

**Victorian Purchasing Guide  
for the  
UEE11 Electrotechnology Training Package  
Version No 1  
September 2012**





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## Victorian Purchasing Guide — Version History

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UEE11 Version 1	21 September 2012	Initial Release of the UEE11 Electrotechnology Training Package Version 1

# UEE11 Electrotechnology Training Package Victorian Purchasing Guide

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## INTRODUCTION

### ***What is a Victorian Purchasing Guide?***

The Victorian Purchasing Guide provides information for use by Registered Training Organisations (RTOs) in the provision of Victorian government subsidised training.

Specifically the Victorian Purchasing Guide provides the following information related to the delivery of nationally endorsed Training Packages in Victoria:

- The nominal hour range (minimum-maximum) available for each qualification.
- Nominal hours for each unit of competency within the Training Package.
- Sample Training Programs

### ***Registration***

RTOs must be registered by either the Victorian Registration and Qualifications Authority (VRQA) or the Australian Skills Qualification Authority (ASQA) regulatory body to be eligible to issue qualifications and statements of attainment under the Australian Quality Framework (AQF).

The VRQA is the regulatory authority for Victoria that registers VET training organisations who provide courses to domestic students only and who only offer training in Victoria.

To register to provide training to international students and in other Australian states and territories you will need to apply with ASQA.

## QUALIFICATIONS

Code	Title	Qualification Nominal Hour Range	
		Minimum	Maximum
UEE10111	Certificate I in ElectroComms Skills	180	180
UEE20111	Certificate II in Split Air-conditioning and Heat Pumps Systems	360	360
UEE20411	Certificate II in Winding and Assembly	360	360
UEE20511	Certificate II in Computer Assembly and Repair	360	360
UEE20711	Certificate II in Data and Voice Communications	420	420
UEE20811	Certificate II in Electrical Wholesaling	380	380
UEE20911	Certificate II in Electronic Assembly	360	360
UEE21011	Certificate II in Fire Alarms Servicing	360	360
UEE21211	Certificate II in Antennae Equipment	360	360
UEE21311	Certificate II in Remote Area Essential Service	360	360
UEE21411	Certificate II in Remote Area Power Supply Maintenance	360	360
UEE21611	Certificate II in Security Assembly and Set-up	360	360
UEE21711	Certificate II in Technical Support	360	360
UEE21911	Certificate II in Electronics	360	360
UEE22011	Certificate II in Electrotechnology (Career Start)	380	380
UEE22111	Certificate II in Sustainable Energy (Career Start)	420	420
UEE30111	Certificate III in Business Equipment	1020	1020
UEE30211	Certificate III in Computer Systems Equipment	1020	1020
UEE30311	Certificate III in Custom Electronics Installations	980	980
UEE30411	Certificate III in Data and Voice Communications	1020	1020
UEE30611	Certificate III in Electrical Machine Repair	1100	1100
UEE30711	Certificate III in Switchgear and Controlgear	1100	1100
UEE30811	Certificate III in Electrotechnology Electrician	1100	1100
UEE30911	Certificate III in Electronics and Communications	1020	1020
UEE31011	Certificate III in Fire Protection Control	1020	1020
UEE31111	Certificate III in Gaming Electronics	1020	1020
UEE31211	Certificate III in Instrumentation and Control	1020	1020
UEE31411	Certificate III in Security Equipment	1020	1020

Code	Title	Qualification Nominal Hour Range	
		Minimum	Maximum
UEE31511	Certificate III in Rail – Communications and Networks	1020	1020
UEE32011	Certificate III in Renewable Energy - ELV	1020	1020
UEE32111	Certificate III in Appliance Service	1020	1020
UEE32211	Certificate III in Air-conditioning and Refrigeration	1080	1080
UEE33011	Certificate III in Electrical Fitting	1160	1160
UEE40111	Certificate IV in Computer Systems	1280	1280
UEE40211	Certificate IV in Electrical – Data and Voice Communications	1360	1360
UEE40311	Certificate IV in Installation Inspection and Audits	1360	1360
UEE40411	Certificate IV in Electrical – Instrumentation	1360	1360
UEE40511	Certificate IV in Electrical – Air-conditioning Split Systems	1370	1370
UEE40611	Certificate IV in Electrotechnology – Systems Electrician	1360	1360
UEE40711	Certificate IV in Electronics and Communications	1280	1280
UEE40811	Certificate IV in Electrical – Fire Protection Control Systems	1360	1360
UEE40911	Certificate IV in Industrial Electronics and Control	1360	1360
UEE41011	Certificate IV in Energy Management and Control	1360	1360
UEE41111	Certificate IV in Electrical – Lift Systems	1360	1360
UEE41211	Certificate IV in Electrical – Rail Signalling	1320	1320
UEE41511	Certificate IV in Video and Audio Systems	1280	1280
UEE41611	Certificate IV in Renewable Energy	920	920
UEE41711	Certificate IV in Rail – Communications and Network Systems	1280	1280
UEE41911	Certificate IV in Electrical – Renewable Energy	1380	1380
UEE42011	Certificate IV in Electrical – Photovoltaic systems	1380	1380
UEE42111	Certificate IV in Electrotechnology – Electrical Contracting	1280	1280
UEE42211	Certificate IV in Instrumentation and Control	1280	1280
UEE42611	Certificate IV in Hazardous areas - Electrical	1360	1360
UEE42711	Certificate IV in Air-conditioning and Refrigeration Servicing	1280	1280
UEE42811	Certificate IV in Air-conditioning Systems Energy Management and Control	1280	1280

Code	Title	Qualification Nominal Hour Range	
		Minimum	Maximum
UEE42911	Certificate IV in Refrigeration and Air-conditioning Systems	1280	1280
UEE43011	Certificate IV in Electrical Equipment and Systems	1320	1320
UEE43111	Certificate IV in Energy Efficiency and Assessment	1360	1360
UEE43211	Certificate IV in Industrial Automation and Control	1300	1300
UEE50111	Diploma of Computer Systems Engineering	1600	1600
UEE50211	Diploma of Electrical and Instrumentation	1680	1680
UEE50311	Diploma of Electrical and Refrigeration and Air-conditioning	1820	1820
UEE50411	Diploma of Electrical Engineering	1680	1680
UEE50511	Diploma of Electronics and Communications Engineering	1600	1600
UEE50711	Diploma of Renewable Energy Engineering	1680	1680
UEE50811	Diploma of Research and Development	1440	1440
UEE50911	Diploma of Industrial Electronics and Control Engineering	1680	1680
UEE51011	Diploma of Instrumentation and Control Engineering	1600	1600
UEE51111	Diploma of Engineering Technology - Refrigeration and Air-conditioning	1550	1550
UEE51211	Diploma of Air-conditioning and Refrigeration Engineering	1600	1600
UEE53011	Diploma of Electrical Systems Engineering	1660	1660
UEE60211	Advanced Diploma of Electronics and Communications Engineering	2160	2160
UEE60411	Advanced Diploma of Computer Systems Engineering	2160	2200
UEE60611	Advanced Diploma of Industrial Electronics and Control Engineering	2140	2140
UEE60911	Advanced Diploma of Renewable Energy Engineering	2140	2140
UEE61111	Advanced Diploma of Automated Systems Maintenance Engineering	2080	2080
UEE61211	Advanced Diploma of Engineering – Explosion protection	2080	2080
UEE61511	Advanced Diploma of Instrumentation and Control Engineering	2060	2060
UEE61711	Advanced Diploma of Engineering Technology - Electronics	1920	1990
UEE61811	Advanced Diploma of Engineering Technology - Computer Systems	1860	1930



Code	Title	Qualification Nominal Hour Range	
		Minimum	Maximum
UEE62011	Advanced Diploma of Engineering Technology - Renewable Energy	2040	2110
UEE62111	Advanced Diploma of Engineering Technology - Electrical	2000	2170
UEE62211	Advanced Diploma of Electrical – Engineering	2100	2100
UEE62311	Advanced Diploma of Electrical Engineering – Coal Mining	2100	2100
UEE62411	Advanced Diploma of Engineering Technology – Air-conditioning and Refrigeration	2050	2050
UEE62511	Advanced Diploma of Air-conditioning and Refrigeration Engineering	2060	2060
UEE63011	Advanced Diploma of Electrical Systems Engineering	2100	2100

## UNITS OF COMPETENCY AND NOMINAL HOURS

RTOs are advised that there is a mapping inside the Training Package that describes the relationship between new units and superseded or replaced units from the previous version of **UEE11 Electrotechnology Training Package**. Information regarding transition arrangements can be obtained from the state or national VET Regulating Authority (see Contacts and Links section).

You must be sure that all training and assessment leading to qualifications or Statements of Attainment from the **UEE11 Electrotechnology Training Package** is conducted against the Training Package units of competency and complies with the requirements in the assessment guidelines.

