Australian Government

UEE62120 Advanced Diploma of Engineering Technology - Electrical

Release 2

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Modification History

Release 2: This minor update is the second release of this qualification in the UEE Electrotechnology Training Package.

An incorrect reference to the total general elective weighting point requirements was fixed.

Imported elective units updated.

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

Qualification Description

This qualification covers competencies to design and validate/evaluate electrical equipment and systems and provide technical advice/sales.

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

Entry Requirements

There are no entry requirements for this qualification

Packaging Rules

A total of **2160 weighting points** comprising:

1460 core weighting points listed below; **plus**

700 general elective weighting points from the general elective units listed below.

Choose a total of 700 **weighting points** elective units from the list below, of which between 0 and 360 **weighting points** can be taken from Group A; between 0 and 160 **weighting points** can be taken from Group B; between 0 and 220 **weighting points** can be taken from Group C; between 0 and 220 **weighting points** can be taken from Group D; and between 200 and 700 **weighting points** can be taken from Group E (or all 700 elective **weighting points** can be taken from Group E.

Up to 360 weighting points of the general elective units Group A, may be selected, with appropriate contextualisation, from any relevant nationally endorsed Training Package or accredited course, provided selected units contribute to the vocational outcome of the qualification. Previously assigned weighting points are listed in the UEE Electrotechnology Training package Companion Volume Implementation Guide (CVIG), if not listed weighting points will be 10 points, unless directed from the Electrotechnology Industry Reference

Committee (IRC).

There are units of competency within this qualification that contain pre-requisites. Units of competency that have a pre-requisite requirement are identified by this symbol *. Refer directly to the units of competency to identify pre-requisite requirements to ensure all are complied with. A list of all pre-requisites is also provided in the UEE Pre-requisite Companion Volume.

Where imported units are selected, care must be taken to ensure all pre-requisite units specified are complied with.

Core units		**Weighting Points**
UEECD0003	Apply industry and community standards to engineering activities	20
UEECD0004	Apply material science to solving electrotechnology engineering problems	60
UEECD0005	Apply physics to solving electrotechnology engineering problems	60
UEECD0007	Apply work health and safety regulations, codes and practices in the workplace	20
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0014	Develop design briefs for electrotechnology projects	40
UEECD0016	Document and apply measures to control WHS risks associated with electrotechnology work*	20
UEECD0017	Establish and follow a competency development plan in an electrotechnology engineering discipline	120
UEECD0019	Fabricate, assemble and dismantle utilities industry components*	40
UEECD0020	Fix and secure electrotechnology equipment*	20
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
UEECD0026	Manage risk in electrotechnology activities	60
UEECD0036	Provide engineering solutions for problems in complex multiple path circuits	60
UEECD0039	Provide solutions to basic engineering computational problems*	60

UEECD0043	Solve problems in direct current circuits*	80
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications*	40
UEECD0059	Write specifications for electrical engineering projects	40
UEECS0033	Use engineering applications software on personal computers	40
UEEEL0003	Arrange circuits, control and protection for electrical installations*	40
UEEEL0008	Evaluate and modify low voltage heating equipment and controls*	20
UEEEL0009	Evaluate and modify low voltage lighting circuits, equipment and controls*	20
UEEEL0010	Evaluate and modify low voltage socket outlets circuits*	20
UEEEL0015	Manage large electrical projects*	40
UEEEL0018	Select wiring systems and select cables for low voltage electrical installations*	60
UEEEL0019	Solve problems in direct current (d.c.) machines*	30
UEEEL0020	Solve problems in low voltage a.c. circuits*	80
UEEEL0021	Solve problems in magnetic and electromagnetic devices*	30
UEEEL0023	Terminate cables, cords and accessories for low voltage circuits*	40
UEEEL0024	Test and connect alternating current (a.c.) rotating machines*	50
UEEEL0025	Test and connect transformers*	30
UEEEL0058	Plan large electrical projects*	60
UEEEL0062	Provide engineering solutions to problems in complex polyphase power circuits*	60
UEERE0013	Develop strategies to address environmental and	20

	sustainability issues in the energy sector	

Group A: Imported and common elective units		**Weighting Points**
BSBOPS203	Deliver a service to customers	20
BSBINS501	Implement information and knowledge management systems	50
BSBSTR501	Establish innovative work environments	50
BSBLDR522	Manage people performance	70
BSBSTR502	Facilitate continuous improvement	60
BSBTWK502	Manage team effectiveness	60
ICTICT214	Operate application software packages	20
UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	20
UEECO0002	Maintain documentation	20
UEECO0015	Provide quotations for installation or service jobs	20
UEECO0017	Source and purchase material/parts for installation or service jobs	20

Group B: General elective units		**Weighting Points**
UEECD0020	Fix and secure electrotechnology equipment*	20
UEECD0028	Plan an integrated cabling installation system*	40
UEECD0030	Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software*	60
UEECD0031	Prepare engineering drawings using manual drafting and CAD for electrotechnology applications*	60
UEEDV0005	Install and maintain cabling for multiple access to telecommunication services*	80
UEEDV0008	Install, modify and verify coaxial and structured communication copper cabling*	40

