

National Vocational Certificate in Electrical Engineering (Electronics) (Level 2)
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NQF Level of qualification:	2
Total credits available:	120
Total credits required:	120

	Compulsory	Elective
Level 1 credits available	56	-
Level 2 credits available	64	-
Minimum totals required	120	-

Registration date: 29 November 2018

Scheduled review date: 2023

Body responsible for the qualification: Namibia Training Authority through the Mining Quarrying, Construction, Electricity, Gas, Water Supply and Sanitation Industry Skills Committee.

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

1 PURPOSE

This qualification recognises people who have the competencies required for working in the field of electronics. It is awarded to people who have demonstrated the skills and knowledge required to apply health and safety rules and regulations in electronics workplace, plan and organise work in electronics work environment, use and maintain tools and instruments in electronics work, demonstrate introductory knowledge of circuit concepts and measurements for electronics, demonstrate and apply fundamental knowledge of analogue electronics circuits, carry out basic electrical circuit analysis, carry out soldering and de-soldering tasks Analyse basic Alternating Current (AC) and Direct Current (DC) electrical circuits, apply knowledge of combinational digital electronics circuits, apply knowledge of analogue electronics circuits analysis, apply knowledge of high frequency circuits and apply basic knowledge of programming skills.

They further have a good understanding of interact with others in a workplace environment; use workplace documents; apply knowledge of pre-basic mathematics, engineering science and engineering drawing in different context; provide basic first aid; demonstrate basic awareness of HIV and AIDS; demonstrate basic knowledge of workplace health and safety; apply basic entrepreneurship skills and apply fundamental computer literacy skills.

The entry requirement for this qualification is a Grade 12 certificate or equivalent qualification and the ability to demonstrate basic communication skills in the English language and numeracy.

This qualification leads vertically to the National Vocational Certificate in Electrical Engineering (Electronics) (Level 3).

2 REGULATIONS FOR THE QUALIFICATION

2.1 Summary of qualification requirements

This qualification will be awarded to people who are credited with a minimum of **120** credits and have met the requirements of 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

All the unit standards listed below are required.

FIELD: Manufacturing, Engineering and Technology
Subfield: Electrical Engineering
Domain: Electronics

Unit ID	Unit Standard Title	Level	Credits
2011	Apply health and safety rules and regulations in electronics workplace	1	2
2012	Plan and organise work in electronics work environment	1	2
2013	Use and maintain tools and instruments in electronics work	1	3
2014	Demonstrate introductory knowledge of circuit concepts and measurements for electronics	1	3
2015	Demonstrate and apply fundamental knowledge of analogue electronics circuits	1	7
2016	Carry out basic electrical circuit analysis	2	7
2017	Carry out soldering and de-soldering tasks	2	2
2018	Analyse basic Alternating Current (AC) and Direct Current (DC) electrical circuits	2	8
2019	Apply knowledge of combinational digital electronics circuits	2	8
2020	Apply knowledge of analogue electronics circuits analysis	2	10
2021	Apply knowledge of high frequency circuits	2	8
2022	Apply basic knowledge of programming skills	2	3

AND

FIELD: Health Sciences and Social Services
Subfield: Core Health
Domain: First Aid

Unit ID	Unit Standard Title	Level	Credits
843	Provide Basic First Aid	1	3

AND

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

Unit ID	Unit Standard Title	Level	Credits
1155	Demonstrate basic awareness of HIV and AIDS	1	6

AND

FIELD: Physical, Mathematical and Computer Sciences
Subfield: Information Communication Technology
Domain: Computing Fundamentals

Unit ID	Unit Standard Title	Level	Credits
1156	Apply fundamental computer literacy skills	1	8

AND

FIELD: Health Sciences and Social Services
Subfield: Preventive Health
Domain: Occupational Health and Safety

Unit ID	Unit Standard Title	Level	Credits
1157	Demonstrate basic knowledge of workplace health and safety	1	7

AND

FIELD: Communication Studies and Language
Subfield: Communication Skills
Domain: Foundation Communication Skills

Unit ID	Unit Standard Title	Level	Credits
1151	Interact with others in a workplace environment	1	5
1152	Use workplace documents	1	5

AND

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

Unit ID	Unit Standard Title	Level	Credits
1158	Apply basic entrepreneurship skills	1	5

AND

FIELD: Physical, Mathematical and Computer Sciences
Subfield: Numeracy
Domain: Foundation Numeracy Skills

Unit ID	Unit Standard Title	Level	Credits
890	Apply knowledge of pre-basic mathematics in different context	2	6

AND

FIELD: Manufacturing, Engineering and Technology
Subfield: Foundational Engineering Science and Engineering Drawing
Domain: Foundation Engineering Science and Drawing skills

Unit ID	Unit Standard Title	Level	Credits
893	Apply knowledge of basic engineering science in different contexts	2	6
900	Apply basic knowledge of engineering drawing in different contexts	2	6

3 CREDIT RECOGNITION AND TRANSFER ARRANGEMENTS

Credits for any version of a unit standard of 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 must meet the following special arrangements.

4.1.1 This qualification will be offered to trainees **either** including a period of 6 month 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 encourage 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
10 Rand Street
Komasdal
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.

National Vocational Certificate in Electrical Engineering (Electronics) (Level 3)
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NQF Level of qualification:	3
Total credits available:	120
Total credits required:	120

	Compulsory	Elective
Level 3 credits available	120	-
Minimum totals required	120	-

Registration date: 29 November 2018

Scheduled review date: 2023

Body responsible for the qualification: Namibia Training Authority through the Mining Quarrying, Construction, Electricity, Gas, Water Supply and Sanitation Industry Skills Committee.