### Listing of the Units of Competency and Nominal Hours

Unit Code	Unit Title	Nominal Hours
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
UEENEEA107A	Make up wiring looms for internal wiring of appliances and machinery	40
UEENEEA110A	Assemble, mount and connect control gear and switchgear	120
UEENEEA112A	Fabricate and assemble bus bars	60
UEENEEA113A	Mount and wire control panel equipment	60
UEENEEB101A	Operate and maintain amateur radio communication stations	40
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
UEENEEC004B	Prepare specifications for the supply of materials and equipment for electrotechnology projects	40
UEENEEC005B	Estimate electrotechnology projects	40
UEENEEC006B	Prepare tender submissions for electrotechnology projects	60
UEENEEC007B	Manage contract variations	40
UEENEEC008B	Receive and store materials and equipment for electrotechnology work	20
UEENEEC009B	Provide quotations for inspection and compliance audit services	40
UEENEEC010B	Deliver a service to customers	20
UEENEEC012B	Direct technical and non-technical enquiries to appropriate personnel	20
UEENEEC013B	Participate in business equipment work and competency development activities	20
UEENEEC014B	Participate in computer equipment work and competency development activities	20
UEENEEC016B	Participate in voice and data communications work and competency development activities	20

Unit Code	Unit Title	Nominal Hours
UEENEEC017B	Participate in appliance servicing work and competency development activities	20
UEENEEC018B	Participate in electrical machine repair work and competency development activities	20
UEENEEC019B	Participate in switchgear and controlgear work and competency development activities	20
UEENEEC020B	Participate in electrical work and competency development activities	20
UEENEEC021B	Participate in electronics and communications work and competency development activities	20
UEENEEC022B	Participate in fire protection control work and competency development activities	20
UEENEEC023B	Participate in gaming electronic work and competency development activities	20
UEENEEC024B	Participate in instrumentation and control work and competency development activities	20
UEENEEC025B	Participate in refrigeration and air conditioning work and competency development activities	20
UEENEEC026B	Participate in security equipment work and competency development activities	20
UEENEEC027B	Participate in rail communications and networks work and competency development activities	20
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEED102A	Assemble, set-up and test computing devices	80
UEENEED103A	Evaluate and modify object oriented code programs	40
UEENEED104A	Use engineering applications software on personal computers	40
UEENEED110A	Set up, create and implement content for a web server	120
UEENEED111A	Develop, implement and test object oriented code	140
UEENEED112A	Support computer hardware and software for engineering applications	120
UEENEED113A	Install and administer Unix based networked computers	80
UEENEED114A	Design and manage enterprise computer networks	80
UEENEED115A	Administer computer networks	80
UEENEED116A	Develop computer network services	120
UEENEED117A	Install and configure network systems for internetworking	120
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

Unit Code	Unit Title	Nominal Hours
UEENEED124A	Integrate multiple computer operating systems on a client server local area network	80
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
UEENEED144A	Commission industrial computer systems	20
UEENEED145A	Modify-redesign of industrial computer systems	20
UEENEED146A	Set up and configure basic local area network (LAN)	40
UEENEED147A	Develop energy sector directory services	80
UEENEED148A	Plan industrial computer systems projects	60
UEENEED149A	Develop energy sector computer network applications infrastructure	80
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
UEENEED153A	Set up, configure and test biometric devices	40
UEENEED154A	Analyse and implement biometric measuring techniques and applications	120
UEENEED155A	Develop and validate biometric equipment/systems installation	120
UEENEEE006B	Apply methods to maintain currency of industry developments	20
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	20
UEENEEE011C	Manage risk in electrotechnology activities	60
UEENEEE012B	Manage electrotechnology projects	40
UEENEEE013B	Plan electrotechnology projects	60
UEENEEE015B	Develop design briefs for electrotechnology projects	40
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
UEENEEE038B	Participate in development and follow a personal competency development plan	20
UEENEEE070B	Write specifications for computer systems engineering projects	40
UEENEEE071B	Write specifications for electrical engineering projects	40
UEENEEE072B	Write specifications for electronics and communications engineering projects	40
UEENEEE073B	Write specifications for refrigeration and air conditioning engineering projects	40
UEENEEE074B	Write specifications for renewable energy engineering projects	40
UEENEEE075B	Write specifications for industrial electronics and control projects	40
UEENEEE077B	Write specifications for automated systems projects	40
UEENEEE078B	Contribute to risk management in electrotechnology systems	20

Unit Code	Unit Title	Nominal Hours
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	20
UEENEEE084A	Write specifications for electrotechnology engineering projects	40
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40
UEENEEE103A	Solve problems in ELV single path circuits	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
UEENEEE108A	Lay wiring/cablings and terminate accessories for extra-low voltage (ELV) circuits	40
UEENEEE110A	Develop and implement energy sector maintenance programs	60
UEENEEE114A	Supervise and coordinate energy sector work activities	40
UEENEEE117A	Implement and monitor energy sector OHS policies and procedures	20
UEENEEE118A	Establish, maintain and evaluate energy sector OHS systems	60
UEENEEE119A	Solve problems in multiple path extra low voltage (ELV) a.c. 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
UEENEEE124A	Compile and produce an energy sector detailed report	60
UEENEEE125A	Provide engineering solutions for problems in complex multiple path circuit	60
UEENEEE126A	Provide solutions to basic engineering computational problems	60
UEENEEE127A	Use advanced computational processes to provide solutions to energy sector engineering problems	120
UEENEEE128A	Develop engineering solutions to photonic system problems	80
UEENEEE129A	Solve electrotechnical engineering problems	60
UEENEEE130A	Provide solutions and report on routine electrotechnology problems	60
UEENEEE131A	Solve problems in ELV circuits for non electrical workers	40
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work	20
UEENEEE141A	Use of routine equipment/plant/technologies in an energy sector environment	60
UEENEEE142A	Produce products for carrying out energy sector work activities	80

Unit Code	Unit Title	Nominal Hours
UEENEEE143A	Produce routine tools/devices for carrying out energy sector work activities	120
UEENEEE144A	Apply technologies and concepts to energy sector work activities	120
UEENEEE145A	Apply computation when using equipment/materials/concepts in an energy sector environment	160
UEENEEE146A	Identify effects of energy on machinery and materials in an energy sector environment	120
UEENEEE147A	Identify building techniques, methods and materials used in energy sector work activities	60
UEENEEE148A	Carry out routine work activities in an energy sector environment	40
UEENEEE149A	Contribute to the operation of support plant and equipment used in electricity supply industry	120
UEENEEE150A	Undertake computations in an energy sector environment	120
UEENEEE151A	Transport apparatus, equipment and materials	60
UEENEEE152A	Observe safety practices are followed in the vicinity of isolated electrical cables	20
UEENEEE160A	Provide engineering solutions for uses of materials and thermodynamic effects	100
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
UEENEEE179A	Identify and select components, accessories and materials for energy sector work activities	20
UEENEEE185A	Write work activity reports	20
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
UEENEEE192A	Produce detailed electrotechnology /utilities drawings using computer aided design equipment and software	60
UEENEEF101A	Install and connect cabling for direct access to telecommunications service	20
UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services	120
UEENEEF103A	Install and maintain telecommunication cabling for services in lifts	40
UEENEEF104A	Install and modify performance data communication copper cabling	40
UEENEEF105A	Install and modify optical fibre performance data communication cabling	40
UEENEEF106A	Solve problems in voice and data communications circuits	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	60

Unit Code	Unit Title	Nominal Hours
UEENEEF109A	Install and connect data and voice communication equipment	60
UEENEEF110A	Select and arrange data and voice equipment for local area networks	120
UEENEEF111A	Test, report and rectify faults in data and voice installations	60
UEENEEF112A	Install aerial telecommunication cables	40
UEENEEF113A	Install underground communication cables	40
UEENEEF114A	Set up and configure basic data communication systems	40
UEENEEF115A	Assemble and connect telecommunication frames and cabinets	60
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
UEENEEG076A	Install and replace low voltage current transformer metering	20
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	60
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits	40
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations	80
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	80
UEENEEG109A	Develop and connect electrical control circuits	80
UEENEEG110A	Find and repair faults in LV d.c. electrical apparatus and circuits	60
UEENEEG111A	Carry out basic repairs to electrical components and equipment	40
UEENEEG113A	Install and maintain emergency safety systems	60
UEENEEG116A	Diagnose and rectify faults in traction lift systems	80
UEENEEG118A	Maintain operation of electrical mining equipment and systems	60
UEENEEG119A	Maintain operation of electrical marine equipment and systems	60
UEENEEG120A	Select and arrange equipment for special LV electrical installations	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



