

National Vocational Certificate in Metal Fabrication (Level 2)

NQF level of qualification:	2
Total credits available:	116
Total credits required:	116

	Compulsory	Elective
level 1 credits:	50	-
Level 2 credits:	66	
minimum totals required	116	

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).

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 safety rules and regulations in a metal fabrication work environment; plan and organise metal fabrication work; use hand tools for metal fabrication operations; operate portable electrical and power tools for metal fabrication; interpret welding signs and symbols as part of metal fabrication operations; assemble and test Oxy- Acetylene welding equipment as part of Metal Fabrication operations; weld mild steel using the Oxy-Acetylene in the down hand position; weld Mild steel using the manual arc welding process in the down hand position; cut mild steel using oxy-acetylene cutting equipment as part of metal fabrication operations; complete routine tasks using metal fabrication machines; demonstrate knowledge of engineering metals, properties and standards; demonstrate knowledge of the electrodes and filler rods.

They further have a good understanding of applying basic reading skills in a workplace environment; interacting with others in a workplace environment; using workplace documents; demonstrating basic awareness of HIV and AIDS; applying fundamental computer literacy skills; demonstrating basic knowledge of workplace health and safety; providing Basic First Aid; applying basic knowledge of engineering drawing in different contexts; applying basic entrepreneurship skills;

applying knowledge of pre-basic mathematics in different context as well as applying knowledge of basic engineering science in different contexts.

The entry requirement for this qualification is the ability to demonstrate basic communication skills in the English language and numeracy.

This qualification leads to the National Vocational Certificate in Metal Fabrication (Boilermaking) Level 3 or National Vocational Certificate in Metal Fabrication (Welding) Level 3.

2. regulations for the qualification

2.1 summary of qualification requirements

This qualification will be awarded to people who are credited with 116 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 ID	Unit Standard Title	Level	Credit
228	Apply safety rules and regulations in a metal fabrication work environment	1	2
229	Plan and organise metal fabrication work	1	2
230	Use hand tools for metal fabrication operations	1	4
232	Operate portable electrical and power tools for metal fabrication	2	8
233	Interpret welding signs and symbols as part of metal fabrication operations	2	4
234	Assemble and test Oxy- Acetylene welding equipment as part of Metal Fabrication operations	2	4
235	Weld mild steel using the Oxy-Acetylene in the down hand position	2	6
236	Weld Mild steel using the manual arc welding process in the down hand position	2	6

238	Cut mild steel using oxy-acetylene cutting equipment as part of metal fabrication operations	2	2
240	Complete routine tasks using metal fabrication machines	2	12
1741	Demonstrate knowledge of engineering metals, properties and standards	2	4

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

Unit No.	Unit Standard Title	Level	Credit
1742	Demonstrate knowledge of the electrodes and filler rods	2	2

FIELD: COMMUNICATION STUDIES AND LANGUAGES
 Subfield: Communication Skills
 Domain: Foundational Communication Skills

Unit No.	Unit Standard Title	Level	Credit
1150	Apply basic reading skills in a workplace environment	1	3
1151	Interact with others in a workplace environment	1	5
1152	Use workplace documents	1	5

FIELD: Health, Science and Social Services
 Subfield: Core Health
 Domain: HIV and AIDS Awareness

Unit No.	Unit Standard Title	Level	Credit
1155	Demonstrate basic awareness of HIV and AIDS	1	6

FIELD: COMMUNICATION STUDIES AND LANGUAGES
 Subfield: Financial Skills
 Domain: Computing Fundamentals

Unit No.	Unit Standard Title	Level	Credit
1156	Apply fundamental computer literacy skills	1	8

FIELD: Health, Science and Social Services
 Subfield: Preventative Health
 Domain: Occupational Health and Safety

Unit No.	Unit Standard Title	Level	Credit
1157	Demonstrate basic knowledge of workplace health and safety	1	7

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

Unit No.	Unit Standard Title	Level	Credit
843	Provide Basic First Aid	1	3

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

Unit No.	Unit Standard Title	Level	Credit
900	Apply basic knowledge of engineering drawing in different contexts	2	6

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

Unit No.	Unit Standard Title	Level	Credit
1158	Apply basic entrepreneurship skills	1	5

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

Unit No.	Unit Standard Title	Level	Credit
890	Apply knowledge of pre-basic mathematics in different context	2	6

FIELD: Health, Science and Social Services
 Subfield: Engineering Science and Drawing
 Domain: Foundation Engineering Science and Drawing Skills

Unit No.	Unit Standard Title	Level	Credit
893	Apply knowledge of basic engineering science in different contexts	2	6

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 (Welding) (Level 3)

NQF level of qualification:	3
Total credits available:	84
Total credits required:	84

	Compulsory	Elective
level 2 credits:	20	-
level 3 credits:	64	-
minimum totals required	84	-

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; use hand tools 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 aluminum 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; weld mild steel using the manual arc welding process in horizontal, vertical up and overhead position; weld mild steel work piece using the shielded metal arc welding process in flat position.

They further have a good understanding of applying knowledge of basic mathematics in different context; apply knowledge of fundamental engineering

science in different contexts; applying fundamental knowledge of engineering drawing in different contexts; and 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 (Welding) Level 4.

2. regulations for the qualification

2.1 summary of qualification requirements

This qualification will be awarded to people who are credited with 84 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
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 aluminum 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
1743	Weld mild steel using the manual arc welding process in horizontal, vertical up and overhead position	2	4

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

1744	Weld mild steel work piece using the shielded metal arc welding process in flat position	2	8
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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 (Welding) (Level 4)

NQF Level of qualification:	4
Total credits available:	104
Total Credits required:	104

	Compulsory	Elective
level 3 credits:	33	-
level 4 credits	71	-
minimum totals required	104	-

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 (Welding). 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; weld thermoplastics with electrofusion equipment; 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; perform advanced manual arc welding on stainless steel in all positions; perform advanced tungsten inert gas welding on stainless steel in all positions; hard face surfaces as part of metal fabrication operations; weld stainless steel pipe in all positions using the tungsten gas arc welding process.

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; develop a business plan as part of business startup activities; and providing general First Aid.

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

2. regulations for the qualification

2.1 summary of qualification requirements

This qualification will be awarded to people who are credited with 104 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
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
1746	Weld thermoplastics with electrofusion equipment	4	5

FIELD: Manufacturing, Engineering and Technology
 Subfield: Manufacturing 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
254	Perform advanced manual arc welding on stainless steel in all positions	4	6

255	Perform advanced tungsten inert gas welding on stainless steel in all positions	4	6
256	Hard face surfaces as part of metal fabrication operations	4	4
1747	Weld stainless steel pipe in all positions using the tungsten gas arc welding process	4	12

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

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

This is the first version of this qualification.