



Australian Government

UEEEEC0012 Design custom electronic equipment installations

Release: 1

UEEEEC0012 Design custom electronic equipment installations

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 custom electronic equipment installations.

It includes preparing to design custom electronic installations, and developing and obtaining approval for installation designs.

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

Pre-requisite Unit

UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEECD0019 Fabricate, assemble and dismantle utilities industry components

UEECD0020 Fix and secure electrotechnology equipment

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEECD0025 Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits

UEEEEC0077 Verify functionality and compliance of custom electronic installations

UEEEEC0004 Assemble and set up fixed video/audio components and systems in buildings and premises

Competency Field

Electronics and Communications

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

PERFORMANCE CRITERIA

Elements describe the essential Performance criteria describe the performance needed to

outcomes.

demonstrate achievement of the element.

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| 1 Prepare to design custom electronic installations | 1.1 Work health and safety (WHS)/occupational health and safety (OHS) requirements and workplace procedures for relevant work area are identified, obtained and applied |
| | 1.2 Risk control measures are applied in accordance with workplace procedures prior to commencing work |
| | 1.3 Extent of the proposed custom electronic installation is determined from the design brief or in consultation with relevant person/s |
| | 1.4 Design development work is planned in consultation with others to meet scheduled timelines |
| 2 Develop installation design | 2.1 Principles of audio/video components, home theatre acoustics and regulations are applied to the design |
| | 2.2 Installation design alternatives are considered based on the requirements outlined in the design brief |
| | 2.3 Safety, functional and budgetary considerations are incorporated in the installation design |
| | 2.4 Installation design draft is checked for compliance with the design brief and relevant industry standards |
| | 2.5 Installation design is submitted to relevant person/s for approval |
| | 2.6 Solutions to unplanned events are provided in accordance with workplace procedures |
| 3 Obtain approval for installation design | 3.1 Installation design is presented and explained to client and/or relevant person/s |
| | 3.2 Requests for design alterations are negotiated with relevant person/s in accordance with workplace procedures |
| | 3.3 Final design is submitted for approval of 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 custom electronic equipment installations must include at least the following:

- two custom electronic installations, one of which must incorporate a dedicated home theatre

Unit Mapping Information

This unit replaces and is equivalent to UEENEEH135A Design custom electronic equipment installations.

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 UEEEC0012 Design custom electronic equipment installations

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:

- developing outlines of alternative designs
- developing the design within the safety and functional requirements and budget limitations
- documenting and presenting design effectively
- successfully negotiating design alteration requests
- obtaining approval for final design
- dealing with unplanned events
- applying relevant risk identification, assessment, reporting and control requirements
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including the use of risk control measures
- coordinating work with relevant person/s
- determining scope of design work.

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 range of conditions and include knowledge of:

- custom electronic equipment installation design, safe working practices and relevant standards, codes and regulations, including:
 - integrated audio systems:
 - types of audio control and switching devices
 - types of surround sound systems
 - operation of system control circuits, including the remote device
 - video and display set-up:
 - projectors encompassing:
 - aspect ratio
 - screen size
 - orientation

- throw distance, vertical elevation and horizontal orientation
- direct view monitors adjustments
- audio/video control equipment:
 - types of control devices and their operating principles
 - control equipment arrangement in an audio/video system
- technical standards, regulations and codes for extra-low voltage (ELV) work:
 - limitation imposed by regulations
 - how to read and apply a standard
 - aspects of technical standards that apply to ELV work
- environmental and heritage awareness:
 - purpose of environmental and heritage regulation
 - typical issues affecting electrotechnology services and systems
 - meeting requirements
- acoustics, spatial treatment and sound reproduction:
 - effects of room dimensions, spatial shape and surface textures on acoustics
 - ideal acoustic for specific purposes - speech, solo or small group music, rock music, orchestral music, choral music and cinema
 - measuring room response
 - speaker placement and room response
 - room treatment methods to improve acoustic response
 - active methods to improve acoustic response
- equipment installation design:
 - requirements
 - limitations
 - procedures
 - documentation
- relevant manufacturer specifications
- relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes
- relevant WHS/OHS legislated requirements.

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, equipment and personal protective equipment (PPE) currently used in industry
- resources that reflect current industry practices in relation to designing custom electronic installations
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -

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