Unit Code	Unit Title	Nominal Hours
UEENEEG125A	Plan electrical installations with a low voltage demand up to 400 A per phase	40
UEENEEG126A	Install and maintain field power and distribution systems with a low voltage demand up to 200 A per phase	40
UEENEEG127A	Design electrical installations with a low voltage demand greater than 400 A per phase	40
UEENEEG128A	Plan low voltage switchboard and control panel layouts	40
UEENEEG129A	Overhaul and repair major switchgear and controlgear	60
UEENEEG130A	Design switchboards rated for high fault levels (greater than 400 A)	60
UEENEEG131A	Evaluate performance of low voltage electrical apparatus	40
UEENEEG132A	Carry out low voltage electrical field testing and report findings	60
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
UEENEEG149A	Provide engineering solutions to problems in complex polyphase power circuits	60
UEENEEG150A	Wind electrical coils	40
UEENEEG151A	Place and connect electrical coils	40
UEENEEG152A	Rewind single phase machines	120
UEENEEG153A	Rewind three phase low voltage induction machines	120
UEENEEG154A	Rewind LV direct current machines	120
UEENEEG155A	Rewind HV three phase induction machines rated for voltages to 3.3 kV	60
UEENEEG156A	Rewind HV three phase induction machines rated for voltages above 3.3 kV	60
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
UEENEEG160A	Evaluate performance of LV electrical machines	40
UEENEEG161A	Design and develop modifications to LV electrical machines	60
UEENEEG162A	Set up and place LV electrical apparatus and associated circuits into service	40
UEENEEG164A	Repair and maintain mechanical components of electrical machines	60
UEENEEG165A	Maintain and service traction lifts systems and equipment	40
UEENEEG166A	Install and maintain escalators, moving walks and treadways	40
UEENEEG167A	Align and install traction lift equipment	40
UEENEEG168A	Diagnose and rectify faults in complex lift systems	40
UEENEEG169A	Manage large electrical projects	40



Unit Code	Unit Title	Nominal Hours
UEENEEG170A	Plan large electrical projects	60
UEENEEG171A	Install, set up and commission interval metering	20
UEENEEG172A	Investigate and report on electrical incidents and causes	60
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
UEENEEG180A	Develop detailed and complex drawings for electrical systems using CAD systems	80
UEENEEG181A	Provide advice on effective and energy efficient lighting products	40
UEENEEG182A	Supply effective and efficient lighting products for domestic and small commercial applications	20
UEENEEG183A	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect	20
UEENEEG184A	Provide photometric data for illumination system design	80
UEENEEG185A	Select effective and efficient light sources and luminaires for given locations and designs	60
UEENEEG186A	Design effective and efficient lighting for residential and commercial buildings	60
UEENEEG187A	Design effective and efficient lighting for public, open and sports areas	60
UEENEEG188A	Prepare quotations for the supply of effective and efficient lighting products for lighting projects	40
UEENEEG189A	Install and maintain emergency lighting systems	60
UEENEEG197A	Apply currency of safe working practices and compliance verification of electrical installations	20
UEENEEG198A	Apply compliance requirements to all aspects of electrical work	20
UEENEEG199A	Conduct compliance and functional verification of electrical apparatus and existing circuits	40
UEENEEH101A	Repair basic computer equipment faults by replacement of modules/sub-assemblies	40
UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	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
UEENEEH108A	Assemble and install reception antennae and signal distribution equipment	60
UEENEEH109A	Set up and test gaming and game equipment	60
UEENEEH110A	Install commercial video/audio system components	120

Unit Code	Unit Title	Nominal Hours
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
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
UEENEEH121A	Fault find and repair high volume office equipment	120
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
UEENEEH127A	Set up and adjust commercial radio frequency (RF) transmission and reception systems	60
UEENEEH128A	Install and test microwave antennae and waveguides	60
UEENEEH129B	Fault find and repair navigation systems	60
UEENEEH130A	Fault find and repair satellite-based surveillance and observation systems	60
UEENEEH131A	Fault find and repair radar apparatus and systems	120
UEENEEH132A	Fault find and repair global positioning systems	60
UEENEEH133A	Fault find and repair telecommunication apparatus and systems	60
UEENEEH134A	Fault find and repair electronic medical equipment	120
UEENEEH135A	Design custom electronic equipment installations	120
UEENEEH136A	Design commercial video/audio installations	120
UEENEEH137A	Program and commission commercial video/audio systems	40
UEENEEH138A	Fault find and repair complex power supplies	40
UEENEEH139A	Troubleshoot basic amplifier circuits	40
UEENEEH140A	Fault find and repair sonar apparatus and systems	120
UEENEEH141A	Manage computer systems/electronics projects	40
UEENEEH142A	Solve oscillator problems	40
UEENEEH145A	Develop engineering solutions to analogue electronic problems	80
UEENEEH146A	Solve fundamental electronic communications system problems	40
UEENEEH147A	Assess electronic apparatus compliance	60
UEENEEH148A	Design and develop advanced digital systems	40
UEENEEH149A	Develop engineering solutions to audio electronic problems	60
UEENEEH150A	Assemble and set up basic security systems	80

Unit Code	Unit Title	Nominal Hours
UEENEEH151A	Install large security systems	100
UEENEEH152A	Enter instructions and test wired and wireless security systems	40
UEENEEH153A	Program and test large security systems	120
UEENEEH154A	Program and commission commercial security systems	60
UEENEEH155A	Program and commission commercial access control security systems	60
UEENEEH156A	Program and commission commercial security closed circuit television systems	60
UEENEEH157A	Develop basic plans for integrating security systems	40
UEENEEH158A	Design integrated security systems	40
UEENEEH159A	Design integrated complex security systems for multiple sites	60
UEENEEH160A	Plan large electronic projects	60
UEENEEH161A	Install fire detection and warning system apparatus	40
UEENEEH162A	Verify compliance and functionality of fire protection system installations	60
UEENEEH163A	Enter and verify programs for fire protection systems	40
UEENEEH164A	Commission large fire protection systems	40
UEENEEH165A	Troubleshoot fire protection systems	40
UEENEEH166A	Troubleshoot microcontroller based hardware systems	40
UEENEEH167A	Commission electronics and communications systems	20
UEENEEH168A	Modify/redesign of electronics and communications systems	20
UEENEEH169A	Solve problems in basic electronic circuits	100
UEENEEH171A	Troubleshoot faults in television receivers	120
UEENEEH172A	Troubleshoot communication systems	80
UEENEEH173A	Troubleshoot professional audio reproduction components	120
UEENEEH174A	Troubleshoot audio/video recording equipment	120
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
UEENEEH180A	Diagnose and rectify faults in digital transmission circuits and systems	80
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
UEENEEH184A	Modify digital signal processing (DSP) based sub-systems	80
UEENEEH185A	Design signal-conditioning subsystems	80
UEENEEH186A	Commission satellite and microwave communication systems	40

Unit Code	Unit Title	Nominal Hours
UEENEEH187A	Solve problems in electronic musical equipment circuits	40
UEENEEH188A	Design and develop electronics/ computer systems projects	40
UEENEEH189A	Provide Gate Array solutions for complex electronics systems	60
UEENEEH190A	Provide engineering solutions to air traffic control system problems	40
UEENEEH191A	Diagnose and rectify faults in air navigation circuits and systems	120
UEENEEH192A	Develop solutions for air surveillance apparatus and systems	120
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
UEENEEI114A	Trouble shoot process control systems	60
UEENEEI115A	Trouble shooting in medical equipment control systems	120
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20
UEENEEI117A	Calibrate, adjust and test measuring instruments	40
UEENEEI118A	Set up weighting measuring and control instruments	20
UEENEEI119A	Set up industrial field control devices	60
UEENEEI120A	Provide solutions to problems in industrial control systems	60
UEENEEI121A	Trouble shoot in measuring and analysis systems	40
UEENEEI122A	Assist in commissioning process and instrumentation control systems	40
UEENEEI123A	Design electronic 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
UEENEEI127A	Analyse complex electronic circuits controlling fluids	80

Unit Code	Unit Title	Nominal Hours
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
UEENEEI131A	Set up gas analysis measuring and control instruments	20
UEENEEI132A	Set up water analysis measuring and control instruments	20
UEENEEI133A	Set up scientific analysis measuring and control instruments	20
UEENEEI134A	Manage instrumentation and control projects	40
UEENEEI135A	Plan instrumentation and control projects	60
UEENEEI136A	Manage automated control systems projects	40
UEENEEI137A	Plan automated and control systems projects	60
UEENEEI138A	Provide solutions to extra low voltage (ELV) electro-pneumatic control systems and drives	60
UEENEEI139A	Diagnose and rectify faults in digital controls systems	60
UEENEEI140A	Plan the electrical installation of integrated systems	20
UEENEEI141A	Develop electrical integrated systems	20
UEENEEI142A	Develop an electrical integrated system interface for access through a touch screen	20
UEENEEI143A	Develop access control of electrical integrated systems using logic-based programming tools	20
UEENEEI144A	Develop interfaces for multiple access methods to monitor, schedule and control an electrical integrated system	20
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
UEENEEI148A	Solve problems in single phase electronic power control circuits	60
UEENEEI149A	Solve problems in polyphase electronic power control circuits	60
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	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
UEENEEI153A	Design and configure Human-Machine Interface (HMI) networks	60
UEENEEI154A	Design and use advanced programming tools PC networks and HMI Interfacing	120
UEENEEI155A	Develop structured programs to control external devices	40
UEENEEI156A	Develop and test code for microcontroller devices	60
UEENEEI157A	Configure and maintain industrial control system networks	60
UEENEEJ040B	Manage refrigeration and air conditioning projects	40
UEENEEJ069B	Plan refrigeration and air conditioning projects	60

