



**ADVANCED DIPLOMA OF ELECTRICAL AND INSTRUMENTATION (E&I)  
ENGINEERING FOR OIL AND GAS FACILITIES**

**MODULE DETAILS**

**MODULE 14: General Instrumentation Standards in Oil and Gas and Best Practice in Process, E&I Drawings and Documentation**

Nominal duration: 3 weeks (24 hours total time commitment)

This time commitment includes the preparation reading, attendance at each webinar (1 hour plus 15-30 minutes for discussion), and the time necessary to complete the assignments and further study.

**MODULE PURPOSE**

The module serves as an introduction to the local, national and international standards used in the oil and gas field. This module is designed for engineers and technicians from a wide range of abilities and backgrounds and will provide an excellent introduction to mastering plant documentation and diagrams, covers the flow of documentation from design through manufacture to maintenance and operations. The module looks at the applications of each diagram type, detailing where and when the document should be used. During the life span of any plant, a multitude of different vendors will supply plant modifications and equipment as the plant is continuously enhanced. The quality of the documentation produced will vary enormously with each new supplier. Delegates will be given the skills to apply a standardized internationally acceptable set of standards to their plant documentation.

**PRE-REQUISITE  
MODULES/UNIT(S)**

Module 2: Fundamentals of Instrumentation, Measurement and Process Control Engineering

**ASSESSMENT STRATEGY**

To evaluate the achievement of the learning outcomes; written assignments, group projects and practical exercises are set.

**SUMMARY OF LEARNING  
OUTCOMES**

1. Examine and discuss the basics of drawings, standards and components applicable to the O&G industry [14.1]
2. Interpret plant-related diagrams and documentation [14.2]
3. Interpret drawings related to pneumatics, hydraulics, ladder logic and electro-pneumatics [14.3]



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**Learning Outcome 1**                      **Examine and discuss the basics of drawings, standards and components applicable to the O &G industry**                      **[14.1]**

- Assessment Criteria**
1. Describe the role of plant documentation, standards and specifications                      [14.1.1]
  2. Discuss the various drawing types and applicable standards                      [14.1.2]
  3. Describe the basic attributes of electronic components shown on drawings                      [14.1.3]

**Learning Outcome 2**                      **Interpret plant-related diagrams and documentation**                      **[14.2]**

- Assessment Criteria**
1. Interpret plant-related documents such as:
    - (a) Piping and Instrument Diagrams (P&ID)                      [14.2.1]
    - (b) Instrumentation documentation                      [14.2.2]
    - (c) Electrical documentation                      [14.2.3]

**Learning Outcome 3**                      **Interpret drawings related to pneumatics, hydraulics, ladder logic and electro-pneumatics**                      **[14.3]**

- Assessment Criteria**
1. Interpret drawings related to pneumatics and hydraulics                      [14.3.1]
  2. Interpret ladder logic for PLCs                      [14.3.2]
  3. Interpret electro-pneumatic circuits                      [14.3.3]
  4. Recognize and use common instrumentation-related acronyms                      [14.3.4]

**Delivery Mode**

A combination of asynchronous and synchronous e-learning delivery comprising a judicious mix of interactive online web conferencing, simulation (virtual labs) software, remote online labs, online videos, Power Points, notes, reading and study materials (in pdf, html and word format) accessed through the Moodle Learning Management System (LMS).