

## 1. Module details

**Module name**

**Electrical Safe Working Practice**

**Suggested structured learning time**

A learner possessing the prerequisite skills and knowledge should achieve the module purpose in 18 to 20 hours.

**Module code**

NUE044

**Discipline code**

0703110

## 2. Module purpose

This module provides knowledge and skills in further developing practices for working safely on electrical installations.

Students will gain an understanding of risk management principles and skills in applying control measures for dealing with non-electrical hazards and low-voltage, extra-low voltage and high-current hazards. The hazards of high-voltage and how they are to be dealt with are also covered.

## 3. Learning pathway

**Intended use in the structured learning program**

This module is intended to supplement exposure to electrical installation work. In particular it applies to incorporating safety practices as part of the normal way of working.

Therefore before undertaking this module a student should have a clear understanding of occupational health and safety requirements and how the fundamental principles for safety apply.

**Recommended prerequisites**

For the most effective learning this module should be undertaken only after a module in general Occupational Health and Safety has been completed.

## 4. Relationship to

This module provides part of the underpinning knowledge and skills in the 'Evidence Guide' of specific units of competency in the National Electrotechnology Training Package and provides similar support, where mapped, to equivalent units in the National Metals and Engineering Competency Standards. For details refer to the module to unit maps, available from EEQSBA.

This module supports the development of essential capabilities required for electrical licensing.

**5. Content**

1. Risk management
  - principles
  - documentation
2. Non-electrical hazards
  - identification
  - control measures
3. Electrical hazards
  - identification
  - extra low voltage
  - low voltage
  - high currents
  - control methods
4. High voltage hazards
  - identification
  - high voltage
  - touch & step voltage
  - control
5. Testing equipment
  - characteristics
  - safe use
  - care

**6. Assessment strategy**

**Assessment methods**

Assessment should be progressive reflecting a holistic approach to ensure the module purpose is met. To assist in ensuring validity, reliability and fairness assessment instruments should include practical exercises, assignments and written tests consisting of a number of item types, such as multiple choice, short answer and problem solving.

**Conditions of assessment**

Normally learning and assessment will take place in a formal learning environment.

**7. Learning outcome**

**Learning outcome 1**

Demonstrate an understanding of the principles of risk management and assessment of risk.

<b>Assessment criteria</b>	1.1 Describe the principles of risk management and state the purpose of each. 1.2 Conduct a risk assessment on a given work environment documenting and assessing the risks identified.
<b>Learning outcome 2</b>	Demonstrate knowledge and skills in dealing with non-electrical hazards encountered in electrical work.
<b>Assessment criteria</b>	2.1 Identify typical non-electrical hazards in the workplace. 2.2 Describe control measures for dealing with hazards identified in 2.1.
<b>Learning outcome 3</b>	Demonstrate knowledge and skills for dealing with hazards associated with low-voltage, extra-low voltage and high-currents.
<b>Assessment criteria</b>	3.1 Identify the parts of an electrical system and equipment that operate at low-voltage and extra-low voltage. 3.2 Identify the parts of an electrical system and equipment where high-currents are available. 3.3 Describe the control measures.
<b>Learning outcome 4</b>	Demonstrate an understanding of the risks and control measures associated with high-voltage.
<b>Assessment criteria</b>	4.1 Identify the parts of an electrical system and equipment that operate at high-voltage. 4.2 Explain the terms 'touch voltage', 'step voltage', 'induced voltage' and 'creepage' as they relate to the hazards of high-voltage. 4.3 Describe the control measures used for dealing with the hazards of high-voltage.
<b>Learning outcome 5</b>	Demonstrate knowledge and skills in relation to safety, selection, use, maintenance and care of test equipment.
<b>Assessment criteria</b>	5.1 Describe the safety characteristics of electrical testing devices. 5.2 Demonstrate the safe use of electrical testing device. 5.3 Describe the safety checks and storage methods for maintaining the safety of testing devices.

## 8. Delivery of the

### Delivery strategy

Delivery strategies must be suitable for learning both theoretical and practical aspects described in the module purpose. It is considered that the most effective method to achieve this is by integration of theory and practice where students learn by experimentation, research and reports. It is recommended that learning and assessment be facilitated in a holistic manner that may require a learning outcome sequence other than that indicated in the module.

### Resource requirements

Resources should be sufficient for students to carry out exercises on an individual basis.

Useful references include:

Jenneson, J. R. 1996, *Electrical Principles for Electrical Trades*, 4Ed., McGraw Hill, Sydney

Pethebridge, K., and Neeson, I., 2001, *Electrical Wiring Practice*, 6 Ed, Vol.1& 2., McGraw Hill, Sydney.

Standards Australia, Standards New Zealand

*AS/NZS 3000:2000 Wiring rules*

*AS/NZS 3008.1: 1998 Electrical installations — Selection of cables*

*HB300 Electrical installations— A guide to using the wiring rules*

*AS/NZS 4836 Safe working practice on low-voltage electrical installations*

*AS/NZS 3017 Electrical Installations – Testing guidelines*

Local electricity distributor and authority regulations

Where this module is used in an approved Traineeship or Apprenticeship program learners should be advised to obtain, where available, respective EEQSBA<sup>1</sup> **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

A safe and healthy environment will be provided for students and teachers. Safety procedures for the particular learning facilities shall be followed as part of the learning / teaching activity and assessment.

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<sup>1</sup> EEQSBA - ElectroComms and EnergyUtilities Qualifications Standards Body of Australia Ltd