Australian Government

UEE62311 Advanced Diploma of Electrical Engineering - Coal Mining

Release 5

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

UEE62311 Advanced Diploma of Electrical Engineering - Coal Mining

Modification History

Release	Action	Core/Elective	Details	Points
3	Edit		Edit Name to reflect correct Unit title UEENEED104A Use engineering applications software on personal computers	40
3	Edit		Edit Name to Reflect correct Unit Title UEENEEI124A Fault find and repair analogue circuits and components in electronic control systems	
3	Edit		Move unit from Elective Group C to Group B UETTDRIS67A Solve problems in energy supply network equipment	
3	Edit		Move unit from Elective Group C to Group B UETTDRIS68A Solve problems in energy supply network protection equipment and systems	
4	Edit	Group D	Edit Name to reflect correct Unit title UEENEEI151A Develop, enter and verify word and analogue control programs for programmable logic controllers.	60
5	Update	Elective	RIIRAI609D - Establish and maintain electrical installations, reticulation and protection system	120
5	Update	Elective	RIIRIS601D - Establish and maintain the risk management system	100
5	Edit	Core	Correct title of RIIRAI609A - Establish and maintain electrical installations, reticulation and protection system	120
5	Edit	Elective	Correct title of UEENEEI154A - Design and use advanced programming tools PC networks and HMI Interfacing	120

5	Edit	Elective	Correct title of UEENEEM038A - Conduct testing of hazardous areas installations - coal mining	40
5	Edit	Elective	Correct title of UEENEEM043A - Conduct detailed inspection of hazardous areas installations - coal mining	40
5	Edit	Elective	Correct title of UEENEEM074A - Plan electrical installations in hazardous areas - Coal mining	20
5	Edit	Elective	Correct title of UEENEEM080A - Report on the integrity of explosion-protected equipment in a hazardous area	20

Description

Scope

This qualification provides 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 and ERAC requirements for an 'Electrician's licence'.

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.

Pathways Information

Not Applicable

Licensing/Regulatory Information

Not Applicable

Entry Requirements

Not Applicable

Employability Skills Summary

Not Applicable

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 320 points in accordance with the Elective Competency Standard Units table below.

Note: UEENEEG105A - Those holding an 'Unrestricted Electricians Licence or equivalent issued in an Australian State or Territory meet the requirements of this unit and its pre-requisite requirements.

Core Competency Standard Units All Core competency standard units to be achieved		**Weighting Points**
RIIRAI609D	Establish and maintain electrical installations, reticulation and protection system	120
RIIRIS601D	Establish and maintain the risk management system	100
UEENEED104A	Use engineering applications software on personal computers	40
UEENEEE006B	Apply methods to maintain currency of industry developments	20
UEENEEE015B	Develop design briefs for electrotechnology projects	40
UEENEEE071B	Write specifications for electrical engineering projects	40
UEENEEE080A	Apply industry and community standards to engineering activities	20
UEENEEE081A	Apply material science to solving electrotechnology engineering problems	60
UEENEEE082A	Apply physics to solving electrotechnology engineering problems	60
UEENEEE083A	Establish and follow a competency development plan in an electrotechnology engineering discipline	120
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	20

Core Competency Standard Units All Core competency standard units to be achieved		**Weighting Points**
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40
UEENEEE104A	Solve problems in d.c. circuits	80
UEENEEE105A	Fix and secure electrotechnology equipment	20
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications	40
UEENEEE117A	Implement and monitor energy sector OHS policies and procedures	20
UEENEEE124A	Compile and produce an energy sector detailed report	60
UEENEEE125A	Provide engineering solutions for problems in complex multiple path circuits	60
UEENEEE126A	Provide solutions to basic engineering computational problems	60
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work	20
UEENEEG006A	Solve problems in single and three phase low voltage machines	80
UEENEEG033A	Solve problems in single and three phase low voltage electrical apparatus and circuits	60
UEENEEG063A	Arrange circuits, control and protection for general electrical installations	40
UEENEEG101A	Solve problems in electromagnetic devices and related circuits	60
UEENEEG102A	Solve problems in low voltage a.c. circuits	80
UEENEEG103A	Install low voltage wiring and accessories	20
UEENEEG104A	Install appliances, switchgear and associated accessories for low voltage electrical installations	20
UEENEEG105A	Verify compliance and functionality of low voltage	40

Core Competency Standard Units All Core competency standard units to be achieved		**Weighting Points**
	general electrical installations	
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits	40
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations	60
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	40
UEENEEG109A	Develop and connect electrical control circuits	80
UEENEEG149A	Provide engineering solutions to problems in complex polyphase power circuits	60
UEENEEG169A	Manage large electrical projects	40
UEENEEG170A	Plan large electrical projects	60
UEENEEK132A	Develop strategies to address environmental and sustainability issues in the energy sector	20
Total points in core		**1840**

Elective Competency Standard Units Complete Elective units to achieve a total of weighting of 320 points from the following groups:			
Group		**Minimum points**	**Maximum points**
A	**Imported and Common Elective Units** Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 6. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	0	160
B	**Qualification Elective Units**	0	60

C	**Qualification Elective Units**	0	100
D	**Qualification Elective Units**	0	60
E	**Qualification Elective Units** You may select the majority of your elective units from this Group	160	320

