Australian Government

UEE61111 Advanced Diploma of Automated Systems Maintenance Engineering

Release 4

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

UEE61111 Advanced Diploma of Automated Systems Maintenance Engineering

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
2	Edit		Edit Name to Reflect correct Unit Title UEENEEI124A Fault find and repair analogue circuits and components in electronic control systems	
2	Update	Group A	HLTCPR211A Perform CPR	10
2	Update	Group A	Edit Unit Code to reflect correct Unit Code TLILIC2001 Licence to operate a forklift truck	10
3	Edit	Group B	Edit Name to reflect correct Unit title UEENEEI102A Solve problems in pressure measurement components and systems	40
3	Edit	Group B	Edit Name to reflect correct Unit title UEENEEI103A Solve problems in density_level measurement components and systems	40
3	Edit	Group B	Edit Name to reflect correct Unit title UEENEEI104A Solve problems in flow measurement components and systems	40
3	Edit	Group B	Edit Name to reflect correct Unit title UEENEEI105A Solve problems in temperature measurement components and systems	40
3	Edit	Group B	Edit Name to reflect correct Unit title UEENEEI106A Set up and adjust PID control loops	40
3	Edit	Group B	Edit Name to reflect correct Unit title UEENEEI110A Set up and adjust advanced PID	40

			process control loops	
3	Edit	Group C	Edit Name to reflect correct Unit title UEENEEI151A Develop, enter and verify word and analogue control programs for programmable logic controllers.	60

4	Update	Elective	HLTAID001 - Provide cardiopulmonary resuscitation	10
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 UEENEEE119A - Solve problems in multiple path extra low voltage (ELV) a.c. circuits	40
4	Edit	Core	Correct title of UEENEEE125A - Provide engineering solutions for problems in complex multiple path circuits	60
4	Edit	Core	Correct title of UEENEEI136A - Manage automated control systems projects	40
4	Edit	Core	Correct title of UEENEEI137A - Plan automated and control systems projects	60
4	Edit	Core	Correct title of UEENEEI138A - Provide solutions to extra low voltage (ELV) electro-pneumatic control systems and drives	60
4	Edit	Core	Correct title of UEPOPS416B - Monitor the implementation of the enterprise's production-maintenance quality control procedures	20
4	Edit	Elective	Correct title of UEENEED101A - Use computer applications relevant to a workplace	20
4	Edit	Elective	Correct title of UEENEED102A - Assemble, set-up and test computing devices	80
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 UEENEEE128A - Develop engineering solutions to photonic system problems	80
4	Edit	Elective	Correct title of UEENEEE161A - Analyse static and dynamic parameters of electrical equipment	80
4	Edit	Elective	Correct title of UEENEEE162A - Select drive components for electrical equipment design	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 UEENEEG111A - Carry out basic repairs to electrical components and equipment	40
4	Edit	Elective	Correct title of UEENEEG131A - Evaluate performance of low voltage electrical apparatus	40
4	Edit	Elective	Correct title of UEENEEG143A - Develop engineering solution for synchronous machine and control problems	60
4	Edit	Elective	Correct title of UEENEEG144A - Develop engineering solutions for d.c. machine and control problems	60
4	Edit	Elective	Correct title of UEENEEG145A - Develop engineering solutions for induction machine and control problems	60
4	Edit	Elective	Correct title of UEENEEG161A - Design and develop modifications to LV electrical machines	60
4	Edit	Elective	Correct title of UEENEEG164A - Repair and maintain mechanical components of electrical machines	40
4	Edit	Elective	Correct title of UEENEEH102A - Repairs basic electronic apparatus faults by replacement of components	40
4	Edit	Elective	Correct title of UEENEEH111A - Troubleshoot single phase input d.c. power supplies	40
4	Edit	Elective	Correct title of UEENEEH147A - Assess electronic	60