Unit Code	Unit Title	Nominal Hours
UEENEEJ102A	Prepare and connect refrigerant tubing and fittings	40
UEENEEJ103A	Establish the basic operating conditions of vapour compression systems	60
UEENEEJ104A	Establish the basic operating conditions of air conditioning systems	20
UEENEEJ105A	Position, assemble and start up single head split air conditioning and water heating heat pump systems	70
UEENEEJ106A	Install refrigerant pipe work, flow controls and accessories	60
UEENEEJ107A	Install air conditioning and refrigeration systems, major components and associated equipment	80
UEENEEJ108A	Recover, pressure test, evacuate, charge and leak test refrigerants	60
UEENEEJ109A	Verify functionality and compliance of refrigeration and air conditioning installations	20
UEENEEJ110A	Select refrigerant piping, accessories and associated controls	60
UEENEEJ111A	Diagnose and rectify faults in air conditioning and refrigeration systems and components	40
UEENEEJ112A	Diagnose and rectify faults in complex air conditioning/ refrigeration systems	100
UEENEEJ113A	Commission air conditioning and refrigeration systems	40
UEENEEJ114A	Resolve problems in hydronic systems	40
UEENEEJ115A	Resolve problems in beverage dispensers	40
UEENEEJ116A	Resolve problems in transport refrigeration systems	20
UEENEEJ117A	Resolve problems in ultra-low temperature refrigeration systems	20
UEENEEJ118A	Resolve problems in post mix refrigeration systems	20
UEENEEJ119A	Resolve problems in ice making systems	20
UEENEEJ120A	Resolve problems in industrial refrigeration systems	20
UEENEEJ121A	Monitor and adjust refrigeration energy management systems	40
UEENEEJ122A	Diagnose faults in complex HVAC /refrigeration control systems	80
UEENEEJ123A	Commission complex (HVAC) heating, ventilation and air conditioning systems	80
UEENEEJ124A	Commission refrigeration/air conditioning hydronic systems	80
UEENEEJ125A	Commission complex refrigeration systems and equipment	80
UEENEEJ126A	Commission complex refrigeration/air conditioning control systems	80
UEENEEJ127A	Establish the thermodynamic parameters of refrigeration and air conditioning systems	80
UEENEEJ128A	Produce HVAC/R system design drawings	80
UEENEEJ129A	Establish heat loads for commercial refrigeration and/or air conditioning applications	80
UEENEEJ130A	Produce HVAC/R control system diagrams	40
UEENEEJ131A	Determine noise and vibration encountered in HVAC/R applications	40
UEENEEJ132A	Design commercial refrigeration systems and select components	80

Unit Code	Unit Title	Nominal Hours
UEENEEJ133A	Design industrial refrigeration systems and select components	80
UEENEEJ134A	Design heating, ventilation and air conditioning (HVAC) systems and select components	60
UEENEEJ135A	Design control systems for refrigeration or heating, ventilation and air conditioning systems	80
UEENEEJ136A	Evaluate and report on building services energy management systems	80
UEENEEJ137A	Evaluate and report on the indoor air quality of buildings	40
UEENEEJ138A	Analyse vibration and noise in refrigeration and air conditioning systems	80
UEENEEJ139A	Develop specifications and prepare drawings for HVAC/Refrigeration projects	60
UEENEEJ141A	Design complex commercial refrigeration systems and select equipment	40
UEENEEJ142A	Design complex industrial refrigeration systems and select equipment	40
UEENEEJ143A	Design complex air conditioning systems and select equipment	120
UEENEEJ144A	Design mechanical ventilation/exhaust systems and select equipment	40
UEENEEJ145A	Design hydronic systems and select equipment	80
UEENEEJ146A	Design complex control systems for refrigeration, heating, ventilation or air conditioning systems	80
UEENEEJ147A	Audit energy use for commercial HVAC/Refrigeration systems	40
UEENEEJ148A	Audit HVAC/R control systems for compliance with regulations and standards	60
UEENEEJ149A	Develop heat exchanger design specifications	80
UEENEEJ150A	Evaluate new and alternative technologies applicable to electrotechnology applications	40
UEENEEJ151A	Service small electrical appliances and power tools	60
UEENEEJ153A	Find and rectify faults in motors and associated controls in refrigeration and air conditioning systems	60
UEENEEJ154A	Find and rectify faults in appliance control systems and devices	60
UEENEEJ155A	Service refrigeration appliances	60
UEENEEJ156A	Service clothes washing machines and dryers	40
UEENEEJ157A	Service electrical heating appliances	60
UEENEEJ158A	Service dishwasher machines	40
UEENEEJ159A	Service gas heating appliances	40
UEENEEJ161A	Verify functionality and compliance of appliances	20
UEENEEJ162A	Recover, pressure test, evacuate, charge and leak test refrigerants — appliances	50
UEENEEJ164A	Analyse the operation of HVAC air and hydronic systems	80
UEENEEJ165A	Evaluate thermodynamic and fluid parameters of refrigeration systems	100
UEENEEJ166A	Resolve problems in dairy refrigeration systems	20



Unit Code	Unit Title	Nominal Hours
UEENEEJ167A	Resolve problems in central plant air conditioning systems	40
UEENEEJ168A	Maintain microbial control of refrigeration and air conditioning systems	20
UEENEEJ170A	Diagnose and rectify faults in air conditioning and refrigeration control systems	80
UEENEEJ171A	Resolve problems in refrigerated beverage vending cabinets	20
UEENEEJ172A	Recover, pressure test, evacuate, charge and leak test refrigerants — split systems	60
UEENEEJ173A	Service and repair microwave ovens	40
UEENEEJ174A	Apply safety awareness and legal requirements for hydrocarbon refrigerants	10
UEENEEJ175A	Service and repair self contained hydrocarbon air conditioning and refrigeration systems	20
UEENEEJ176A	Install and commission hydrocarbon refrigerant systems, components and associated equipment	20
UEENEEJ177A	Design hydrocarbon refrigerant systems	40
UEENEEJ178A	Apply safety awareness and legal requirements for ammonia refrigerant	10
UEENEEJ179A	Repair and service ammonia refrigeration systems	20
UEENEEJ180A	Install and commission ammonia refrigeration systems, components and associated equipment	20
UEENEEJ181A	Design ammonia refrigerated systems	40
UEENEEJ182A	Repair and service secondary refrigeration systems	20
UEENEEJ183A	Design secondary refrigerant systems	40
UEENEEJ184A	Apply safety awareness and legal requirements for carbon dioxide refrigerant	10
UEENEEJ185A	Repair and service carbon dioxide refrigeration systems	20
UEENEEJ186A	Install and commission carbon dioxide refrigeration systems, components and associated equipment	20
UEENEEJ187A	Design carbon dioxide refrigerated systems	40
UEENEEJ188A	Repair and service self contained carbon dioxide refrigeration and heat pump systems	20
UEENEEJ189A	Service room air conditioners	30
UEENEEJ190A	Select basic commercial refrigeration system equipment, components and accessories	40
UEENEEJ191A	Select residential air conditioning system equipment, components and accessories	40
UEENEEJ192A	Analyse the psychrometric performance of HVAC/R systems	50
UEENEEJ193A	Analyse the thermodynamic performance of HVAC/R systems	40
UEENEEJ194A	Solve problems in low voltage refrigeration circuits	60
UEENEEJ195A	Establish the basic operating conditions of vapour compression systems - appliances	50
UEENEEJ196A	Operate Ammonia Refrigeration Plan	40
UEENEEK101A	Maintain safety and tidiness of remote area power supply systems	20



