



Australian Government

UEE60911 Advanced Diploma of Renewable Energy Engineering

Release 4

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Modification History

Release	Action	Core/Elective	Details	Points
2	Add	Group D	UEENEEE161A Analyse static and dynamic parameters of electrical equipment	80
2	Edit		Edit Name to reflect correct Unit title UEENEE104A Use engineering applications software on personal computers	40
3	Edit	Group C	Edit Name to reflect correct Unit title UEENEE1151A Develop, enter and verify word and analogue control programs for programmable logic controllers.	60
4	Edit	Core	Correct title of UEENEEE074B Write specifications for renewable energy engineering projects	40
4	Edit	Core	Correct title of UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
4	Edit	Core	Correct title of UEENEEE102A Fabricate, assemble and dismantle utilities industry components	40
4	Edit	Core	Correct title of UEENEEE117A Implement and monitor energy sector OHS policies and procedures	20
4	Edit	Core	Correct title of UEENEEE125A Provide engineering solutions for problems in complex multiple path circuits	60
4	Edit	Core	Correct title of UEENEEK128A Solve problems in stand-alone renewable energy systems	60
4	Edit	Elective	Correct title of UEENEEE127A Use advanced computational processes to provide solutions to energy sector engineering problems	80

4	Edit	Elective	Correct title of UEENEEE163A Analyse materials for suitability in electrical equipment	80
4	Edit	Elective	Correct title of UEENEEE192A Produce detailed electrotechnology /utilities drawings using computer aided design equipment and software	60
4	Edit	Elective	Correct title of UEENEEG125A Plan electrical installations with a low voltage demand up to 400 A per phase	40
4	Edit	Elective	Correct title of UEENEEG127A Design electrical installations with a low voltage demand greater than 400 A per phase	40
4	Edit	Elective	Correct title of UEENEEG128A Plan low voltage switchboard and control panel layouts	40
4	Edit	Elective	Correct title of UEENEEG130A Design switchboards rated for high fault levels (greater than 400 A)	60
4	Edit	Elective	Correct title of UEENEEG132A Carry out low voltage electrical field testing and report findings	60
4	Edit	Elective	Correct title of UEENEEG177A Select low voltage power factor correction equipment	40
4	Edit	Elective	Correct title of UEENEEH102A Repairs basic electronic apparatus faults by replacement of components	40
4	Edit	Elective	Correct title of UEENEEI116A Assemble, enter and verify operating instructions in microprocessor equipped devices	20
4	Edit	Elective	Correct title of UEENEEI151A Develop, enter and verify word and analogue control programs for programmable logic controllers.	60
4	Edit	Elective	Correct title of UEENEEK130A Solve problems in wind energy conversion systems rated up to 10 kW	60
4	Edit	Elective	Correct title of UEENEEK134A Install ELV stand-alone photovoltaic power systems	60
4	Edit	Elective	Correct title of UEENEEK135A Design grid	60

			connected photovoltaic power supply systems	
4	Edit	Elective	Correct title of UEENEEK137A Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW	20
4	Edit	Elective	Correct title of UEENEEK138A Design micro-hydro systems rated to 6.4 kW	60
4	Edit	Elective	Correct title of UEENEEK139A Design stand-alone renewable energy (RE) systems	40
4	Edit	Elective	Correct title of UEENEEK140A Develop engineering solutions to renewable energy (RE) problems	60
4	Edit	Elective	Correct title of UEENEEK143A Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications	20
4	Edit	Elective	Correct title of UEENEEK144A Install, configure and commission LV wind energy conversion systems rated up to 10 kW	40
4	Edit	Elective	Correct title of UEENEEK146A Design energy management controls for electrical installations in buildings	80
4	Edit	Elective	Correct title of UEENEEK148A Install, configure and commission LV grid connected photovoltaic power systems	40
4	Edit	Elective	Correct title of UEENEEK151A Develop effective engineering strategies for energy reduction in buildings	60
4	Edit	Elective	Correct title of UEENEEK153A Assess energy loads and uses for energy efficiency in residential, office and retail premises	40
4	Edit	Elective	Correct title of UEENEEK154A Assess energy loads and uses for energy efficiency in commercial facilities	40
4	Edit	Elective	Correct title of UEENEEK155A Assess energy loads and uses for energy efficiency in industrial properties and enterprises	40

Description

Scope

This qualification provides competencies to design and validate/evaluate renewable energy equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales.

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 340 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 meets the requirements of this unit and its pre-requisite requirements.

Core Competency Standard Units		Weighting Points
All Core competency standard units to be achieved		
UEENEEED104A	Use engineering applications software on personal computers	40
UEENEEEE006B	Apply methods to maintain currency of industry developments	20
UEENEEEE011C	Manage risk in electrotechnology activities	60
UEENEEEE015B	Develop design briefs for electrotechnology projects	40
UEENEEEE074B	Write specifications for renewable energy engineering projects	40
UEENEEEE080A	Apply industry and community standards to engineering activities	20
UEENEEEE081A	Apply material science to solving electrotechnology engineering problems	60
UEENEEEE082A	Apply physics to solving electrotechnology engineering problems	60
UEENEEEE083A	Establish and follow a competency development plan in an electrotechnology engineering discipline	120
UEENEEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
UEENEEEE102A	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 general electrical installations	40
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
UEENEEK121A	Manage renewable energy (RE) projects	40
UEENEEK122A	Plan renewable energy (RE) projects	60
UEENEEK123A	Carry out basic repairs to renewable energy apparatus	80
UEENEEK128A	Solve problems in stand-alone renewable energy systems	60
UEENEEK132A	Develop strategies to address environmental and sustainability issues in the energy sector	20
Total points in core		1820