			apparatus compliance	
4	Edit	Elective	Correct title of UEENEEH150A - Assemble and set up basic security systems	80
4	Edit	Elective	Correct title of UEENEEH184A - Modify digital signal processing (DSP) based sub-systems	80
4	Edit	Elective	Correct title of UEENEEH185A - Design signal-conditioning subsystems	80
4	Edit	Elective	Correct title of UEENEEH188A - Design and develop electronics - computer systems projects	40
4	Edit	Elective	Correct title of UEENEEI101A - Use instrumentation drawings, specification, standards and equipment manuals	40
4	Edit	Elective	Correct title of UEENEEI103A - Solve problems in density/level measurement components and systems	40
4	Edit	Elective	Correct title of UEENEEI107A - Install instrumentation and control cabling and tubing	20
4	Edit	Elective	Correct title of UEENEEI108A - Install instrumentation and control apparatus and associated equipment	20
4	Edit	Elective	Correct title of UEENEEI116A - Assemble, enter and verify operating instructions in microprocessor equipped devices	20
4	Edit	Elective	Correct title of UEENEEI119A - Set up industrial field control devices	60
4	Edit	Elective	Correct title of UEENEEI123A - Design electronic control systems	60
4	Edit	Elective	Correct title of UEENEEI126A - Provide solutions to pneumatic-hydraulic system operations	80
4	Edit	Elective	Correct title of UEENEEI128A - Set up and configure controls on complex fluid systems	80
4	Edit	Elective	Correct title of UEENEEI148A - Solve problems in single phase electronic power control circuits	60
4	Edit	Elective	Correct title of UEENEEI149A - Solve problems in polyphase electronic power control circuits	60

4	Edit	Elective	Correct title of UEENEEI154A - Design and use advanced programming tools PC networks and HMI Interfacing	120
4	Edit	Elective	Correct title of UEENEEP026A - Conduct in-service safety testing of electrical cord connected equipment and cord assemblies	20

Description

Scope
This qualification provides competencies to monitor/validate/evaluate automated equipment and systems, manage risk, develop and manage maintenance programs, and provide technical advice.

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 1040 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**
UEENEED104A	Use engineering applications software on personal computers	40
UEENEEE011C	Manage risk in electrotechnology activities	60
UEENEEE015B	Develop design briefs for electrotechnology projects	40
UEENEEE077B	Write specifications for automated systems 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
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

UEENEEE119A	Solve problems in multiple path extra low voltage (ELV) a.c. circuits	40
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
UEENEEI138A	Provide solutions to extra low voltage (ELV) electro-pneumatic control systems and drives	60
UEENEEI136A	Manage automated control systems projects	40
UEENEEI137A	Plan automated and control systems projects	60
UEENEEK132A	Develop strategies to address environmental and sustainability issues in the energy sector	20
UEPOPS202B	Apply Quality Systems To Work	20
UEPOPS337B	Maintain Quality Systems within the Team	20
UEPOPS416B	Monitor the implementation of the enterprise's production-maintenance quality control procedures	20
Total points in core		**1120**

Elective Competency Standard Units Complete Elective units to achieve a total of weighting of 1040 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	280
C	**Qualification Elective Units**	0	220
D	**Qualification Elective Units**	0	220
E	**Qualification Elective Units** You may select all your elective units from this Group	320	1040

Group A – Imported and Common Elective Units You may complete units to a maximum weighting of 360		**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
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
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	20

UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
BSBCUS401B	Coordinate implementation of customer service strategies	40
BSBINM401A	Implement workplace information system	40
BSBLED401A	Develop teams and individuals	40
BSBMGT402A	Implement operational plan	40
BSBMGT403A	Implement continuous improvement	40
BSBWOR401A	Establish effective workplace relationships	50
BSBWOR404A	Develop Work Priorities	40
TLILIC2001A	Licence to operate a forklift truck	40
HLTAID001	Provide cardiopulmonary resuscitation	10
	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 280		**Weighting Points**
UEENEED102A	Assemble, set-up and test computing devices	80
UEENEED146A	Set up and configure basic local area network (LAN)	80
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
UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services	120
UEENEEF104A	Install and modify performance data communication copper cabling	40
UEENEEF108A	Select and arrange equipment for wireless communication networks	40
UEENEEG006A	Solve problems in single and three phase low voltage machines	80
UEENEEG101A	Solve problems in electromagnetic devices and related circuits	60
UEENEEG102A	Solve problems in low voltage a.c. circuits	80
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits	40
UEENEEG111A	Carry out basic repairs to electrical components and equipment	40
UEENEEG164A	Repair and maintain mechanical components of electrical machines	40
UEENEEG181A	Provide advice on effective and energy efficient lighting products	20
UEENEEG182A	Supply effective and efficient lighting products for domestic and small commercial applications	40
UEENEEG183A	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect	20

UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40
UEENEEH111A	Troubleshoot single phase input d.c. power supplies	40
UEENEEH150A	Assemble and set up basic security systems	80
UEENEEI101A	Use instrumentation drawings, specification, standards and equipment manuals	40
UEENEEI102A	Solve problems in pressure measurement components and systems	40
UEENEEI103A	Solve problems in density/level measurement components and systems	40
UEENEEI104A	Solve problems in flow measurement components and systems	40
UEENEEI105A	Solve problems in temperature measurement components and systems	40
UEENEEI106A	Set up and adjust PID control loops	40
UEENEEI107A	Install instrumentation and control cabling and tubing	20
UEENEEI108A	Install instrumentation and control apparatus and associated equipment	20
UEENEEI110A	Set up and adjust advanced PID process control loops	40
UEENEEI111A	Find and rectify faults in process final control elements	40
UEENEEI112A	Verify compliance and functionality of instrumentation and control installations	40
UEENEEI113A	Setup and configure human-machine interface (HMI) and industrial networks	60
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20

UEENEEP024A	Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply	20
UEENEEP025A	Attach cords, cables and plugs to electrical equipment for connection to 1000 Va.c. or 1500 Vd.c. supply	20
UEENEEP026A	Conduct in-service safety testing of electrical cord connected equipment and cord assemblies	20

Group C – Qualification Elective Units You may complete units to a maximum weighting of 220		**Weighting Points**
UEENEEC005B	Estimate electrotechnology projects	40
UEENEEE192A	Produce detailed electrotechnology /utilities drawings using computer aided design equipment and software	60
UEENEEG179A	Develop detailed electrical drawings	60
UEENEEI119A	Set up industrial field control devices	60
UEENEEI120A	Provide solutions to problems in industrial control systems	60
UEENEEI124A	Fault find and repair analogue circuits and components in electronic control systems	60
UEENEEI125A	Provide solutions to fluid circuit operations	60
UEENEEI126A	Provide solutions to pneumatic-hydraulic system operations	80
UEENEEI139A	Diagnose and rectify faults in digital controls systems	60
UEENEEI148A	Solve problems in single phase electronic power control circuits	60
UEENEEI149A	Solve problems in polyphase electronic power control circuits	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
UEENEEI155A	Develop structured programs to control external	40

	devices	

Group D – Qualification Elective Units You may complete units to a maximum weighting of 220		**Weighting Points**
UEENEEC006B	Prepare tender submissions for electrotechnology projects	60
UEENEEE110A	Develop and implement energy sector maintenance programs	60
UEENEEG131A	Evaluate performance of low voltage electrical apparatus	40
UEENEEG149A	Provide engineering solutions to problems in complex polyphase power circuits	60
UEENEEG180A	Develop detailed and complex drawings for electrical systems using CAD systems	60
UEENEEI127A	Analyse complex electronic circuits controlling fluids	80
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
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 320 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
UEENEEE128A	Develop engineering solutions to photonic system problems	80

UEENEEE160A	Provide engineering solutions for uses of materials and thermodynamic effects	80
UEENEEE161A	Analyse static and dynamic parameters of electrical equipment	80
UEENEEE162A	Select drive components for electrical equipment design	80
UEENEEE163A	Analyse materials for suitability in electrical equipment	80
UEENEEE164A	Design electrical machine drives and production layout plans	80
UEENEEE078B	Contribute to risk management in electrotechnology systems	20
UEENEEG143A	Develop engineering solution for synchronous machine and control problems	60
UEENEEG144A	Develop engineering solutions for d.c. machine and control problems	60
UEENEEG145A	Develop engineering solutions for induction machine and control problems	60
UEENEEG160A	Evaluate performance of LV electrical machines	40
UEENEEG161A	Design and develop modifications to LV electrical machines	60
UEENEEH147A	Assess electronic apparatus compliance	60
UEENEEH184A	Modify digital signal processing (DSP) based sub-systems	80
UEENEEH185A	Design signal-conditioning subsystems	80
UEENEEH188A	Design and develop electronics - computer systems projects	40
UEENEEI123A	Design electronic control systems	60
UEENEEI128A	Set up and configure controls on complex fluid systems	80
UEENEEI129A	Set up electronically controlled mechanically operated complex systems	80

UEENEEI130A	Set up electronically controlled robotically operated complex systems	80
UEENEEI153A	Design and configure Human-Machine Interface (HMI) networks	60
UEENEEI154A	Design and use advanced programming tools PC networks and HMI Interfacing	120

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.