

Domain

Control and Instrumentation

Title:

Apply knowledge of Analytical instruments

Level:4

Credits:5

Purpose

This unit standard specifies the competencies required to apply knowledge of Analytical instruments. It includes demonstrate fundamental knowledge of analytical instrument, use and maintain analytical instrument.

Special Notes

1. Entry information:

Prerequisite

- *Unit 1157 - Demonstrate basic knowledge of workplace health and safety*
- *Unit I&C02 - Plan and organise work in instrumentation work environment*

2. Assessment evidence may be collected from a real workplace or an appropriate simulated realistic environment in which Instrument and Control operations are carried out.

3. To demonstrate competence, minimum evidence of selection, installation and configuration at least two instruments,

4. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' guidelines and instructions

5. Glossary of terms:

- *Specifications'* refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements.
- OEM – Original Equipment Manufacturer
- IEC 60994 – International Electro Technical Commission (standard for Field measurement of vibration)

6. Analytical instrument include but not limited to pH, Oxidation Reduction Potential (ORP), Dissolved Oxygen (DO), Turbidity, Optical, Vibration, Gas and Blood analysers,

7. Regulations and legislation relevant to this unit standard include the following:

- Labour Act 2007, No. 11, 2007
- IEEE 518
- IEC 60994
- Regulations relating to the health & safety of employees at work under Schedule 1 (2) of the Labour Act No.11 of 2007
- And all subsequent amendments.

8. Performance of all elements in this unit standard must comply with industry standards.

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. All approved unit standards, qualifications and national assessment arrangements are available on the Namibia Training Authority website www.nta.com.na.

Elements and Performance Criteria

Element 1: Demonstrate fundamental knowledge of analytical instrument

Demonstrate knowledge of Analytical instrument may include but is not limited to defining the types instrument, underlining principles of operation and their SI units.

Range

Performance Criteria

- 1.1 Types of analytical instruments are identified.
- 1.2 Principles of operations of analytical instrument are emphasised.
- 1.3 The use of analytical instrument SI units are recognized and applied
- 1.4 Various analytical instrument techniques are explained.
- 1.5 Advantages and disadvantage of the various analytical instrument is underlined.

Element 2: use and maintain analytical instruments

Range

Maintenance of analytical instruments' applications may include but is not limited to selecting, installing, maintaining and measuring as per application datasheets and OEM specifications of the analytical measuring device/ devices.

Performance Criteria

- 2.1 Analytical devices are selected as per application data sheet.
- 2.2 Analytical devices are installed as illustrated in the application datasheet and OEM specifications.
- 2.3 Measuring of analytical process variables are conducted as per application datasheet, OEM specification and process control requirements where applicable.
- 2.4 Maintenance strategies are identified and applied as per application datasheets and OEM Specifications.

Registration Data

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