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

1 PURPOSE

This qualification recognises people who have the competencies required for working in the field electronics. It is awarded to people who have demonstrated the skills and knowledge required to analyse advanced analogue electronics circuits; apply advanced methods of Alternating Current (AC) and Direct Current (DC) electrical circuits analysis; apply knowledge of sequential digital electronics circuits; apply knowledge of communication systems, install communication systems; operate electronics systems; install electronics systems; repair electronics systems and devices; produce a Printed Circuit Board; demonstrate and apply knowledge of power electronics.

They further have a good understanding of apply knowledge of basic mathematics in different context; apply knowledge of fundamental engineering science and engineering drawing in different contexts.

The entry requirement for this qualification is a National Vocational Certificate in Electrical Engineering (Electronics) (Level 2) or equivalent qualification and the ability to demonstrate basic communication skills in the English language and numeracy.

This qualification leads vertically to the National Vocational Certificate in Electrical Engineering (Electronics) (Level 4).

2 REGULATIONS FOR THE QUALIFICATION

2.1 Summary of qualification requirements

This qualification will be awarded to people who are credited with a minimum of **120** credits and have met the requirements of both the compulsory and elective 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

All the unit standards listed below are required.

FIELD: Manufacturing, Engineering and Technology
Subfield: Electrical Engineering
Domain: Electronics

Unit No.	Unit Standard Title	Level	Credits
2023	Analyse advanced analogue electronics circuits	3	8
2024	Apply advanced methods of Alternating Current (AC) and Direct Current (DC) electrical circuits analysis	3	10
2025	Apply knowledge of sequential digital electronics circuits	3	10
2026	Apply knowledge of communication systems	3	10
2027	Install communication systems	3	10
2028	Operate electronics systems	3	3
2029	Install electronics systems	3	15
2030	Repair electronics systems and devices	3	20
2031	Demonstrate and apply knowledge of power electronics	3	8
2032	Produce a Printed Circuit Board	3	8

AND

FIELD: Physical, Mathematical and Computer Sciences
Subfield: Numeracy
Domain: Foundation Numeracy Skills

Unit ID	Unit Standard Title	Level	Credits
891	Apply knowledge of basic mathematics in different context	3	6

AND

FIELD: Manufacturing, Engineering and Technology
Subfield: Foundational Engineering Science and engineering drawing
Domain: Foundation Engineering Science and Drawing skills

Unit ID	Unit Standard Title	Level	Credits
894	Apply knowledge of fundamental engineering science in different contexts	3	6
901	Apply fundamental knowledge of engineering drawing in different contexts	3	6

3 CREDIT RECOGNITION AND TRANSFER ARRANGEMENTS

Credits for any version of a unit standard of 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 must meet the following special arrangements.

4.1.1 This qualification will be offered to trainees **either** including a period of 6 month 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 encourage 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.

National Vocational Certificate in Electrical Engineering (Electronics) (Level 4)
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NQF Level of qualification: 4

Total credits available: 94

Total credits required: 94

	Compulsory	Elective
Level 3 credits available	17	-
Level 4 credits available	71	-
Level 5 credits available	6	-
Minimum totals required	94	-

Registration date: 29 November 2018

Scheduled review date: 2023

Body responsible for the qualification: Namibia Training Authority through the Mining Quarrying, Construction, Electricity, Gas, Water Supply and Sanitation Industry Skills Committee.

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

1 PURPOSE

This qualification recognises people who have the competencies required for working in the field of electronics. It is awarded to people who have demonstrated the skills and knowledge required to inspect, test, maintain and upgrade electronics systems, manage electronics projects, develop workplace standards, conduct training for personnel skills development, manage conflicts within the workplace.

They further have a good understanding of establishing a business as part of entrepreneurship operations, implement, control and monitor business operations, apply knowledge of intermediate mathematics in different context, apply advanced knowledge of engineering science and engineering drawing in different contexts.

The entry requirement for this qualification is a National Vocational Certificate in Electrical Engineering (Electronics) (Level 3) or equivalent qualification and the ability to demonstrate basic communication skills in the English language and numeracy.

2 REGULATIONS FOR THE QUALIFICATION

2.1 Summary of qualification requirements

This qualification will be awarded to people who are credited with a minimum of **94** credits and have met the requirements of both the compulsory and elective 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

All the unit standards listed below are required.

FIELD: Manufacturing, Engineering and Technology
Subfield: Electrical Engineering
Domain: Electronics

Unit No.	Unit Standard Title	Level	Credits
2033	Inspect and test electronics systems	4	8
2034	Maintain electronics systems	4	12
2035	Upgrade electronics systems	4	9
2036	Manage electronics projects	4	10
2037	Implement and test basic microcontroller based electronics applications	4	14
2038	Manage conflicts in the workplace	5	6

AND

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

Unit ID	Unit Standard Title	Level	Credits
733	Identify, create and select business opportunities	3	5
734	Develop a business plan as part of business start-up activities	3	12

AND

FIELD: Physical, Mathematical and Computer Sciences
Subfield: Numeracy
Domain: Foundation Numeracy Skills

Unit ID	Unit Standard Title	Level	Credits
892	Apply knowledge of intermediate mathematics in different context	4	6

AND

FIELD: Manufacturing, Engineering and Technology

Subfield: Foundational Engineering Science and engineering drawing

Domain: Foundational Engineering Science and Drawing Skills

Unit ID	Unit Standard Title	Level	Credits
896	Apply advanced knowledge of engineering science in different contexts	4	6
902	Apply knowledge of advanced engineering drawing in different contexts	4	6

3 CREDIT RECOGNITION AND TRANSFER ARRANGEMENTS

Credits for any version of a unit standard of 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 must meet the following special arrangements.

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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 encourage 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.