

**National Vocational Certificate in Electrical Engineering (Instrumentation and Control)  
(Level 3)**

**NQF Level of qualification: 3**

**Total credits available: 87**

**Total credits required: 87**

	<b>Compulsory</b>	<b>Elective</b>
<b>Level 2 credits available</b>	<b>8</b>	-
<b>Level 3 credits available</b>	<b>79</b>	-
<b>Minimum totals required</b>	<b>87</b>	-

**Registration date:** 13 June 2019

**Scheduled review date:** 2024

**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 Instrumentation and Control.

It is awarded to people who have demonstrated the skills and knowledge required to interpret and prepare instrumentation and electrical diagrams; install Instrumentation and Control equipment; maintain Instrumentation and Control equipment; troubleshoot Instrumentation and Control equipment; use and maintain specialised instrumentation and control measuring equipment; apply knowledge of speed (Velocity) measurement; demonstrate knowledge of process control system, apply knowledge of mass/weight measurement; maintain and service mass/ weight devices, demonstrate knowledge of industrial communication, Supervisory Control and Data Acquisition (SCADA); apply knowledge of combinational and sequential digital electronic circuits.

They further have a good understanding of 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 (Instrumentation and Control) (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 (Instrumentation and Control) (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 **87** 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 (WIL) for Technical and Vocational Education and Training (TVET) Sector.

### 2.2 Detailed qualification requirements

#### Compulsory

*All the unit standards listed below are required.*

**FIELD:** Manufacturing, Engineering and Technology

**Subfield:** Electrical Engineering

**Domain:** Instrumentation and Control

Unit No.	Unit Standard Title	Level	Credit
2049	Interpret and prepare instrumentation and electrical diagrams	3	7
2050	Install Instrumentation and Control equipment	3	5
2051	Maintain Instrumentation and Control equipment	3	4
2052	Apply knowledge of speed (Velocity) measurement	3	2
2053	Demonstrate knowledge of industrial communication	3	12
2054	Demonstrate Knowledge of Supervisory Control and Data Acquisition (SCADA)	3	3
2055	Use and maintain specialised Instrumentation and Control measuring equipment	3	3
2056	Demonstrate knowledge of process control system	3	4
2057	Apply knowledge of Mass and Weight measurement	3	3
2058	Maintain and service Mas and Weight devices	3	3
2059	Troubleshoot Instrumentation and Control equipment	3	5

#### AND

**FIELD:** Manufacturing, Engineering and Technology

**Subfield:** Electrical Engineering

**Domain:** Electronics

2019	Apply knowledge of combinational digital electronic circuits	2	8
2025	Apply knowledge of sequential digital electronic circuits	3	10

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 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  
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.