Elective Competency Standard Units

Complete Elective units to achieve a total of weighting of 340 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	170
B	Qualification Elective Units	0	60
C	Qualification Elective Units	0	100
D	Qualification Elective Units	0	60
E	Qualification Elective Units	160	340

Elective Competency Standard Units		
Complete Elective units to achieve a total of weighting of 340 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
	You may select all your elective units from this Group	170

Group A – Imported and Common Elective Units		Weighting Points
You may complete units to a maximum weighting of 170		
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
	<p>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.</p> <p>Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework</p>	Up to 170 points

Group B – Qualification Elective Units		Weighting Points
You may complete units to a maximum weighting of 60		
UEENEEE190A	Prepare engineering drawings using manual drafting and CAD for electrotechnology/utilities applications	60
UEENEEE191A	Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software	60
UEENEEG171A	Install, set up and commission interval metering	20
UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40
UEENEEH111A	Troubleshoot single phase input d.c. power supplies	40
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
UEENEEK124A	Solve basic problems in micro hydro systems	20
UEENEEK125A	Solve basic problems in photovoltaic energy apparatus and systems	20
UEENEEK127A	Diagnose and rectify faults in renewable energy control systems	60
UEENEEK130A	Solve problems in wind energy conversion systems rated up to 10 kW	60
UEENEEK134A	Install ELV stand-alone photovoltaic power systems	60
UEENEEK136A	Install, configure and commission LV micro-hydro systems rated up to 6.4 kW	20
UEENEEK137A	Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW	20
UEENEEK143A	Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications	20
UEENEEK144A	Install, configure and commission LV wind energy conversion systems rated up to 10 kW	40

UEENEEK148A	Install, configure and commission LV grid connected photovoltaic power systems	40
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Group C – Qualification Elective Units		Weighting Points
You may complete units to a maximum weighting of 100		
UEENECC005B	Estimate electrotechnology projects	40
UEENEEE192A	Produce detailed electrotechnology /utilities drawings using computer aided design equipment and software	60
UEENEEG076A	Install and replace low voltage current transformer metering	20
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
UEENEEG132A	Carry out low voltage electrical field testing and report findings	60
UEENEEG162A	Set up and place LV electrical apparatus and associated circuits into service	40
UEENEEG175A	Develop compliance policies and plans to conduct a electrical contracting business	80
UEENEEG177A	Select low voltage power factor correction equipment	40
UEENEEG179A	Develop detailed electrical drawings	60
UEENEEI151A	Develop, enter and verify word and analogue control programs for programmable logic controllers.	60
UEENEEI152A	Develop, enter and verify programs in Supervisory Control and Data Acquisition systems	60
UEENEEK135A	Design grid connected photovoltaic power supply systems	60
UEENEEK152A	Develop strategies to address sustainability issues for electrical installations	20
UEENEEK153A	Assess energy loads and uses for energy efficiency in residential, office and retail premises	40

UEENEEK154A	Assess energy loads and uses for energy efficiency in commercial facilities	40
UEENEEK155A	Assess energy loads and uses for energy efficiency in industrial properties and enterprises	40

Group D – Qualification Elective Units		Weighting Points
You may complete units to a maximum weighting of 60		
UEENEEC006B	Prepare tender submissions for electrotechnology projects	60
UEENEEE110A	Develop and implement energy sector maintenance programs	60
UEENEEG127A	Design electrical installations with a low voltage demand greater than 400 A per phase	40
UEENEEG180A	Develop detailed and complex drawings for electrical systems using CAD systems	60
UEENEEG187A	Design effective and efficient lighting for public, open and sports areas	20
UEENEEI156A	Develop and test code for microcontroller devices	60
UEENEEK129A	Design renewable energy (RE) heating systems	120
UEENEEK131A	Design wind energy conversion systems (WECS) rated to 10 kW	60
UEENEEK138A	Design micro-hydro systems rated to 6.4 kW	60

Group E – Qualification Elective Units		Weighting Points
You must complete units to a minimum weighting of 160 You may select all your elective units from this Group		
UEENEEC007B	Manage contract variations	40
UEENEEE012B	Manage electrotechnology projects	40
UEENEEE013B	Plan electrotechnology projects	60
UEENEEE078B	Contribute to risk management in electrotechnology	20

	systems	
UEENEEE127A	Use advanced computational processes to provide solutions to energy sector engineering problems	80
UEENEEE160A	Provide engineering solutions for uses of materials and thermodynamic effects	80
UEENEEE163A	Analyse materials for suitability in electrical equipment	80
UEENEEG130A	Design switchboards rated for high fault levels (greater than 400 A)	60
UEENEEK133A	Design hybrid renewable power systems	80
UEENEEK139A	Design stand-alone renewable energy (RE) systems	40
UEENEEK140A	Develop engineering solutions to renewable energy (RE) problems	60
UEENEEK146A	Design energy management controls for electrical installations in buildings	80
UEENEEK151A	Develop effective engineering strategies for energy reduction in buildings	60
UEENEEE161A	Analyse static and dynamic parameters of electrical equipment	80

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**Custom Content Section**

Not applicable.