

1. Module details**Module name****Underground Cable Installation****Module duration**

It is expected that students with the appropriate entry knowledge and skills will successfully complete this module in 18 - 20 hours.

Module code

NUE216

Discipline code

0703130

2. Module purpose

This module is designed to supply the knowledge and skills required by electricity supply industry workers to install underground cables.

The experience gained is in the correct procedures and practices involved in preparing for and carrying out underground cable installation. Interpreting technical drawings and specifications for trenching and excavating to install ducts with draw wires, lay or pull in cables. Seal cable ends and reinstating trenches and excavations.

All procedures and practices comply in accordance with electricity supply industry standards, Supply Authority regulations, relevant Australian standards and OH&S regulations.

3. Prerequisites

NUE207 Powerline Safety Practices.

4. Relationship to competency standards

This module addresses Units 2.12, 2.18 and 3.7 of the E.S.I. National Competency Standards for Overhead Line Work and Cable Jointing.

5. Content**Safety specific to laying cables****Trench excavation**

use of equipment
checking for other services
shoring up
checking for gas

Conduit installation**Cable laying/pulling in**

drum jacks
rollers
draw wires/ropes
stockings
winches
capstans
cable trailers

6. Assessment strategy

Assessment methods

Cleated and racked cables

Cable sealing

Backfill and reinstatement

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

Prepare and reinstate trenches and excavations.

Assessment criteria

- 1.1 Identify and interpret all technical drawings required to prepare for the excavation of trenches.
- 1.2 Identify trench safety regulations.
- 1.3 Excavation equipment is used and maintained appropriately.
- 1.4 Explain gas detection procedures.
- 1.5 Trench/excavation is prepared and reinstated as per specifications.
- 1.6

Learning outcome 2

Lay conduits and underground cables.

Assessment criteria

- 2.1 Identify and interpret all technical drawings required to lay conduits and underground cables.
- 2.2 Identify methods of installing conduits and underground cables, including:
 - direct buried
 - ducts
 - cleated and racked.
- 2.3 Identify the resources required, including personnel, plant, equipment, tools and transport required for the installation of conduits and underground cables.

	<p>2.4 Install conduits and draw wires to the required specifications.</p> <p>2.5 Install underground cables and seal cable ends as per specifications.</p>
Learning outcome 3	Identify requirements and demonstrate safe use of Liquefied Petroleum Gas (LPG) in a cable jointing environment.
Assessment criteria	<p>3.1 Identify general hazards and safety requirements associated with the use of LPG equipment in a cable jointing environment.</p> <p>3.2 List the requirement of gas bottle testing.</p> <p>3.3 Demonstrate safe use of LPG equipment in a cable jointing environment.</p>
8. Delivery of the module	
Delivery strategy	<p>Delivery strategies must be suitable for both theoretical and/or practical learning and module purpose.</p> <p>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.</p>
Resource requirements	<p>Enterprise construction manuals</p> <p>Relevant Australian standards</p> <p>Enterprise work manuals and standing instructions</p> <p>Relevant manufacturers' equipment manuals</p>
Occupational health and safety requirements	<p>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.</p>