Australian Government

UEE61711 Advanced Diploma of Engineering Technology - Electronics

Release 5

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

UEE61711 Advanced Diploma of Engineering Technology - Electronics

Modification History

Release	Action	Core/Elective	Details	Points
2	Edit		Edit Name to reflect correct Unit title UEENEED104A Use engineering applications software on personal computers	40
4	Add	Group B	UEENEEI150A – Develop, enter and verify discrete control programs for programmable controllers	60
4	Add	Group C	UEENEEI151A – Develop, enter and verify word and analogue control programs for programmable logic controllers.	60
4	Add	Group C	UEENEEI152A – Develop, enter and verify programs in Supervisory Control and Data Acquisition systems	60
4	Add	Group D	UEENEEI157A – Configure and maintain industrial control system networks	60
4	Add	Group E	UEENEEI154A – Design and use advanced programming tools PC networks and HMI Interfacing	120
5	Add	Group C	UEENEEK145A Implement and monitor energy sector environmental and sustainable energy policies and procedures	20
5	Move	Group C	Move to Group D UEENEEH189A Design electronic printed circuit boards	40
5	Edit	Core	Correct title of UEENEED102A - Assemble, set-up and test computing devices	80
5	Edit	Core	Correct title of UEENEEE101A - Apply Occupational Health and Safety regulations, codes	20

			and practices in the workplace	
5	Edit	Core	Correct title of UEENEEE102A - Fabricate, assemble and dismantle utilities industry components	40
5	Edit	Core	Correct title of UEENEEE125A - Provide engineering solutions for problems in complex multiple path circuits	60
5	Edit	Core	Correct title of UEENEEH102A - Repairs basic electronic apparatus faults by replacement of components	40
5	Edit	Core	Correct title of UEENEEH188A - Design and develop electronics - computer systems projects	40
5	Edit	Elective	Correct title of UEENEED101A - Use computer applications relevant to a workplace	20
5	Edit	Elective	Correct title of UEENEED110A - Set up, create and implement content for a web server	120
5	Edit	Elective	Correct title of UEENEED111A - Develop, implement and test object oriented code	140
5	Edit	Elective	Correct title of UEENEED112A - Support computer hardware and software for engineering applications	120
5	Edit	Elective	Correct title of UEENEED113A - Install and administer Unix based networked computers	80
5	Edit	Elective	Correct title of UEENEED115A - Administer computer networks	80
5	Edit	Elective	Correct title of UEENEED117A - Install and configure network systems for internetworking	120
5	Edit	Elective	Correct title of UEENEED118A - Design and implement network systems for internetworking	120
5	Edit	Elective	Correct title of UEENEED119A - Design and implement advanced routing for internetworking systems	100
5	Edit	Elective	Correct title of UEENEED120A - Design and implement remote access for Internetworking systems	100
5	Edit	Elective	Correct title of UEENEED121A - Design and implement multi-layer switching for Internetworking	100

			systems	
5	Edit	Elective	Correct title of UEENEED122A - Design and implement security for Internetworking systems	100
5	Edit	Elective	Correct title of UEENEED123A - - Design and implement wireless LANs/WANs for internetworking systems	100
5	Edit	Elective	Correct title of UEENEED124A - Integrate multiple computer operating systems on a client server local area network	80
5	Edit	Elective	Correct title of UEENEED129A - Develop web pages for engineering applications	40
5	Edit	Elective	Correct title of UEENEED130A - Select, install, configure and test multimedia components	40
5	Edit	Elective	Correct title of UEENEED143A - Install and configure a client computer operating system and software	40
5	Edit	Elective	Correct title of UEENEED144A - Commission industrial computer systems	20
5	Edit	Elective	Correct title of UEENEED145A - Modify-redesign of industrial computer systems	20
5	Edit	Elective	Correct title of UEENEED150A - Develop industrial control programs for microcomputer equipped devices	60
5	Edit	Elective	Correct title of UEENEED151A - Provide programming solution for computer systems engineering problems	60
5	Edit	Elective	Correct title of UEENEED152A - Design embedded controller control systems	80
5	Edit	Elective	Correct title of UEENEED153A - Set up, configure and test biometric devices	40
5	Edit	Elective	Correct title of UEENEED154A - Analyse and implement biometric measuring techniques and applications	120
5	Edit	Elective	Correct title of UEENEED155A - Develop and validate biometric equipment/systems installation	120

5	Edit	Elective	Correct title of UEENEEH174A - Troubleshoot audio - video recording equipment	120
5	Edit	Elective	Correct title of UEENEEH183A - Analyse the performance of wireless-based electronic - communication systems	40
5	Edit	Elective	Correct title of UEENEEI116A - Assemble, enter and verify operating instructions in microprocessor equipped devices	20

Description

Scope
This qualification provides competencies to design and validate/evaluate electronics and/or communication equipment and systems 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 1000 points in accordance with the Elective Competency Standard Units table below.

