminum using the tungsten inert gas welding process in the down hand position	3	4

FIELD: Manufacturing, Engineering and Technology
 Subfield: Mechanical Engineering
 Domain: Metal Fabrication – Boilermaking

Unit No.	Unit Standard Title	Level	Credit
260	Lay out, erect and install steel structures as part of metal fabrication operations	4	8
261	Lay out and fabricate combined objects as part of metal fabrication operations	4	6
262	Fabricate pipe joints using contour markers and center finders as part of metal fabrication operations	4	6
263	Lay out and fabricate work pieces and components using the calculation method as part of metal fabrication operations	4	6

264	Perform fabrication of advanced cones by means of the radial line development method as part of metal fabrication operations	4	6
265	Perform fabrication of advanced pipe joints using the parallel line development method as part of metal fabrication operations	4	6

FIELD: Manufacturing, Engineering and Technology
 Subfield: Mechanical Engineering
 Domain: Metal Fabrication – Welding

Unit No.	Unit Standard Title	Level	Credit
251	Weld mild steel using the tungsten inert gas welding process in all positions	3	6
252	Perform advanced manual arc welding on aluminium in all positions	4	6
253	Perform advanced tungsten inert gas welding on aluminium in all positions	4	6

FIELD: PHYSICAL, MATHEMATICAL AND COMPUTER STUDIES
 Subfield: Numeracy Skills
 Domain: Foundation Numeracy Skills

Unit No.	Unit Standard Title	Level	Credit
892	Apply knowledge of intermediate mathematics in different context	4	6

FIELD: MANUFACTURING, ENGINEERING AND TECHNOLOGY
 Subfield: Engineering Science and Drawing
 Domain: Foundation Engineering Science and Drawing Skills

Unit No.	Unit Standard Title	Level	Credit
896	Apply advanced knowledge of engineering science in different contexts	4	6
902	Apply knowledge of advanced engineering drawing in different contexts	4	6

FIELD: Business, Commerce and Management Studies
 Subfield: Business Development
 Domain: Entrepreneurship

Unit No.	Unit Standard Title	Level	Credit
733	Identify, create and select business opportunities	3	5
734	Develop a business plan as part of business startup activities	3	12

FIELD: HEALTH SCIENCES AND SOCIAL SERVICES
 Subfield: Core Health
 Domain: First Aid

Unit No.	Unit Standard Title	Level	Credit
845	Provide Advanced First Aid	4	8

3. Credits recognition and transfer arrangements

Credits for any version of a unit standard with the same identification number will be recognised in the award of this qualification.

4. Special Arrangements

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5.1 Non National Qualifications Framework transition

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5.2 National Qualifications Framework transition

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