**Victorian Purchasing Guide**

**for the**

**UEE11 Electrotechnology Training Package**

**Version No 1**

**September 2012**

88x31

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Victorian Purchasing Guide ⎯ Version History

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**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 Electrotechnolgy** **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 |
| 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 |
| 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 |
| 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/cabling 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 |
| 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 equipent | 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 |
| 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 |
| UEENEEP010A | Disconnect / reconnect appliances connected to low voltage installation wiring | 60 |
| UEENEEP011A | Disconnect / reconnect neon signs connected to low voltage installation wiring | 60 |
| UEENEEP012A | Disconnect / reconnect composite appliances connected to low voltage installation wiring | 60 |
| UEENEEP013A | Disconnect / reconnect control devices connected to low voltage installation wiring | 60 |
| UEENEEP014A | Disconnect / reconnect water heaters connected to low voltage installation wiring | 60 |
| UEENEEP015A | Disconnect / reconnect motors connected to low voltage installation wiring | 60 |
| UEENEEP016A | Locate and rectify faults in low voltage appliances using set procedures | 20 |
| UEENEEP017A | Locate and rectify faults in low voltage composite appliances using set procedures | 20 |
| UEENEEP018A | Locate and rectify faults in low voltage control devices using set procedures | 20 |
| UEENEEP019A | Locate and rectify faults in low voltage water heaters using set procedures | 20 |
| UEENEEP020A | Locate and rectify faults in low voltage motors using set procedures | 20 |
| UEENEEP021A | Disconnect / reconnect explosion-protected appliances and control devices connected to low voltage installation wiring | 60 |
| UEENEEP022A | Disconnect and reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles | 60 |
| UEENEEP023A | Attach flexible cables and plugs to electrical equipment connected to a HV supply | 40 |
| 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.

|  |  |  |
| --- | --- | --- |
| **Occupation / Work Function** | **Work Assistant** | |
| **Qualification Title** | **Certificate I in ElectroComms Skills** | |
| **Qualification Code** | **UEE10111** | |
| **Description** | 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. | |
| **Notes** | 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. | |
| **Unit Code** | **Unit Title** | **Hours** |
| **Core** |  |  |
| 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 |
| **Electives Group A** |  |  |
| UEENEEC001B | Maintain documentation | 20 |
| **Electives Group B** |  |  |
| UEENEEE103A | Solve problems in ELV single path circuits | 40 |
|  | **Total hours** | **180** |

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| **Occupation / Work Function** | **Computer Assembler** | |
| **Qualification Title** | **Certificate II in Computer Assembly and Repair** | |
| **Qualification Code** | **UEE20511** | |
| **Description** | 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 | |
| **Notes** | 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. | |
| **Unit Code** | **Unit Title** | **Hours** |
| **Core** |  |  |
| 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 |
| **Electives Group A** |  |  |
| 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 |
| **Electives Group 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 |
|  | **Total hours** | **360** |

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| **Occupation / Work Function** | **Electrician** | |
| **Qualification Title** | **Certificate III in Electrotechnology Electrician** | |
| **Qualification Code** | **UEE30811** | |
| **Description** | 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’. | |
| **Notes** | 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. | |
| **Unit Code** | **Unit Title** | **Hours** |
| **Core** |  |  |
| 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 |
| **Group A Electives** |  |  |
| UEENEED101A | Use computer applications relevant to a workplace | 20 |
| **Group B Electives** |  |  |
| UEENEEF102A | Install and maintain cabling for multiple access to telecommunication services | 120 |
|  | **Total Hours** | **1100** |

