



Australian Government

UEEEL0035 Design effective and efficient lighting for public, open and sports areas

Release: 1

UEEEL0035 Design effective and efficient lighting for public, open and sports areas

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to design effective and efficient lighting for public, open and sports areas.

It includes designing lighting for public, open areas, and indoor and outdoor sporting facilities and/or urban parks. It also includes adhering to compliance standards, energy management, lighting control and available lighting products appropriate to the design; and documenting completed design for approval

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

UEEEL0063 Provide photometric data for illumination system design

UEEEL0070 Select effective and efficient light sources and luminaries for given locations and designs

Competency Field

Electrical

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to design lighting for public, open

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1.1 Work health and safety (WHS)/occupational health and safety (OHS) processes and workplace procedures for a

and sports areas	given work area are identified, obtained and applied
	1.2 Scope of the lighting requirement is identified from design brief
	1.3 Safety and relevant conditions to the lighting design are identified, obtained and applied in accordance with relevant industry standards
	1.4 Design development work is planned in consultation with relevant person/s involved in accordance with scheduled timelines
2 Develop lighting design	2.1 Relevant performance standards, compliance methods and lighting equipment is applied to lighting design in accordance with relevant industry standards
	2.2 Alternative lighting designs are reviewed in accordance with the design brief
	2.3 Safety, functionality, maintenance and budgetary considerations are incorporated in lighting design
	2.4 Lighting design draft is checked in accordance with design brief and relevant industry standards
	2.5 Lighting design is documented for submission to relevant person/s for acceptance and approval
	2.6 Unplanned situations are dealt with in accordance with workplace procedure
3 Obtain approval for lighting design	3.1 Lighting design is documented and presented to client representative and/or relevant person/s
	3.2 Requests for alterations to the design are negotiated with relevant person/s in accordance with workplace procedures
	3.3 Final design is documented and approval obtained from relevant person/s
	3.4 Quality of work is monitored in accordance with workplace procedures and relevant industry standards

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

Designing lighting for public and open areas must include at least two of the following:

- flood lighting of tennis courts
- flood lighting of netball or basketball courts
- flood lighting of football grounds
- lighting of squash courts
- lighting of indoor or outdoor bowling greens
- swimming pool lighting
- sporting spectator lighting
- other sporting applications
- stair lighting/passageway lighting
- park lighting
- mall lighting
- car park lighting

Unit Mapping Information

This unit replaces and is equivalent to UEENEEG187A Design effective and efficient lighting for public, open and sports areas.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEEEL0035 Design effective and efficient lighting for public, open and sports areas

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- determining the extent and nature of the lighting requirements from a design brief
- identifying and understanding safety and other requirements to which the lighting design shall comply
- planning to meet scheduled timelines
- applying appropriate knowledge of lighting performance compliance and lighting equipment in designing the lighting
- considering alternative arrangements for the lighting design, including safety, functional, maintenance and budgetary factors in the lighting design
- documenting and presenting the lighting design
- responding appropriately to requests to alter the design
- documenting and obtaining approval of the lighting design
- dealing appropriately with unplanned events
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including using risk control measures
- developing lighting design
- identifying and applying safety and relevant conditions in accordance with relevant industry standards
- monitoring quality of work
- preparing to design lighting for public, open and sports areas.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- open area and sports lighting design for outdoor and sports application lighting, including:
 - reasons for quality lighting in sport
 - key terms in open area and sports lighting encompassing:

- quantity of light required
- horizontal luminance
- vertical illuminance
- illuminance uniformity
- uniformity gradient
- modelling and shadows
- colour rendering
- colour temperature
- glare
- emergency escape lighting
- switching mode
- emergency (continuity) TV lighting
- obtrusive light
- the sports lighting design process encompassing:
 - project definition
 - lighting study
 - questions for indoor and outdoor venues
 - lamp selection
 - luminaire selection
 - arrangement of luminaires
 - cost of ownership
 - installation
 - aiming, measuring and commissioning
 - maintenance
- layout for lighting in multi-purpose halls and enclosed areas
- sports grounds and stadiums:
 - lighting configuration
 - sports grounds with no spectator stand
 - sports grounds and stadiums with a spectator stand
- swimming/diving areas
- other considerations:
 - theatrical lighting effects and dynamic lighting
- recommendations:
 - recommendations for non-televised events
 - classes of play
 - recommendations for televised events
- problem-solving techniques
- relevant manufacturer specifications and operating instructions
- relevant job safety assessments or risk mitigation processes
- relevant WHS/OHS legislated requirements

- relevant workplace quality, instructions, policies and procedures.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated suitable workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, tools, facilities and equipment currently used in industry
- resources that reflect current industry practices in relation to designing effective and efficient lighting for public, open and sports areas
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>