

1. Module details

Module name

Underground Cable Testing, Fault Finding and Diagnosis

Module duration

It is expected that students with the appropriate entry knowledge and skills will successfully complete this module in 54 - 60 hours.

Module code

NUE318

Discipline code

0703130

2. Module purpose

This module is designed to supply the knowledge and skills required by electricity supply industry workers to locate, test and diagnose faults in underground cables.

The experience gained is in the correct procedures and practices involved in preparing for and carrying out testing, fault finding and diagnosis in underground cables.

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

3. Prerequisites

NUE207 Powerline Safety Practices

4. Relationship to competency standards

This module addresses Unit UETTDR0042A Locate faults in underground power cables in the ESI Transmission and Distribution Training Package.

5. Content

Types of cable faults

LV and HV cable incidents

Fault finding methods

sectionalising

thumping

time domain reflectometry (TDR)

Requirements for testing equipment and instrumentation

Re-energising services after failure/damage

Reporting faults/damage

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	Prepare for testing and finding faults in underground cables.
Assessment criteria	<p>1.1 Identify and describe the types of underground cable faults.</p> <p>1.2 Identify and interpret all technical drawings required to find faults in underground cables.</p> <p>1.3 Identify and describe the methods used to identify faults in underground cables.</p> <p>1.4 Identify the equipment and resources required to identify faults in underground cables.</p>
Learning outcome 2	Locate faults in underground cables.
Assessment criteria	<p>2.1 Identify and describe the approaches used to locate different faults.</p> <p>2.2 Position tools and equipment for fault finding and testing.</p> <p>2.3 Test instruments for cable test.</p> <p>2.4 Carry out testing and fault finding procedure.</p> <p>2.5 Identify and describe the requirements for testing equipment and instrumentation.</p>
Learning outcome 3	Report the results of underground cable testing and fault finding.
Assessment criteria	<p>3.1 Test cable after fault rectification.</p> <p>3.2 Describe the requirements for re-energising services after failure or damage.</p> <p>3.3 Describe the requirements for reporting underground cable faults and tests.</p>

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

Enterprise construction manuals
Relevant Australian standards
Enterprise work manuals and standing instructions
Relevant manufacturers' equipment manuals
WorkCover NSW, WorkCover Code of Practice - Low Voltage Electrical Work Local electricity distributor and authority regulations, or State/Territory equivalent

Where this module is used in an approved Traineeship or Apprenticeship program learners should be advised to obtain, where available, respective EE-Oz Training Standards¹ **User Guides** (*these outline in detail what training and work performance the Learner is required to undertake for the program*).

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.

¹ EE-Oz Training Standards is an ANTA declared Industry Skills Council for the ElectroComms and EnergyUtilities Industry