Core Competency Standard Units All Core competency standard units to be achieved		**Weighting Points**
UEENEED102A	Assemble, set-up and test computing devices	80
UEENEED104A	Use engineering applications software on personal computers	40
UEENEEE015B	Develop design briefs for electrotechnology projects	40
UEENEEE038B	Participate in development and follow a personal competency development plan	20
UEENEEE081A	Apply material science to solving electrotechnology engineering problems	60
UEENEEE082A	Apply physics to solving electrotechnology engineering problems	60
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40
UEENEEE104A	Solve problems in d.c. circuits	80
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
UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40
UEENEEH111A	Troubleshoot single phase input d.c. power supplies	40
UEENEEH112A	Troubleshoot digital sub-systems	80
UEENEEH113A	Troubleshoot amplifiers in an electronic apparatus	80
UEENEEH114A	Troubleshoot resonance circuits in an electronic apparatus	80
UEENEEH139A	Troubleshoot basic amplifier circuits	40
UEENEEH146A	Solve fundamental electronic communications system problems	40
UEENEEH188A	Design and develop electronics - computer systems projects	40
UEENEEK132A	Develop strategies to address environmental and sustainability issues in the energy sector	20
Total points in core		**1160**

Elective Competency Standard Units Complete Elective units to achieve a total of weighting of 1000 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	360
B	**Qualification Elective Units**	0	200
C	**Qualification Elective Units**	0	200
D	**Qualification Elective Units**	100	300
E	**Qualification Elective Units** You may select all your elective units from this Group	280	1000

Group A – Imported and Common Elective Units You may complete units to a maximum weighting of 360		**Weighting Points**
UEENEEC001B	Maintain documentation	20
UEENEEC002B	Source and purchase material/parts for installation or service jobs	20
UEENEEC003B	Provide quotations for installation or service jobs	20
UEENEEC010B	Deliver a service to customers	20
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
BSBINM501A	Manage an information or knowledge management system	50
BSBWOR502B	Ensure team effectiveness	60
BSBMGT502B	Manage people performance	70
BSBMGT516C	Facilitate continuous improvement	60
BSBINN502A	Build and sustain an innovative work environment	50

	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 360 points

Group B – Qualification Elective Units You may complete units to a maximum weighting of 200		**Weighting Points**
UEENEEA101A	Assemble electronic components	40
UEENEEA102A	Select electronic components for assembly	20
UEENEEA103A	Set up and check electronic component assembly machines	40
UEENEEA104A	Modify electronic sub assemblies	40
UEENEEA105A	Conduct quality and functional tests on assembled electronic apparatus	20
UEENEEA106A	Use lead-free soldering techniques	40
UEENEEB101A	Operate and maintain amateur radio communication stations	40
UEENEED112A	Support computer hardware and software for engineering applications	120
UEENEED129A	Develop web pages for engineering applications	40
UEENEED130A	Select, install, configure and test multimedia components	40
UEENEED143A	Install and configure a client computer operating system and software	40
UEENEED146A	Set up and configure basic local area network (LAN)	80
UEENEEE105A	Fix and secure electrotechnology equipment	20
UEENEEE108A	Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits	40
UEENEEE121A	Plan an integrated cabling installation system	40
UEENEEE122A	Carry out preparatory energy sector work activities	60
UEENEEE123A	Solve basic problems electronic and digital equipment and circuits	80
UEENEEE179A	Identify and select components, accessories and materials for energy sector work activities	20

UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services	120
UEENEEF104A	Install and modify performance data communication copper cabling	40
UEENEEF105A	Install and modify optical fibre performance data communication cabling	40
UEENEEF107A	Set up and configure the wireless capabilities of communications and data storage devices	40
UEENEEF108A	Select and arrange equipment for wireless communication networks	40
UEENEEF109A	Install and connect data and voice communication equipment	40
UEENEEF110A	Select and arrange data and voice equipment for local area networks	40
UEENEEF111A	Test, report and rectify faults in data and voice installations	40
UEENEEF114A	Set up and configure basic data communication systems	40
UEENEEH101A	Repair basic computer equipment faults by replacement of modules/sub-assemblies	40
UEENEEH103A	Repair routine business equipment faults	120
UEENEEH104A	Set up and test residential video/audio equipment	40
UEENEEH105A	Verify functionality and compliance of custom electronic installations	40
UEENEEH106A	Assemble and set up fixed video/audio components and systems in buildings and premises	120
UEENEEH107A	Repair predictable faults in general electronic apparatus	40
UEENEEH115A	Develop software solutions for microcontroller based systems	60
UEENEEH116A	Find and repair microwave amplifier section faults in electronic apparatus	40

UEENEEH117A	Carry out repairs of predictable faults in video and audio replay/recording apparatus	120
UEENEEH118A	Fault find and repair electronic apparatus	40
UEENEEH119A	Repair predictable faults in television receivers	120
UEENEEH120A	Fault find and repair gaming and games equipment	80
UEENEEH122A	Fault find and repair remote control apparatus	60
UEENEEH123A	Fault find and repair microwave heating apparatus	40
UEENEEH124A	Repair predictable faults in audio components	40
UEENEEH138A	Fault find and repair complex power supplies	40
UEENEEH142A	Solve oscillator problems	40
UEENEEH150A	Assemble and set up basic security systems	80
UEENEEH152A	Enter instructions and test wired and wireless security systems	40
UEENEEH166A	Troubleshoot microcontroller based hardware systems	40
UEENEEH171A	Troubleshoot faults in television receivers	120
UEENEEH172A	Troubleshoot communication systems	80
UEENEEH174A	Troubleshoot audio - video recording equipment	120
UEENEEH187A	Solve problems in electronic musical equipment circuits	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
UEENEEK145A	Implement and monitor energy sector environmental and sustainable energy policies and procedures	20