Unit Code	Unit Title	Nominal Hours
UEENEEK102A	Work safely with remote area power supply systems	20
UEENEEK103A	Conduct periodic maintenance of remote area power supply battery banks	40
UEENEEK104A	Conduct periodic maintenance of remote area power supply generator sets	40
UEENEEK105A	Conduct periodic maintenance of remote area power supply photo voltaic arrays	40
UEENEEK106A	Conduct periodic maintenance of remote area power supply wind generators	40
UEENEEK107A	Conduct checks in the demand side use of remote area power supplies (RAPS)	40
UEENEEK108A	Plan periodic maintenance schedules of remote area power supplies (RAPS)	40
UEENEEK109A	Attend to breakdowns in remote area power supplies (RAPS)	20
UEENEEK110A	Co-ordinate maintenance of renewable energy (RE) apparatus and systems	20
UEENEEK111A	Assemble and connect remote area power supplies	60
UEENEEK112A	Provide basic sustainable energy solutions for energy reduction in residential premises	40
UEENEEK114A	Promote sustainable energy practices in the community	100
UEENEEK116A	Maintain and repair remote area power generation facilities	40
UEENEEK117A	Maintain and repair facilities associated with remote area essential service operations	120
UEENEEK118A	Maintain and monitor remote area essential service (RAPS) operations	120
UEENEEK120A	Maintain operation of remote area power generation plant	120
UEENEEK121A	Manage renewable energy (RE) projects	40
UEENEEK122A	Plan renewable energy (RE) projects	60
UEENEEK123A	Carry out basic repairs to renewable energy apparatus	80
UEENEEK124A	Solve basic problems in micro hydro systems	20
UEENEEK125A	Solve basic problems in photovoltaic energy apparatus and systems	40
UEENEEK127A	Diagnose and rectify faults in renewable energy control systems	60
UEENEEK128A	Solve problems in stand-alone renewable energy systems	60
UEENEEK129A	Design renewable energy (RE) heating systems	120
UEENEEK130A	Solve problems in wind energy conversion systems rated up to 10 kW	60
UEENEEK131A	Design wind energy conversion systems (WECS) rated to 10 kW	60
UEENEEK132A	Develop strategies to address environmental and sustainability issues in the energy sector	20
UEENEEK133A	Design hybrid renewable power systems	80
UEENEEK134A	Install ELV stand-alone photovoltaic power systems	60
UEENEEK135A	Design grid connected photovoltaic power supply systems	60

Unit Code	Unit Title	Nominal Hours
UEENEEK136A	Install, configure and commission LV micro-hydro systems rated up to 6.4 kW	40
UEENEEK137A	Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW	20
UEENEEK138A	Design micro-hydro systems rated to 6.4 kW	60
UEENEEK139A	Design stand-alone renewable energy (RE) systems	40
UEENEEK140A	Develop engineering solutions to renewable energy (RE) problems	60
UEENEEK142A	Apply environmentally and sustainable procedures in the energy sector	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
UEENEEK145A	Implement and monitor energy sector environmental and sustainable energy policies and procedures	20
UEENEEK146A	Design energy management controls for electrical installations in buildings	80
UEENEEK148A	Install, configure and commission LV grid connected photovoltaic power systems	80
UEENEEK149A	Verify compliance and functionality of a extra low voltage renewable energy installation	20
UEENEEK151A	Develop effective engineering strategies for energy reduction in buildings	120
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
UEENEEM019A	Attend to breakdowns in hazardous areas — coal mining	20
UEENEEM020A	Attend to breakdowns in hazardous areas — gas atmospheres	20
UEENEEM021A	Attend to breakdowns in hazardous areas — dust atmospheres	20
UEENEEM022A	Attend to breakdowns in hazardous areas — pressurisation	20
UEENEEM023A	Install explosion-protected equipment and wiring systems — coal mining	60
UEENEEM024A	Install explosion-protected equipment and wiring systems — gas atmospheres	60
UEENEEM025A	Install explosion-protected equipment and wiring systems — dust atmospheres	60
UEENEEM026A	Install explosion-protected equipment and wiring systems — pressurisation	60
UEENEEM027A	Maintain equipment in hazardous areas — coal mining	60
UEENEEM028A	Maintain equipment in hazardous areas — gas atmospheres	60

Unit Code	Unit Title	Nominal Hours
UEENEEM029A	Maintain equipment in hazardous areas — dust atmospheres	60
UEENEEM030A	Maintain equipment in hazardous areas — pressurisation	60
UEENEEM031A	Overhaul and repair of explosion-protected equipment — coal mining	60
UEENEEM032A	Overhaul and repair of explosion-protected equipment — flameproof enclosures	60
UEENEEM033A	Overhaul and repair of explosion-protected equipment — gas atmospheres	60
UEENEEM034A	Overhaul and repair of explosion-protected equipment — dust atmospheres	60
UEENEEM035A	Conduct a conformity assessment of explosion-protected equipment — coal mining	40
UEENEEM036A	Conduct a conformity assessment of explosion-protected equipment — gas atmospheres	40
UEENEEM037A	Conduct a conformity assessment of explosion-protected equipment — dust atmospheres	40
UEENEEM038A	Conduct testing of hazardous areas installations — coal mining	40
UEENEEM039A	Conduct testing of hazardous areas installations — gas atmospheres	40
UEENEEM040A	Conduct testing of hazardous areas installations — dust atmospheres	40
UEENEEM041A	Conduct testing of hazardous area installations — pressurisation	40
UEENEEM042A	Conduct visual inspection of hazardous areas installations	40
UEENEEM043A	Conduct detailed inspection of hazardous areas installations — coal mining	40
UEENEEM044A	Conduct detailed inspection of hazardous areas installations — gas atmospheres	40
UEENEEM045A	Conduct detailed inspection of hazardous areas installations — dust atmospheres	40
UEENEEM046A	Conduct detailed inspection of hazardous areas installations — pressurisation	40
UEENEEM047A	Develop and manage maintenance programs for hazardous areas electrical equipment — coal mining	20
UEENEEM048A	Develop and manage maintenance programs for hazardous areas electrical equipment — gas atmospheres	20
UEENEEM049A	Develop and manage maintenance programs for hazardous areas electrical equipment — dust atmospheres	20
UEENEEM050A	Develop and manage maintenance programs for hazardous areas electrical equipment — pressurisation	20
UEENEEM052A	Classify hazardous areas — gas atmospheres	40
UEENEEM053A	Classify hazardous areas — dust atmospheres	40
UEENEEM054A	Plan electrical installations for hazardous areas — gas atmospheres	20
UEENEEM055A	Plan electrical installations for hazardous areas — dust atmospheres	20

Unit Code	Unit Title	Nominal Hours
UEENEEM056A	Plan electrical installations for hazardous areas — pressurisation	20
UEENEEM057A	Design explosion-protected electrical systems and installations — gas atmospheres	20
UEENEEM058A	Design explosion-protected electrical systems and installations — dust atmospheres	20
UEENEEM059A	Design explosion-protected electrical systems and installations — pressurisation	20
UEENEEM060A	Carry out overhaul and repair of explosion-protected equipment — coal mining	60
UEENEEM061A	Carry out overhaul and repair of explosion-protected equipment — flameproof enclosures	60
UEENEEM062A	Carry out overhaul and repair of explosion-protected equipment — gas atmospheres	60
UEENEEM063A	Carry out overhaul and repair of explosion-protected equipment — dust atmospheres	60
UEENEEM064A	Conduct audit of hazardous areas installations — coal mining	60
UEENEEM065A	Conduct audit of hazardous areas installations — gas atmospheres	60
UEENEEM066A	Conduct audit of hazardous areas installations — dust atmospheres	60
UEENEEM067A	Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — coal mining	60
UEENEEM068A	Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — gas atmospheres	60
UEENEEM069A	Assess the fitness-for-purpose of hazardous areas explosion-protected equipment — dust atmospheres	60
UEENEEM070A	Repair reeling, trailing and flexible cables	60
UEENEEM071A	Test reeling, trailing and flexible cables	60
UEENEEM072A	Inspect and fit plugs/couplers for reeling, trailing and flexible cables	60
UEENEEM073A	Verify compliance of repaired reeling, trailing and flexible cables	60
UEENEEM074A	Plan electrical installations in hazardous areas — Coal mining	20
UEENEEM075A	Design explosion-protected electrical systems — Coal mining	20
UEENEEM076A	Use and maintain the integrity of a portable gas detection device	20
UEENEEM077A	Install and maintain the integrity of fixed gas detection equipment	20
UEENEEM078A	Manage compliance of hazardous areas	20
UEENEEM079A	Design of gas detection systems	20
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20
UEENEEN101A	Maintain mechanical rail signalling equipment and infrastructure	20
UEENEEN102A	Assemble and wire internal electrical rail signalling equipment	20
UEENEEN103A	Install and maintain rail track circuit leads and bonds	20
UEENEEN104A	Test copper rail signalling cables	20
UEENEEN105A	Install and maintain rail signalling power supplies	20

