Australian Government

UEE62320 Advanced Diploma of Electrical Engineering - Coal Mining

Release 1

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Modification History

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 coal mining electrical equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales.

It develops competencies in the ethical and responsible application of mathematics, science, engineering techniques, standards and codes of practice, engineering design practices, supervision and management of physical, human and financial resources in engineering.

The core competencies of this qualification meet the prescribed requirements for Engineering Associate membership of Engineers Australia.

Participants seeking Engineers Australia membership should ensure that their training provider is accredited by that body to provide Engineering Education Programs at the level of Engineering Associate.

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

Entry Requirements

The entry requirement for this qualification is:

- UEE30820 Certificate III in Electrotechnology Electrician

or

- a current 'Unrestricted Electricians Licence' or its equivalent issued in an Australian state or territory.

Packaging Rules

A total of **1320 weighting points** comprising:

1000 core weighting points listed below; **plus**

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

Choose a total of 320 **weighting points** elective units from the list below, of which between 0 and 160 **weighting points** can be taken from Group A; between 0 and 60 **weighting points** can be taken from Group B; between 0 and 100 **weighting points** can be taken from Group C;

between 0 and 60 **weighting points** can be taken from Group D; and between 160 and 320 **weighting points** can be taken from Group E (or all 320 elective **weighting points** can be taken from Group E).

Up to 160 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**
RIIRAI609D	Establish and maintain electrical installations, reticulation and protection system	120
RIIRIS601D	Establish and maintain the risk management system	100
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
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0014	Develop design briefs for electrotechnology projects	40
UEECD0017	Establish and follow a competency development plan in an electrotechnology engineering discipline	120
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
UEECD0036	Provide engineering solutions for problems in complex multiple path circuits	60

UEECD0039	Provide solutions to basic engineering computational problems*	60
UEECD0056	Apply methods to maintain currency of industry developments	20
UEECD0059	Write specifications for electrical engineering projects	40
UEECS0033	Use engineering applications software on personal computers	40
UEEEL0015	Manage large electrical projects*	40
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 sustainability issues in the energy sector	20

Group A: Imported and common elective units		**Weighting Points**
BSBINM501	Manage an information or knowledge management system	50
BSBINN502	Build and sustain an innovative work environment	50
BSBMGT502	Manage people performance	70
BSBMGT516	Facilitate continuous improvement	60
BSBWOR502	Lead and manage team effectiveness	60

Group B: General elective units		**Weighting Points**
UEEHA0005	Install explosion-protected equipment and associated apparatus and wiring systems*	60
UEEHA0006	Maintain equipment associated with hazardous areas*	60
UEEHA0010	Supervise repair and overhaul of explosion-protected equipment type Group III (‘t’)*	60
UEEHA0011	Supervise repair and overhaul of explosion-protected equipment type flameproof (Ex d)*	60

UEEHA0012	Supervise repair and overhaul of explosion-protected equipment type increased safety (Ex e)*	60
UEEHA0013	Supervise repair and overhaul of explosion-protected equipment type intrinsically safe (Ex i)*	60
UEEHA0014	Supervise repair and overhaul of explosion-protected equipment type pressurised (Ex p)*	60
UEEHA0015	Supervise repair and overhaul of explosion-protected rotating machines*	60

Group C: General elective units		**Weighting Points**
UEECD0013	Develop and implement energy sector maintenance programs	60
UEECO0001	Estimate electrotechnology projects	40
UEEEL0029	Conduct compliance inspection of LV electrical installations with demand exceeding 100 A per phase*	40
UEEEL0030	Conduct compliance inspection of single phase LV electrical installations*	60
UEEEL0031	Conduct compliance inspection of special LV electrical installations*	60
UEEEL0032	Conduct electrical tests on HV electrical machines*	60
UEEEL0033	Conduct electrical tests on LV electrical machines*	40
UEEEL0034	Conduct mechanical tests on electrical machines and components*	40
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
UEEEL0073	Verify compliance and functionality of special LV electrical installations*	40
UEEHA0001	Conduct detailed inspection of electrical installations for hazardous areas*	40
UEEHA0002	Conduct visual and close inspection of electrical installations for hazardous areas*	40

UEEHA0003	Determine the explosion-protection requirements to meet a specified classified hazardous area*	40
UEEHA0004	Enter a classified hazardous area to undertake work related to electrical equipment	40
UEEHA0005	Install explosion-protected equipment and associated apparatus and wiring systems*	60
UEEHA0006	Maintain equipment associated with hazardous areas*	60
UEEHA0009	Develop and manage periodic electrical inspection and maintenance programs for hazardous areas*	20
UEEIC0012	Develop structured programs to control external devices*	40
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEEIC0018	Diagnose and rectify faults in digital controls systems*	60
UETTDRIS67	Solve problems in energy supply network equipment*	80
UETTDRIS68	Solve problems in energy supply network protection equipment and systems*	40

Group D: General elective units		**Weighting Points**
UEECO0014	Prepare tender submissions for electrotechnology projects*	60
UEEEL0011	Evaluate performance of low voltage electrical apparatus*	40
UEEEL0027	Carry out low voltage electrical field testing and report findings*	60
UEEEL0037	Design electrical installations with a low voltage demand greater than 400 A per phase*	40
UEEEL0051	Investigate and report on electrical incidents and causes*	60
UEEHA0007	Plan electrical installations for hazardous areas*	20
UEEIC0005	Configure and maintain industrial control system networks*	60

UEEIC0006	Design and configure human-machine interface (HMI) networks	60
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
UEEIC0020	Fault find and repair analogue circuits and components in electronic control systems*	60

Group E: General elective units		**Weighting Points**
UEECD0049	Use advanced computational processes to provide solutions to energy sector engineering problems*	80
UEECO0003	Manage contract variations	40
UEEEL0038	Design switchboards rated for high fault levels (greater than 400 A)*	60
UEEEL0043	Develop engineering solutions for induction machine and control problems*	60
UEEIC0007	Design and use advanced programming tools, PC networks and HMI Interfacing	120
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
UETTDRIS73	Develop engineering solutions for energy supply power transformer problems*	60

Qualification Mapping Information

This qualification replaces and is not equivalent to UEE62311 Advanced Diploma of Electrical Engineering - Coal Mining

Links

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