Group C – Qualification Elective Units You may complete units to a maximum weighting of 200	**Weighting Points**

Group C – Qualification Elective Units You may complete units to a maximum weighting of 200		**Weighting Points**
UEENEEC004B	Prepare specifications for the supply of materials and equipment for electrotechnology projects	40
UEENEEC005B	Estimate electrotechnology projects	40
UEENEED113A	Install and administer Unix based networked computers	80
UEENEED116A	Develop computer network services	120
UEENEED117A	Install and configure network systems for internetworking	120
UEENEED124A	Integrate multiple computer operating systems on a client server local area network	80
UEENEED153A	Set up, configure and test biometric devices	40
UEENEEH133A	Fault find and repair telecommunication apparatus and systems	60
UEENEEH135A	Design custom electronic equipment installations	120
UEENEEH136A	Design commercial video/audio installations	120
UEENEEH157A	Develop basic plans for integrating security systems	40
UEENEEH175A	Troubleshooting in security system installations	60
UEENEEH176A	Diagnose and rectify faults in electronic display circuits	60
UEENEEH177A	Diagnose and rectify faults in recording and replay equipment	60
UEENEEH178A	Diagnose and rectify faults in camera circuits and equipment	60
UEENEEH179A	Diagnose and rectify faults in digital television circuits and apparatus	80
UEENEEI151A	Develop, enter and verify word and analogue control programs for programmable logic controllers.	60
UEENEEI152A	Develop, enter and verify programs in Supervisory	60

Group C – Qualification Elective Units You may complete units to a maximum weighting of 200		**Weighting Points**
	Control and Data Acquisition systems	
UEENEEI155A	Develop structured programs to control external devices	40

Group D – Qualification Elective Units You may complete units to a maximum weighting of 300		**Weighting Points**
UEENEEC006B	Prepare tender submissions for electrotechnology projects	60
UEENEED110A	Set up, create and implement content for a web server	120
UEENEED111A	Develop, implement and test object oriented code	140
UEENEED115A	Administer computer networks	80
UEENEED144A	Commission industrial computer systems	20
UEENEED145A	Modify-redesign of industrial computer systems	20
UEENEED154A	Analyse and implement biometric measuring techniques and applications	120
UEENEED155A	Develop and validate biometric equipment/systems installation	120
UEENEEE070B	Write specifications for computer systems engineering projects	40
UEENEEE160A	Provide engineering solutions for uses of materials and thermodynamic effects	80
UEENEEE161A	Analyse static and dynamic parameters of electrical equipment	80
UEENEEE163A	Analyse materials for suitability in electrical equipment	80
UEENEEH148A	Design and develop advanced digital systems	40
UEENEEH149A	Develop engineering solutions to audio electronic problems	60

UEENEEH158A	Design integrated security systems	40
UEENEEH159A	Design integrated complex security systems for multiple sites	60
UEENEEH181A	Design electronic printed circuit boards	40
UEENEEH182A	Develop engineering solutions to RF amplifiers problems	40
UEENEEH183A	Analyse the performance of wireless-based electronic - communication systems	40
UEENEEH189A	Design electronic printed circuit boards	40
UEENEEI156A	Develop and test code for microcontroller devices	60
UEENEEI157A	Configure and maintain industrial control system networks	60

Group E – Qualification Elective Units You must complete units to a minimum weighting of 280 You may select all your elective units from this Group		**Weighting Points**
UEENEED114A	Design and manage enterprise computer networks	80
UEENEED118A	Design and implement network systems for internetworking	120
UEENEED119A	Design and implement advanced routing for internetworking systems	100
UEENEED120A	Design and implement remote access for Internetworking systems	100
UEENEED121A	Design and implement multi-layer switching for Internetworking systems	100
UEENEED122A	Design and implement security for Internetworking systems	100
UEENEED123A	Design and implement wireless LANs/WANs for internetworking systems	100
UEENEED150A	Develop industrial control programs for microcomputer equipped devices	60

UEENEED151A	Provide programming solution for computer systems engineering problems	60
UEENEED152A	Design embedded controller control systems	80
UEENEEE127A	Use advanced computational processes to provide solutions to energy sector engineering problems	80
UEENEEE128A	Develop engineering solutions to photonic system problems	80
UEENEEH147A	Assess electronic apparatus compliance	60
UEENEEH160A	Plan large electronic projects	60
UEENEEH184A	Modify digital signal processing (DSP) based sub-systems	80
UEENEEH185A	Design signal-conditioning subsystems	80
UEENEEI154A	Design and use advanced programming tools PC networks and HMI Interfacing	120

Note:
1. Prerequisite 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 prerequisite 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.