

Domain

ELECTRONICS**Title: Use and Maintain Tools and Instruments
in Electronics work**

Level: 1

Credits: 7

Purpose

This unit standard specifies the competencies required to use and maintain tools and Instruments in Electronics work. It includes identifying, selecting and using tools and instruments, calibrating instruments, maintaining tools and instruments. This unit standard is intended for those who work in electronic industry

Special Notes

1. Entry information

Prerequisite
 - *Unit E01 - Apply health and safety rules and regulations in electronics workplace*
 - *Unit E02 - Plan and organise work in electronic work environment*
2. Assessment evidence may be collected from a real or a simulated workplace in which electronics operations are carried out.
3. To demonstrate competence, at a minimum, requires evidence of the ability to use and maintain different tools and instruments when performing electronic tasks. In performing these tasks ensure identification of requirements and finishing of the tasks, selection and use of appropriate processes, tools and equipment and completing all work to specification.
4. Glossary of terms:
 - IEC 60617- **International Electro-technical Commission**
 - IEEE- Institute of Electrical and Electronics Engineers.
5. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' and company guidelines, instructions, and reasonable flat rate time.
6. Performance of all elements in this unit standard must comply with industry standards.
7. Regulations and legislation relevant to this unit standard include the following:
 - Labour Act, No. 11, 2007
 - Occupational Health and Safety Regulations No. 18, 1997
 - Regulations relating to the Health and Safety of employees at work, 1997

Quality Assurance Requirements

This unit standard and others within this subfield may be awarded by institutions which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority and the Namibia Training Authority on www.nta.com.na.

Elements and Performance Criteria

Element 1: Identify, select and use tools and instruments

Range

Electronics instruments include but not limited to functional generators, oscilloscopes, spectrum analysers, power supplies and multi-meters.

Tools include but are not limited to, screwdrivers, pliers, soldering irons, solder suckers, heat guns, drill machines, crimping tools and cable knives.

Performance Criteria

- 1.1 Tools and Instruments for electronics works are identified and selected in line with job requirements.
- 1.2 Specific safety requirements for particular tools, instruments and tasks are identified.
- 1.3 Instrument and tools' manual are interpreted.
- 1.4 Personal protective equipment required for the task is worn in accordance with safety and workplace requirements.
- 1.5 Precautions in the use of tools and instruments are demonstrated with respect to personnel safety and damage to tools and instrument according to manufacturers' recommendations and regulatory requirements as well as organisational policies and procedures.
- 1.6 Tools and instruments are used safely and effectively according to manufacturers' recommendations and workplace procedures.

Element 2: Calibrate Instruments

Range

Instruments to be calibrated include function generators, oscilloscopes, spectrum analyser, power supplies, multi-meter.

Performance Criteria

- 2.1 Requirement for instruments' calibration is identified in accordance with manufacturer's guidelines, organisational policies and instrument's performance.
- 2.2 Calibration manual for the instrument is interpreted.
- 2.3 Instrument's performance are benchmarked with known standards to determine deviation from expected performance.

- 2.4 Instruments are adjusted based on performance deviation and in-line with manufacturer`s guideline or calibration manuals.
- 2.5 Calibration results are documented according to organisational policies and procedures.

Element 3: Maintain tools and instruments

Range:

Maintenance of tools and instruments includes but is not limited to cleaning, blowing, dusting, polishing and minor repairs.

Performance Criteria

- 3.1 Damaged or worn out tools and instruments are identified and relevant personnel are notified in line with work place procedures
- 3.2 Cleaning principles are applied according to company cleaning standard and safety procedures.
- 3.3 Tools and instruments are packed and stored according to company policies and manufacturer`s guidelines.
- 3.4 Workplace is cleaned in-line with occupational health and safety procedures.

Registration Data

Subfield:	Electrical Engineering
Date first registered:	
Date this version registered:	
Anticipated review:	
Body responsible for review:	Namibia Training Authority