Unit Code	Unit Title	Nominal Hours
UEENEEN106A	Install and maintain non-vital screen based control systems	20
UEENEEN107A	Install and maintain active level crossing equipment	20
UEENEEN108A	Install and maintain power operated point actuating devices	20
UEENEEN109A	Install and maintain train detection equipment	20
UEENEEN110A	Install and maintain non-vital telemetry systems	20
UEENEEN111A	Install and maintain trackside signal and train protection equipment	20
UEENEEN112A	Install and maintain vital relay interlocking systems	20
UEENEEN114A	Install and maintain computer based interlocking rail systems	20
UEENEEN116A	Maintain electronic and microprocessor-based remote control systems	20
UEENEEN118A	Find and repair rail signalling system faults	20
UEENEEN121A	Repair rail signalling power and control cables	20
UEENEEN126A	Develop rail signalling system maintenance programs	20
UEENEEN127A	Decommission electrical and electro-mechanical rail signalling from service	20
UEENEEN128A	Test and commission rail power equipment	20
UEENEENP010A	Disconnect / reconnect appliances connected to low voltage installation wiring	60
UEENEENP011A	Disconnect / reconnect neon signs connected to low voltage installation wiring	60
UEENEENP012A	Disconnect / reconnect composite appliances connected to low voltage installation wiring	60
UEENEENP013A	Disconnect / reconnect control devices connected to low voltage installation wiring	60
UEENEENP014A	Disconnect / reconnect water heaters connected to low voltage installation wiring	60
UEENEENP015A	Disconnect / reconnect motors connected to low voltage installation wiring	60
UEENEENP016A	Locate and rectify faults in low voltage appliances using set procedures	20
UEENEENP017A	Locate and rectify faults in low voltage composite appliances using set procedures	20
UEENEENP018A	Locate and rectify faults in low voltage control devices using set procedures	20
UEENEENP019A	Locate and rectify faults in low voltage water heaters using set procedures	20
UEENEENP020A	Locate and rectify faults in low voltage motors using set procedures	20
UEENEENP021A	Disconnect / reconnect explosion-protected appliances and control devices connected to low voltage installation wiring	60
UEENEENP022A	Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles	60
UEENEENP023A	Attach flexible cables and plugs to electrical equipment connected to a HV supply	40

Unit Code	Unit Title	Nominal Hours
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
UEENEER001B	Contribute to the planning of a research project	80
UEENEER002B	Contribute to the conduct of a research project	80
UEENEER003B	Contribute to the development of a product/application/service	80
UEENEER004B	Contribute to the trial of a product/application/service	80
UEENEER005B	Contribute to intellectual property management	80
UEENEER006B	Contribute to the commercialisation of a products/applications/services	80

## SAMPLE TRAINING PROGRAMS

A range of Sample Training Plans have been provided to demonstrate the flexibility of qualifications contained in the **UEE11 Electrotechnology Training Package**, but are by no means mandatory.

<b>Occupation / Work Function</b>	<b>Work Assistant</b>	
<b>Qualification Title</b>	<b>Certificate I in ElectroComms Skills</b>	
<b>Qualification Code</b>	<b>UEE10111</b>	
<b>Description</b>	People gaining this qualification will be able to perform basic work activities, including identifying and using a range of components, accessories, materials, tools, equipment, technologies, and customs for carrying out work in the Electrotechnology –Communications Industry. Sectors in the industry are electronics, electrical, communications, including telecommunications – voice, data, video and information technology, computer systems, instrumentation, lifts, refrigeration and air conditioning, and renewable/sustainable energy.	
<b>Notes</b>	For advice on how to choose electives other than those listed below, please refer to the UEE11 Electrotechnology Training Package and its Qualifications Packaging Rules or contact the CMM Engineering Industries on (03) 9286 9880.	
<b>Unit Code</b>	<b>Unit Title</b>	<b>Hours</b>
<b>Core</b>		
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
UEENEEE179A	Identify and select components, accessories and materials for energy sector work activities	20
UEENEEE148A	Carry out routine work activities in an energy sector environment	40
UEENEEK142A	Apply environmentally and sustainable energy procedures in the energy sector	20
<b>Electives Group A</b>		
UEENEEC001B	Maintain documentation	20
<b>Electives Group B</b>		
UEENEEE103A	Solve problems in ELV single path circuits	40
	<b>Total hours</b>	<b>180</b>

<b>Occupation / Work Function</b>	<b>Computer Assembler</b>	
<b>Qualification Title</b>	<b>Certificate II in Computer Assembly and Repair</b>	
<b>Qualification Code</b>	<b>UEE20511</b>	
<b>Description</b>	Persons gaining this qualification will be able to select components and assemble computer to customer specifications and carry out routine hardware repairs (generally by replacement) of known faulty components following prescribed routines	
<b>Notes</b>	For advice on how to choose electives other than those listed below, please refer to the UEE11 Electrotechnology Training Package and its Qualifications Packaging Rules or contact the CMM Engineering Industries on (03) 9286 9880.	
<b>Unit Code</b>	<b>Unit Title</b>	<b>Hours</b>
<b>Core</b>		
UEENEED102A	Assemble, set-up and test computing devices	80
UEENEEE038B	Participate in development and follow a personal competency development plan	20
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work	20
UEENEEK142A	Apply environmentally and sustainable energy procedures in the energy sector	20
<b>Electives Group A</b>		
UEENEEC001B	Maintain documentation	20
UEENEEC002B	Source and purchase material/parts for installation or service jobs	20
UEENEEC008B	Receive and store materials and equipment for electrotechnology work	20
<b>Electives Group B</b>		
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEED143A	Install and configure a client computer operating system and software	40
UEENEED146A	Set up and configure basic local area network (LAN)	40
	<b>Total hours</b>	<b>360</b>



<b>Occupation / Work Function</b>	<b>Electrician</b>	
<b>Qualification Title</b>	<b>Certificate III in Electrotechnology Electrician</b>	
<b>Qualification Code</b>	<b>UEE30811</b>	
<b>Description</b>	Persons gaining this qualification will be able to select, install, set up, test, fault find, repair and maintain electrical systems and equipment in building and premises. They will also have fulfilled ERAC requirements for an 'Electrician's licence'.	
<b>Notes</b>	For advice on how to choose electives other than those listed below, please refer to the UEE11 Electrotechnology Training Package and its Qualifications Packaging Rules or contact the CMM Engineering Industries on (03) 9286 9880.	
<b>Unit Code</b>	<b>Unit Title</b>	<b>Hours</b>
<b>Core</b>		
UEENEEC020B	Participate in electrical work and competency development activities	20
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
UEENEEE105A	Fix and secure electrotechnology equipment	20
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications	40
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	60
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits	40
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations	80
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	80
UEENEEG109A	Develop and connect electrical control circuits	80
UEENEEK142A	Apply environmentally and sustainable energy procedures in the energy sector	20
<b>Group A Electives</b>		
UEENED101A	Use computer applications relevant to a workplace	20
<b>Group B Electives</b>		
UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services	120
	<b>Total Hours</b>	<b>1100</b>

<b>Occupation / Work Function</b>	<b>Refrigeration and Air-Conditioning Mechanic</b>	
<b>Qualification Title</b>	<b>Certificate III in Air-conditioning and Refrigeration</b>	
<b>Qualification Code</b>	<b>UEE32211</b>	
<b>Description</b>	Persons gaining this qualification will be able to select components, install, set up, test, fault find, repair and maintain refrigeration systems and equipment that apply to food storage and preservation and air conditioning and air distribution equipment in buildings and premises. They will also have fulfilled the regulatory requirements for purchasing and handling refrigerants.	
<b>Notes</b>	For advice on how to choose electives other than those listed below, please refer to the UEE11 Electrotechnology Training Package and its Qualifications Packaging Rules or contact the CMM Engineering Industries on (03) 9286 9880.	
<b>Unit Code</b>	<b>Unit Title</b>	<b>Hours</b>
<b>Core</b>		
UEENEEC025B	Participate in refrigeration and air conditioning work and competency development activities	20
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40
UEENEEE103A	Solve problems in ELV single path circuits	40
UEENEEE105A	Fix and secure electrotechnology equipment	20
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications	40
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work	20
UEENEEJ102A	Prepare and connect refrigerant tubing and fittings	40
UEENEEJ103A	Establish the basic operating conditions of vapour compression systems	60
UEENEEJ104A	Establish the basic operating conditions of air conditioning systems	20
UEENEEJ106A	Install refrigerant pipe work, flow controls and accessories	60
UEENEEJ107A	Install air conditioning and refrigeration systems, major components and associated equipment	80
UEENEEJ108A	Recover, pressure test, evacuate, charge and leak test refrigerants	60
UEENEEJ109A	Verify functionality and compliance of refrigeration and air conditioning installations	20
UEENEEJ110A	Select refrigerant piping, accessories and associated controls	60
UEENEEJ111A	Diagnose and rectify faults in air conditioning and refrigeration systems and components	40
UEENEEJ113A	Commission air conditioning and refrigeration systems	40
UEENEEJ153A	Find and rectify faults in motors and associated controls in refrigeration and air conditioning systems	60
UEENEEJ170A	Diagnose and rectify faults in air conditioning and refrigeration control systems	80
UEENEEJ194A	Solve problems in low voltage refrigeration circuits	60
UEENEEK142A	Apply environmentally and sustainable energy procedures in the energy sector	20
UEENEEP012A	Disconnect / reconnect composite appliances connected to low voltage installation wiring	60

