

**1. Module details**

**Module name**

**Install and Maintain Public Lighting**

**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**

NUE321

**Discipline code**

0703130

**2. Module purpose**

This module is designed to supply the knowledge and skills required by electricity supply industry workers to install and maintain public lighting. Students will learn the basic concepts of illumination, to identify lamps and luminaires and special requirements for public lighting as well as locating and repairing faults.

**3. Prerequisites**

NUE207 Powerline Safety Practices.

**4. Relationship to competency standards**

This module addresses Unit UETTDRIS13A Install and maintain public lighting systems.

**5. Content**

**Illumination principles**  
behaviour of light

**Relevant standards**

**Lighting calculations**

**Public lighting requirements**

lighting concepts  
light sources  
types of lamps  
luminaires and mounting equipment  
special lighting situations

**Connection and testing of public lighting**

**Maintenance of public lighting systems**

test equipment  
fault diagnosis  
replacement of lamps/luminaires  
cleaning reflectors and refractors

## 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

#### **Demonstrate basic concepts of illumination principles.**

### Assessment criteria

- 1.1 Explain the effect of frequency and wavelength in electromagnetic radiation.
- 1.2 Describe the properties of visible light.
- 1.3 Explain the principles of colour.
- 1.4 Explain the behaviour of light.
- 1.5 Use lighting measurements to perform lighting calculations.
- 1.6 Identify factors which affect illumination
- 1.7 Identify the requirements for special purpose lighting.

### Learning outcome 2

#### **Identify the purpose and requirements of public lighting.**

### Assessment criteria

- 2.1 Identify and interpret public lighting categories and requirements.
- 2.2 Identify the issues to be considered for special applications of public lighting.
- 2.3 Identify the characteristics and uses of lamp types:
  - Incandescent lamp
  - Tungsten halogen lamp
  - Gas discharges lamp
  - Tubular fluorescent lamp
  - Mercury vapour lamp
  - Low pressure sodium vapour lamp
  - High pressure sodium vapour lamp.
- 2.4 Identify the factors to be considered when determining the suitable source of light.

**Learning outcome 3**

**Assessment criteria**

2.5 Identify styles of luminaires and mounting equipment.

2.6 Describe the sources of power for public lighting and switching methods.

**Install Public lighting.**

3.1 Describe clearances required for lighting equipment.

3.2 Describe the factors to be considered when mounting Public lighting.

3.3 Identify and interpret work plans or construction drawings for public lighting installation.

3.4 Follow workplace procedures for the installation of Public lighting.

**Learning outcome 4**

**Assessment criteria**

**Connect and test Public lighting.**

4.1 Install and connect control points to energised overhead or underground LV circuit.

4.2 Test and commission public lighting system and associated earthing.

4.3 Identify and interpret work plans or construction drawings for public lighting installation.

4.4 Follow workplace procedures for the installation of public lighting.

**Learning outcome 5**

**Assessment criteria**

**Maintain public lighting.**

5.1 Identify the factors to be considered when cleaning reflectors and refractors.

5.2 Identify test equipment to diagnose faults in public lighting systems.

5.3 Identify common causes of faults in public lighting systems.

5.4 Describe the activities to be undertaken when replacing lamps or luminaires.

5.5 Describe the reporting requirements for maintenance and repair of Public lighting systems..

**8. Delivery of the module**

<b>Delivery strategy</b>	<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>
<b>Resource requirements</b>	<p>Enterprise construction manuals Relevant Australian standards Enterprise work manuals and standing instructions Relevant manufacturers' equipment manuals Relevant equipment, tools, and materials/components</p> <p><i>WorkCover NSW, WorkCover Code of Practice - Low Voltage Electrical Work Local electricity distributor and authority regulations, or State/Territory equivalent</i></p> <p>Where this module is used in an approved Traineeship or Apprenticeship program learners should be advised to obtain, where available, respective EE-Oz Training Standards<sup>1</sup> <b>User Guides</b> (these outline in detail what training and work performance the Learner is required to undertake for the program).</p>
<b>Occupational health and safety requirements</b>	<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>

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