UEEEC0003	Assemble and set up basic security systems*	80
UEEEC0060	Repairs basic electronic apparatus faults by replacement of components*	40
UEEEC0075	Troubleshoot single phase input d.c power supplies*	40
UEEEL0004	Carry out basic repairs to electrical components and equipment*	40
UEEEL0016	Provide advice on effective and energy efficient lighting products	20
UEEEL0022	Supply effective and efficient lighting products for domestic and small commercial applications*	40
UEEEL0061	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect*	20
UEEEL0069	Select and arrange equipment for special LV electrical installations*	60
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices*	20
UEEIC0011	Develop electrical integrated systems*	20
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEEIC0024	Plan the electrical installation of integrated systems*	20
UEEIC0025	Provide solutions to extra-low voltage (ELV) electro-pneumatic control systems and drives*	60
UEEIC0047	Use instrumentation drawings, specifications, standards and equipment manuals*	40
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems*	20
UETTDRIS67	Solve problems in energy supply network equipment*	80
UETTDRIS68	Solve problems in energy supply network protection equipment and systems*	40

Group C: General elective units	**Weighting Points**

UEECO0001	Estimate electrotechnology projects	40
UEEEL0007	Develop detailed electrical drawings*	60
UEEEL0036	Design effective and efficient lighting for residential and commercial buildings*	20
UEEEL0057	Plan electrical installations with a low voltage demand up to 400 A per phase*	40
UEEEL0059	Plan low voltage switchboard and control panel layouts*	40
UEEEL0060	Prepare quotations for the supply of effective and efficient lighting products for lighting projects*	20
UEEEL0063	Provide photometric data for illumination system design	60
UEEEL0070	Select effective and efficient light sources and luminaries for given locations and designs*	60
UEEIC0009	Develop an electrical integrated system interface for access through a touch screen*	20
UEEIC0012	Develop structured programs to control external devices*	40
UEEIC0014	Develop, enter and verify programs in supervisory control and data acquisition systems*	60
UEEIC0015	Develop, enter and verify word and analogue control programs for programmable logic controllers*	60
UEERE0011	Design grid-connected photovoltaic power supply systems*	60

Group D: General elective units		**Weighting Points**
UEECD0013	Develop and implement energy sector maintenance programs	60
UEECO0014	Prepare tender submissions for electrotechnology projects*	60
UEECS0016	Develop energy sector directory services*	80
UEEEL0006	Develop detailed and complex drawings for electrical systems using CAD systems*	60

UEEEL0011	Evaluate performance of low voltage electrical apparatus*	40
UEEEL0035	Design effective and efficient lighting for public, open and sports areas*	20
UEEEL0037	Design electrical installations with a low voltage demand greater than 400 A per phase*	40
UEEIC0005	Configure and maintain industrial control system networks*	60
UEEIC0010	Develop and test code for microcontroller devices	60
UEEIC0016	Diagnose and rectify faults in a.c. motor drive systems*	60
UEEIC0017	Diagnose and rectify faults in d.c. motor drive systems*	60
UEEIC0019	Diagnose and rectify faults in servo drive systems*	60
UEERE0029	Design micro-hydro systems rated to 6.4 kW*	60
UEERE0030	Design renewable energy (RE) heating systems*	120
UEERE0032	Design wind energy conversion systems (WECS) rated to 10 kW*	60
UETTDRIS70	Diagnose and rectify faults in electrical energy distribution systems*	60
UETTDRIS71	Diagnose and rectify faults in electrical energy supply transmission systems*	60
UETTDRIS72	Diagnose and rectify faults in distributed generation systems*	60

Group E: General elective units		**Weighting Points**
UEECD0001	Analyse materials for suitability in electrical equipment*	80
UEECD0002	Analyse static and dynamic parameters of electrical equipment	80
UEECD0012	Contribute to risk management in electrotechnology systems	20
UEECD0015	Develop engineering solutions to photonic system	80

	problems*	
UEECD0037	Provide engineering solutions for uses of materials and thermodynamic effects	80
UEECD0049	Use advanced computational processes to provide solutions to energy sector engineering problems*	80
UEECO0003	Manage contract variations	40
UEECS0015	Develop energy sector computer network applications infrastructure	80
UEEEC0005	Assess electronic apparatus compliance	60
UEEEC0011	Design and develop electronics/computer systems projects	40
UEEEC0014	Design signal-conditioning sub-systems	80
UEEEC0045	Modify digital signal processing (DSP) based sub-systems	80
UEEEL0038	Design switchboards rated for high fault levels (greater than 400 A)*	60
UEEEL0041	Develop engineering solution for synchronous machine and control problems*	60
UEEEL0042	Develop engineering solutions for d.c. machine and control problems*	60
UEEEL0043	Develop engineering solutions for induction machine and control problems*	60
UEEIC0006	Design and configure Human-Machine Interface (HMI) networks	60
UEEIC0007	Design and use advanced programming tools, PC networks and HMI Interfacing	120
UEEIC0008	Design electronic control systems*	60
UEEIC0032	Set up electronically controlled robotically operated complex systems*	80
UEERE0010	Design energy management controls for electrical installations in buildings*	80

UEERE0012	Develop effective engineering strategies for energy reduction in buildings*	60
UEERE0028	Design hybrid renewable power systems*	80
UEERE0031	Design stand-alone renewable energy (RE) systems*	40
UEERE0033	Develop engineering solutions to renewable energy (RE) problems*	60
UETTDRIS73	Develop engineering solutions for energy supply power transformer problems*	60
UETTDRIS74	Develop engineering solutions for energy supply system protection problems*	60

Qualification Mapping Information

This qualification replaces and is equivalent to UEE62111 Advanced Diploma of Engineering Technology - Electrical

Links

Companion Volume Implementation Guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6