<b>Unit Code</b>	<b>Unit Title (Cont)</b>	<b>Hours</b>
UEENEEP017A	Locate and rectify faults in low voltage composite appliances using set procedures	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
<b>Electives Group A</b>		
UEENEEC001B	Maintain documentation	20
<b>Electives Group B</b>		
UEENEEJ116A	Resolve problems in transport refrigeration systems	20
UEENEEJ117A	Resolve problems in ultra-low temperature refrigeration systems	20
	<b>Total hours</b>	<b>1080</b>

<b>Occupation / Work Function</b>	<b>Computer Technician</b>	
<b>Qualification Title</b>	<b>Certificate IV in Computer Systems</b>	
<b>Qualification Code</b>	<b>UEE40111</b>	
<b>Description</b>	Persons gaining this qualification will be able to select, install, commission, fault find and maintain data processing, communications and control aspects of systems used for monitoring and control of systems for access, surveillance, safety and effective operation of manufacturing, buildings, structures, premises, precincts and personal computer and networks.	
<b>Notes</b>	For advice on how to choose electives other than those listed below, please refer to the UEE11 Electrotechnology Training Package and its Qualifications Packaging Rules or contact the CMM Engineering Industries on (03) 9286 9880.	
<b>Unit Code</b>	<b>Unit Title</b>	<b>Hours</b>
<b>Core</b>		
UEENEED102A	Assemble, set-up and test computing devices	80
UEENEED104A	Use engineering applications software on personal computers	40
UEENEED112A	Support computer hardware and software for engineering applications	120
UEENEED143A	Install and configure a client computer operating system and software	40
UEENEED146A	Set up and configure basic local area network (LAN)	40
UEENEEE038B	Participate in development and follow a personal competency development plan	20
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40
UEENEEE103A	Solve problems in ELV single path circuits	40
UEENEEE117A	Implement and monitor energy sector OHS policies and procedures	20
UEENEEE124A	Compile and produce an energy sector detailed report	60
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work	20
UEENEEK145A	Implement and monitor energy sector environmental and sustainable energy policies and procedures	20
<b>Electives Group A</b>		
UEENEED001B	Maintain documentation	20
UEENEED002B	Source and purchase material/parts for installation or service jobs	20
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	20
<b>Electives Group B</b>		
UEENEEA101A	Assemble electronic components	40
UEENEEA102A	Select electronic components for assembly	20

<b>Unit Code</b>	<b>Unit Title (Cont)</b>	<b>Unit Code</b>
UEENEEA104A	Modify electronic sub assemblies	40
UEENEEH166A	Troubleshoot microcontroller based hardware systems	40
UEENEEH169A	Solve problems in basic electronic circuits	100
UEENEEI101A	Use instrumentation drawings, specification, standards and equipment manuals	40
<b>Electives Group C</b>		
UEENEEC004B	Prepare specifications for the supply of materials and equipment for electrotechnology projects	40
UEENEEC005B	Estimate electrotechnology projects	40
UEENEEED117A	Install and configure network systems for internetworking	120
UEENEEED124A	Integrate multiple computer operating systems on a client server local area network	80
UEENEEH181A	Design electronic printed circuit boards	40
	<b>Total hours</b>	<b>1240</b>

<b>Occupation / Work Function</b>	<b>Production Controller</b>	
<b>Qualification Title</b>	<b>Diploma of Electrical and Instrumentation</b>	
<b>Qualification Code</b>	<b>UEE50211</b>	
<b>Description</b>	Persons gaining this qualification will be able to select, install, commission, maintain and diagnose faults/malfunctions on electrical, instrumentation and control equipment and systems. They will also have fulfilled ERAC requirements for an 'Electrician's licence'.	
<b>Notes</b>	For advice on how to choose electives other than those listed below, please refer to the UEE11 Electrotechnology Training Package and its Qualifications Packaging Rules or contact the CMM Engineering Industries on (03) 9286 9880.	
<b>Unit Code</b>	<b>Unit Title</b>	<b>Hours</b>
<b>Core</b>		
UEENEEE038B	Participate in development and follow a personal competency development plan	20
UEENEEE084A	Write specifications for electrotechnology engineering projects	40
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
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
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	60
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits	40
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations	80
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	80
UEENEEG109A	Develop and connect electrical control circuits	80
UEENEEI101A	Use instrumentation drawings, specification, standards and equipment manuals	40

Unit Code	Unit Title (Cont)	Hours
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
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
UEENEEK132A	Develop strategies to address environmental and sustainability issues in the energy sector	20
<b>Electives</b>		
<b>Group C</b>		
UEENEEI143A	Develop access control of electrical integrated systems using logic-based programming tools	20
<b>Group D</b>		
UEENEEI156A	Develop and test code for microcontroller devices	60
	<b>Total hours</b>	<b>1680</b>

<b>Occupation / Work Function</b>	<b>Electronics Engineering Associate</b>	
<b>Qualification Title</b>	<b>Advanced Diploma of Electronics and Communications Engineering</b>	
<b>Qualification Code</b>	<b>UEE60211</b>	
<b>Description</b>	People gaining this qualification are able to design and validate/evaluate electronics and communications equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales	
<b>Notes</b>	For advice on how to choose electives other than those listed below, please refer to the UEE11 Electrotechnology Training Package and its Qualifications Packaging Rules or contact the CMM Engineering Industries on (03) 9286 9880.	
<b>Unit Code</b>	<b>Unit Title</b>	<b>Hours</b>
<b>Core</b>		
UEENEEE015B	Develop design briefs for electrotechnology projects	40
UEENEEE038B	Participate in development and follow a personal competency development plan	20
UEENEEE078B	Contribute to risk management in electrotechnology systems	20
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
UEENEEE117A	Implement and monitor energy sector OHS policies and procedures	20
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work	20
UEENEEH141A	Manage computer systems/electronics projects	40
UEENEEH167A	Commission electronics and communications systems	20
UEENEEH168A	Modify/redesign of electronics and communications systems	20
UEENEEH188A	Design and develop electronics/ computer systems projects	40
UEENEEK132A	Develop strategies to address environmental and sustainability issues in the energy sector	20
<b>Electives Group A</b>		
UEENEEE081A	Apply material science to solving electrotechnology engineering problems	60
UEENEEE082A	Apply physics to solving electrotechnology engineering problems	60
ICTTEN3056A	Install telecommunications network equipment	60
<b>Electives Group B</b>		
UEENEEA101A	Assemble electronic components	40
UEENEEA104A	Use engineering applications software on personal computers	40
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40
UEENEEE104A	Solve problems in d.c. circuits	80
UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40
UEENEEH112A	Troubleshoot digital sub-systems	80
UEENEEH113A	Troubleshoot amplifiers in an electronic apparatus	80



Unit Code	Unit Title (Cont)	Hours
UEENEEH114A	Troubleshoot resonance circuits in an electronic apparatus	80
UEENEEH115A	Develop software solutions for microcontroller based systems	60
UEENEEH116A	Find and repair microwave amplifier section faults in electronic apparatus	40
UEENEEH139A	Troubleshoot basic amplifier circuits	40
UEENEEH146A	Solve fundamental electronic communications system problems	40
UEENEEH166A	Troubleshoot microcontroller based hardware systems	40
UEENEEH169A	Solve problems in basic electronic circuits	100
UEENEEH172A	Troubleshoot communication systems	80
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20
<b>Electives Group C</b>		
UEENEEED103A	Evaluate and modify object oriented code programs	40
<b>Electives Group D</b>		
UEENEEEE126A	Provide solutions to basic engineering computational problems	60
UEENEEH145A	Develop engineering solutions to analogue electronic problems	80
UEENEEH148A	Design and develop advanced digital systems	40
UEENEEH181A	Design electronic printed circuit boards	40
UEENEEH182A	Develop engineering solutions to RF amplifiers problems	40
<b>Electives Group E</b>		
UEENEEED152A	Design embedded controller control systems	80
UEENEEEE011C	Manage risk in electrotechnology activities	60
UEENEEEE127A	Use advanced computational processes to provide solutions to energy sector engineering problems	120
UEENEEEE129A	Solve electrotechnical engineering problems	60
UEENEEH160A	Plan large electronic projects	60
UEENEEH184A	Modify digital signal processing (DSP) based sub-systems	80
UEENEEH189A	Provide Gate Array solutions for complex electronics systems	60
	<b>Total hours</b>	<b>2160</b>

