

Domain**Instrumentation****Title:****Interpret and Prepare instrumentation
and electrical diagrams****Level: 3****Credits: 7****Purpose**

This unit standard specifies the competencies required to interpret and prepare instrumentation and electrical diagrams. It includes read instrumentation and electrical diagrams, prepare instrumentation and electrical diagrams. This unit standard is intended for those who work in industry.

Special Notes

1. Entry information:

Prerequisite

- none
2. Assessment evidence may be collected from a real or an appropriate simulated workplace in which Instrument and Control operations are carried out.
3. This unit standard may be assessed in any context of operation and may be assessed in conjunction with other relevant technical unit standards selected from this domain
4. To demonstrate competence, minimum evidence of read and interpret building drawings for two different tasks.
5. All inspection, operation and maintenance procedures associated with the use of tools and equipment shall comply with manufacturers' guidelines and instructions
4. Glossary of terms:
- *specifications'* refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements
 - ISO – international Standards Organisation
 - ISA – International society of Automation
5. Regulations and legislation relevant to this unit standard include the following:
- Labour Act 2007, No. 11, 2007
 - ISO 15519
 - ISA S5.1
 - IEEE 315
 - 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.
6. 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: Read instrumentation and electrical diagrams

Range

Reading and Interpreting of technical drawings may include but is not limited to identifying different types of lines on engineering drawings, identifying different types drawing symbols, state the meaning of all abbreviations and drawing symbols on technical drawings, read and interpret a given technical and relevant ISO standards.

Performance criteria

- 1.1 Diagrams are identified and interpreted to explain system operation.
- 1.2 System functions and items included in a diagram are explained in accordance with industry requirements.
- 1.3 Specific standards and use of symbols are explained.
- 1.4 The various types of instrumentation and electrical layouts, plans, drawings and schedules are explained.
- 1.5 Different types of drawing symbols on engineering drawings are identified.
- 1.6 All abbreviations and drawing symbols on technical drawings are stated and explained.
- 1.7 Relevant ISO and ISA standards are recognized and explained.

Element 2: Prepare instrumentation and electrical diagrams.

Performance criteria

- 2.1 Diagrams relating to the process operation are drawn using standard symbols and formats.
- 2.2 Diagrams with layouts that aid interpretation of measurement and control systems are drawn.
- 2.3 Drawings, schematics and other documentation modified and updated according to relevant industry and company standards

Registration Data

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