



Australian Government

UEEEEC0010 Design and develop advanced digital systems

Release: 1

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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 and develop digital systems.

It includes designing and developing a digital system. It also includes working safely, following design brief, interpreting device/component specifications, constructing prototype devices, applying programming techniques to programmable devices, testing developed system prototype operation, verifying compliance of the design against the final brief, and documenting design and development work.

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

Pre-requisite Unit

Not applicable.

Competency Field

Electronics and Communications

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to design and develop digital system

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) requirements and workplace processes and procedures for a given design work area are identified and applied

- 1.2 WHS/OHS risk control measures and workplace procedures are followed in preparation for the design work
 - 1.3 Extent of the proposed digital system development is determined from the design brief or in consultation with appropriate person/s
 - 1.4 Design development work is planned to meet scheduled timelines in consultation with other person/s involved in the development work
 - 1.5 Materials and devices/components required for the development work are selected on compatibility of their specifications with digital system requirements and project budget constraints
 - 1.6 Tools, equipment and testing devices needed to carry out the development work are obtained and checked for correct operation and safety
- 2 Design and develop advanced digital system**
- 2.1 WHS/OHS risk control work measures and workplace procedures are followed
 - 2.2 Digital devices and system and compliance industry standards are applied to the digital system design
 - 2.3 Alternative arrangements for the design are considered based on the requirements outlined in the design brief
 - 2.4 Safety, functional and budget considerations are incorporated in the design
 - 2.5 Prototype devices and circuits are constructed and tested for compliance with the design brief, industry standards and regulatory requirements
 - 2.6 Prototype malfunctions are rectified and retested to ensure effective operation of design
 - 2.7 Digital system design is documented for submission to appropriate person/s for approval
 - 2.8 Unplanned situations are responded to in accordance with workplace procedures in a manner that minimises risk to personnel and equipment
- 3 Obtain approval for the design**
- 3.1 Design is presented and explained to client representative and/or relevant person/s

- 3.2 Requests for modifications to the design are negotiated with relevant person/s within the constraints of workplace policy
- 3.3 Final design is documented and approval obtained from appropriate person/s
- 3.4 Quality of work is monitored against design brief performance agreement and/or workplace procedures or 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 and developing an advanced digital system must include at least the following:

- five variables
- sequential functions
- combinatorial functions

Unit Mapping Information

This unit replaces and is equivalent to UEENEEH148A Design and develop advanced digital systems.

Links

Companion Volume implementation guides are found in VETNet - -

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