<b>Occupation / Work Function</b>	<b>IT Systems Manager</b>	
<b>Qualification Title</b>	<b>Advanced Diploma of Computer Systems Engineering</b>	
<b>Qualification Code</b>	<b>UEE60411</b>	
<b>Description</b>	Persons gaining this qualification will be able to design, install/validate/evaluate and administer computer networks and systems, manage risk, estimate and manage projects and provide technical advice/sales.	
<b>Notes</b>	For advice on how to choose electives other than those listed below, please refer to the UEE11 Electrotechnology Training Package and its Qualifications Packaging Rules or contact the CMM Engineering Industries on (03) 9286 9880.	
<b>Unit Code</b>	<b>Unit Title</b>	<b>Hours</b>
<b>Core</b>		
UEENEED144A	Commission industrial computer systems	20
UEENEED145A	Modify-redesign of industrial computer systems	20
UEENEEE015B	Develop design briefs for electrotechnology projects	40
UEENEEE038B	Participate in development and follow a personal competency development plan	20
UEENEEE078B	Contribute to risk management in electrotechnology systems	20
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace	20
UEENEEE117A	Implement and monitor energy sector OHS policies and procedures	20
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work	20
UEENEEH141A	Manage computer systems/electronics projects	40
UEENEEH188A	Design and develop electronics/ computer systems projects	40
UEENEEK132A	Develop strategies to address environmental and sustainability issues in the energy sector	20
<b>Electives Group A</b>		
UEENEEE081A	Apply material science to solving electrotechnology engineering problems	60
UEENEEE082A	Apply physics to solving electrotechnology engineering problems	60
<b>Electives Group B</b>		
UEENEED102A	Assemble, set-up and test computing devices	80
UEENEED104A	Use engineering applications software on personal computers	40
UEENEED112A	Support computer hardware and software for engineering applications	120
UEENEED129A	Develop web pages for engineering applications	40
UEENEED143A	Install and configure a client computer operating system and software	40
UEENEED146A	Set up and configure basic local area network (LAN)	40
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components	40
UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40
UEENEEH112A	Troubleshoot digital sub-systems	80

Unit Code	Unit Title (Cont)	Hours
<b>Electives Group C</b>		
UEENEED113A	Install and administer Unix based networked computers	80
UEENEED115A	Administer computer networks	80
UEENEED117A	Install and configure network systems for internetworking	120
<b>Electives Group D</b>		
UEENEEE126A	Provide solutions to basic engineering computational problems	60
UEENEED118A	Design and implement network systems for internetworking	120
UEENEED124A	Integrate multiple computer operating systems on a client server local area network	80
<b>Electives Group E</b>		
UEENEED148A	Plan industrial computer systems projects	60
UEENEEE129A	Solve electrotechnical engineering problems	60
UEENEEE127A	Use advanced computational processes to provide solutions to energy sector engineering problems	120
UEENEED114A	Design and manage enterprise computer networks	120
UEENEED116A	Develop computer network services	120
UEENEED122A	Design and implement security for Internetworking systems	100
UEENEED152A	Design embedded controller control systems	80
UEENEED149A	Develop energy sector computer network applications infrastructure	80
	<b>Total hours</b>	<b>2200</b>

<b>Occupation / Work Function</b>	<b>Electrical Installations designer</b>	
<b>Qualification Title</b>	<b>Advanced Diploma of Engineering Technology - Electrical</b>	
<b>Qualification Code</b>	<b>UEE62111</b>	
<b>Description</b>	Persons gaining this qualification will be able to design, install/validate/evaluate and administer electrical installations, manage risk, estimate and manage projects and provide technical advice/sales	
<b>Notes</b>	For advice on how to choose electives other than those listed below, please refer to the UEE11 Electrotechnology Training Package and its Qualifications Packaging Rules or contact the CMM Engineering Industries on (03) 9286 9880.	
<b>Unit Code</b>	<b>Unit Title</b>	<b>Hours</b>
<b>Core</b>		
UEENEED104A	Use engineering applications software on personal computers	40
UEENEEE011C	Manage risk in electrotechnology activities	60
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	20
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 circuit	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

Unit Code	Unit Title (Cont)	Hours
UEENEEG102A	Solve problems in low voltage a.c. circuits	80
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits	40
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations	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
<b>Electives Group A</b>		
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	80
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
UEENEEI139A	Diagnose and rectify faults in digital controls systems	60
<b>Electives Group B</b>		
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
<b>Electives Group C</b>		
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
<b>Electives Group E</b>		
UEENEEE127A	Use advanced computational processes to provide solutions to energy sector engineering problems	120
UEENEEI154A	Design and use advanced programming tools PC networks and HMI Interfacing	120
UEENEEG145A	Develop engineering solutions for induction machine and control problems	60
	<b>Total hours</b>	<b>2160</b>

## CONTACTS AND LINKS

<b>Industry Skills Council (ISC)</b>		
EE-Oz Training Standards	This ISC is responsible for developing this <b>UEE11 Electrotechnology Training Package</b> and can be contacted for further information. You can also source copies of the Training Package and support material.	Unit 2 48 Mort Street BRADDON, ACT, 2612 Phone: (02) 6262 7055 Fax: (02) 6257 4222 Email: <a href="mailto:ee-oz@ee-oz.com.au">ee-oz@ee-oz.com.au</a> Web: <a href="http://www.ee-oz.com.au">http://www.ee-oz.com.au</a>
<b>National Register for VET in Australia</b>		
Training.gov.au (TGA)	TGA is the Australian governments' official National Register of information on Training Packages, qualifications, courses, units of competency and RTOs.	training.gov.au
<b>Australian Government</b>		
The Department of Industry, Innovation, Science, Research and Tertiary Education (DIISRTE)	DIISRTE provides a range of services and resources to assist in delivery of Training Packages. Search the DIISRTE website for links to a range of relevant resources and publications.	<a href="http://www.innovation.gov.au">http://www.innovation.gov.au</a> You may also find Department of Education Employment and Workplace Relations website of use. <a href="http://www.deewr.gov.au">http://www.deewr.gov.au</a>
<b>State Government</b>		
Department of Education and Early Childhood Development Higher Education and Skills Group	Higher Education and Skills Group is responsible for funding and the implementation of Vocational Education and Training (VET) in Victoria, including Apprenticeships and Traineeships.	General information: <a href="http://www.skills.vic.gov.au">www.skills.vic.gov.au</a> Approved Training Schemes: <a href="http://www.skills.vic.gov.au/corporate/publications/brochures-and-fact-sheets/apprenticeships-and-traineeships-in-victoria-industry-guides">http://www.skills.vic.gov.au/corporate/publications/brochures-and-fact-sheets/apprenticeships-and-traineeships-in-victoria-industry-guides</a>
<b>Curriculum Maintenance Manager (CMM)</b>		
Engineering Industries	The CMM service is provided by Executive Officers located within Victorian TAFE institutes on behalf of Skills Victoria.	George Adda Box Hill Institute of TAFE, Private Bag 2014, Box Hill, Victoria, 3128 Phone: (03) 9286 9880 Fax: (03) 9286 9800 Email: <a href="mailto:g.adda@bhtafe.edu.au">g.adda@bhtafe.edu.au</a> Web: <a href="http://trainingsupport.skills.vic.gov.au/cmminf.cfm">http://trainingsupport.skills.vic.gov.au/cmminf.cfm</a>

<b>State VET Regulatory Authority</b>		
Victorian Registration and Qualifications Authority (VRQA)	The VRQA is a statutory authority responsible for the registration of education and training providers in Victoria to ensure the delivery of quality education and training.	<a href="http://www.vrqa.vic.gov.au">www.vrqa.vic.gov.au</a> Phone: 03 9637 2806
<b>National VET Regulatory Authority</b>		
Australian Skills Quality Authority (ASQA)	ASQA is the national regulator for Australia's VET sector vocational education and training sector.  ASQA regulates courses and training providers to ensure nationally approved quality standards are met.	<a href="http://www.asqa.gov.au">www.asqa.gov.au</a> Info line: 1300 701 801
<b>Industry Regulatory Body</b>		
Energy Safe Victoria	The industry Regulatory body can provide advice on licensing, legislative or regulatory requirements which may impact on the delivery of training or the issuance of qualifications in this Training Package.	Level 5 Building 2 4 Riverside Quay Southbank, VIC, 3006 Postal Address: PO BOX 262 Collins Street West Melbourne, Vic 8007 Phone: (03) 9203 9700 Fax: (03) 9686 2197 Email: <a href="mailto:info@esv.vic.gov.au">info@esv.vic.gov.au</a> Web: <a href="http://www.esv.vic.gov.au/">http://www.esv.vic.gov.au/</a>
<b>WorkSafe</b>		
WorkSafe Victoria	WorkSafe needs to provide written verification before High Risk Work Units can be added to an RTO's scope of registration.	<a href="http://www.worksafe.vic.gov.au">www.worksafe.vic.gov.au</a> Info line: 1800 136 089

## GLOSSARY

<b>Code</b>	Nationally endorsed Training Package qualification code.
<b>Title</b>	Nationally endorsed Training Package qualification title.
<b>Unit Code</b>	Nationally endorsed Training Package unit code.
<b>Unit Title</b>	Nationally endorsed Training Package unit title.
<b>Nominal Hours</b>	The anticipated hours of supervised learning or training deemed necessary to conduct training and assessment activities associated with the program of study. These hours are determined by the Victorian State Training Authority. Nominal hours may vary for a qualification depending on the units of competency selected.
<b>Scope of Registration</b>	Scope of registration specifies the AQF qualifications and/or units of competency the training organisation is registered to issue and the industry training and/or assessment services it is registered to provide.