Group A – Imported and Common Electives Units You may complete units to a maximum weighting of 160		**Weighting Points**
BSBMGT502B	Manage people performance	70
BSBINM501A	Manage an information or knowledge management system	50
BSBMGT516C	Facilitate continuous improvement	60
BSBINN502A	Build and sustain an innovative work environment	50
BSBWOR502B	Ensure team effectiveness	60
	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 6. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework	Up to 160 points

Group B – Qualification Elective Units You may complete units to a maximum weighting of 60		**Weighting Points**
UEENEEM019A	Attend to breakdowns in hazardous areas — coal mining	20
UEENEEM023A	Install explosion-protected equipment and wiring systems — coal mining	60
UEENEEM027A	Maintain equipment in hazardous areas — coal mining	60
UEENEEM031A	Overhaul and repair of explosion-protected equipment — coal mining	60
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20

Group C – Qualification Elective Units You may complete units to a maximum weighting of 100		**Weighting Points**
UEENEEC005B	Estimate electrotechnology projects	40
UEENEEE110A	Develop and implement energy sector maintenance programs	60
UEENEEG121A	Verify compliance and functionality of special LV electrical installations	40
UEENEEG122A	Conduct compliance inspection of single phase LV electrical installations	60
UEENEEG123A	Conduct compliance inspection of LV electrical installations with demand exceeding 100 A per phase	40
UEENEEG124A	Conduct compliance inspection of special LV electrical installations	60
UEENEEG125A	Plan electrical installations with a low voltage demand up to 400 A per phase	40
UEENEEG128A	Plan low voltage switchboard and control panel layouts	40
UEENEEG157A	Conduct electrical tests on LV electrical machines	40
UEENEEG158A	Conduct electrical tests on HV electrical machines	60
UEENEEG159A	Conduct mechanical tests on electrical machines and components	40
UEENEEI139A	Diagnose and rectify faults in digital controls systems	60
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
UEENEEI155A	Develop structured programs to control external devices	40
UEENEEM038A	Conduct testing of hazardous areas installations - coal mining	40
UEENEEM042A	Conduct visual inspection of hazardous areas installations	40

UEENEEM043A	Conduct detailed inspection of hazardous areas installations - coal mining	40
UEENEEM047A	Develop and manage maintenance programs for hazardous areas electrical equipment — coal mining	20
UEENEEM078A	Manage compliance of hazardous areas	20
UETTDRIS67A	Solve problems in energy supply network equipment	80
UETTDRIS68A	Solve problems in energy supply network protection equipment and systems	40

Group D – Qualification Elective Units You may complete units to a maximum weighting of 60		**Weighting Points**
UEENEEC006B	Prepare tender submissions for electrotechnology projects	60
UEENEEI152A	Develop, enter and verify programs in Supervisory Control and Data Acquisition systems	60
UEENEEI151A	Develop, enter and verify word and analogue control programs for programmable logic controllers.	60
UEENEEI157A	Configure and maintain industrial control system networks	60
UEENEEG127A	Design electrical installations with a low voltage demand greater than 400 A per phase	40
UEENEEG131A	Evaluate performance of low voltage electrical apparatus	40
UEENEEG132A	Carry out low voltage electrical field testing and report findings	60
UEENEEG160A	Evaluate performance of LV electrical machines	40
UEENEEG172A	Investigate and report on electrical incidents and causes	60
UEENEEI153A	Design and configure Human-Machine Interface (HMI) networks	60
UEENEEI124A	Fault find and repair analogue circuits and components in electronic control systems	60
UEENEEM036A	Conduct a conformity assessment of explosion-protected equipment — gas atmospheres	40
UEENEEM035A	Conduct a conformity assessment of explosion-protected equipment — coal mining	40
UEENEEM064A	Conduct audit of hazardous areas installations — coal mining	60
UEENEEM074A	Plan electrical installations in hazardous areas - Coal mining	20

Group E – Qualification Elective Units You must complete units to a minimum weighting of 160 You may select all your elective units from this Group		**Weighting Points**
UEENEEC007B	Manage contract variations	40
UEENEEE127A	Use advanced computational processes to provide solutions to energy sector engineering problems	80
UEENEEG130A	Design switchboards rated for high fault levels (greater than 400 A)	60
UEENEEG145A	Develop engineering solutions for induction machine and control problems	60
UEENEEG161A	Design and develop modifications to LV electrical machines	60
UEENEEI145A	Diagnose and rectify faults in a.c. motor drive systems	60
UEENEEI146A	Diagnose and rectify faults in d.c. motor drive systems	60
UEENEEI147A	Diagnose and rectify faults in servo drive systems	60
UEENEEI154A	Design and use advanced programming tools PC networks and HMI Interfacing	120
UEENEEM067A	Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — coal mining	60
UETTDRIS73A	Develop engineering solutions for energy supply power transformer problems	60

Note:
1. Pre-requisite pathways shall be identified and met for all elective units selected.
2. In selecting elective units considerations to career planning advice should be given to units that form part of a pre-requisite pathway for the progression to achieve particular competencies or qualification at a higher level.
3. Registered training organisations shall also provide information related to the relevant pathway(s) that may be taken to achieve paraprofessional status ("associate membership") with a professional engineering membership organisation.

END OF QUALIFICATION