

1. Module details**Module name****Metering Installations****Module duration**

It is expected that students with the appropriate entry knowledge and skills will successfully complete this module in 36 - 40 hours.

Module code

NUE209

Discipline code

0703130

2. Module purpose

This module is designed to provide knowledge and skills for installing metering and control equipment by employees of the electrical supply industry. This module outlines the types of meters and metering systems used and the procedures for installing and removing metering, control equipment and associated accessories. Meter testing, reading, sealing, commissioning and record keeping are covered to enterprise requirements and policies.

3. Prerequisites

NE162 Electrical Principles 3.

4. Relationship to competency standards

This module addresses Unit 3.11 of the E.S.I. National Competency Standards for Overhead Line Work and Cable Jointing.

75. Content**Metering and load control**

metered quantities
 accuracy classes for metering systems
 kilowatt hour meters - single and polyphase
 demand meter
 metering circuits
 electronic metering systems summators
 recording meters
 tariffs
 CT metering (mention only)

Installation of meters and accessories

enterprise requirements and policies
 direct connection and plug in methods
 associated equipment and accessories (meter boards, service fuses, inks, contactors, time switch, audio frequency injection relay)
 safety testing, polarity testing
 meter removal
 meter reading
 sealing and commissioning
 enterprise records

6. Assessment strategy

Assessment methods

Short answer questions (written, oral or graphic or computer based).
 Suitable practical exercises which assess the skills required of each learning outcome.

Conditions of assessment

Theory room for written tests together with practical field observation.

7. Learning outcome details

Learning outcome 1

Plan for the installation and maintenance of energy meters and associated equipment.

Assessment criteria

- 1.1 Obtain and analyse requests for installation and/or maintenance of meters.
- 1.2 Identify the appropriate safe working practices and procedures related to the installation and/or maintenance of meters.
- 1.3 Obtain and interpret appropriate wiring diagrams and text in preparation for the installation and/or maintenance of meters.
- 1.4 Identify the resources required, including personnel, plant, equipment and tools to ensure the task can be completed.

Learning outcome 2

Prepare for and install energy meters and associated equipment.

Assessment criteria

- 2.1 Pre-assemble panels/boards for a domestic installation.
- 2.2 Install and commission domestic energy meter/s and associated equipment.
- 2.3 Pre-assemble panels/boards for a commercial installation.
- 2.4 Install and commission commercial energy meter/s and associated equipment.
- 2.5 Complete enterprise records.

8. Delivery of the module

Delivery strategy

Delivery strategies must be suitable for both theoretical and/or practical learning and module purpose. It is recommended that learning and assessment be facilitated in a holistic manner which may require a learning sequence other than indicated in the body of this module descriptor.

Resource requirements

Relevant Australian standards
Enterprise work manuals and standing instructions, diagrams and layouts (including requests for installation and/or maintenance of meters)
Relevant manufacturers' meter, equipment/component/instrument manuals
Appropriate wiring diagrams and text
Examples of meters and associated equipment
Appropriate panels/boards
Appropriate installation or simulated location.
Appropriate tools, test instruments and equipment.

Occupational health and safety requirements

Students should be made aware of Occupational Health and Safety issues in all situations and be expected to demonstrate safe working practices at all times. Electrical safety must be emphasised.