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| **Occupation / Work Function** | **Refrigeration and Air-Conditioning Mechanic** | |
| **Qualification Title** | **Certificate III in Air-conditioning and Refrigeration** | |
| **Qualification Code** | **UEE32211** | |
| **Description** | 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. | |
| **Notes** | 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. | |
| **Unit Code** | **Unit Title** | **Hours** |
| **Core** |  |  |
| 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 |
| **Unit Code** | **Unit Title (Cont)** | **Hours** |
| 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 |
| **Electives Group A** |  |  |
| UEENEEC001B | Maintain documentation | 20 |
| **Electives Group B** |  |  |
| UEENEEJ116A | Resolve problems in transport refrigeration systems | 20 |
| UEENEEJ117A | Resolve problems in ultra-low temperature refrigeration systems | 20 |
|  | **Total hours** | **1080** |

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| **Occupation / Work Function** | **Computer Technician** | |
| **Qualification Title** | **Certificate IV in Computer Systems** | |
| **Qualification Code** | **UEE40111** | |
| **Description** | 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. | |
| **Notes** | 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. | |
| **Unit Code** | **Unit Title** | **Hours** |
| **Core** |  |  |
| 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 |
| **Electives Group A** |  |  |
| UEENEEC001B | Maintain documentation | 20 |
| UEENEEC002B | 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 |
| **Electives Group B** |  |  |
| UEENEEA101A | Assemble electronic components | 40 |
| UEENEEA102A | Select electronic components for assembly | 20 |
| **Unit Code** | **Unit Title (Cont)** | **Unit Code** |
| 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 |
| **Electives Group C** |  |  |
| UEENEEC004B | Prepare specifications for the supply of materials and equipment for electrotechnology projects | 40 |
| UEENEEC005B | Estimate electrotechnology projects | 40 |
| UEENEED117A | Install and configure network systems for internetworking | 120 |
| UEENEED124A | Integrate multiple computer operating systems on a client server local area network | 80 |
| UEENEEH181A | Design electronic printed circuit boards | 40 |
|  | **Total hours** | **1240** |

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| **Occupation / Work Function** | **Production Controller** | |
| **Qualification Title** | **Diploma of Electrical and Instrumentation** | |
| **Qualification Code** | **UEE50211** | |
| **Description** | 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’. | |
| **Notes** | 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. | |
| **Unit Code** | **Unit Title** | **Hours** |
| **Core** |  |  |
| 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 |
| **Electives** |  |  |
| **Group C** |  |  |
| UEENEEI143A | Develop access control of electrical integrated systems using logic-based programming tools | 20 |
| **Group D** |  |  |
| UEENEEI156A | Develop and test code for microcontroller devices | 60 |
|  | **Total hours** | **1680** |

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| **Occupation / Work Function** | **Electronics Engineering Associate** | |
| **Qualification Title** | **Advanced Diploma of Electronics and Communications Engineering** | |
| **Qualification Code** | **UEE60211** | |
| **Description** | People gaining this qualification are able to design and validate/evaluate electronics and communicatons equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales | |
| **Notes** | 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. | |
| **Unit Code** | **Unit Title** | **Hours** |
| **Core** |  |  |
| 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 |
| **Electives Group A** |  |  |
| 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 |
| **Electives Group B** |  |  |
| UEENEEA101A | Assemble electronic components | 40 |
| UEENEED104A | 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 |
| **Electives Group C** |  |  |
| UEENEED103A | Evaluate and modify object oriented code programs | 40 |
| **Electives Group D** |  |  |
| UEENEEE126A | 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 |
| **Electives Group E** |  |  |
| UEENEED152A | Design embedded controller control systems | 80 |
| UEENEEE011C | Manage risk in electrotechnology activities | 60 |
| UEENEEE127A | Use advanced computational processes to provide solutions to energy sector engineering problems | 120 |
| UEENEEE129A | 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 |
|  | **Total hours** | **2160** |

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| **Occupation / Work Function** | **IT Systems Manager** | |
| **Qualification Title** | **Advanced Diploma of Computer Systems Engineering** | |
| **Qualification Code** | **UEE60411** | |
| **Description** | 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. | |
| **Notes** | 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. | |
| **Unit Code** | **Unit Title** | **Hours** |
| **Core** |  |  |
| 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 |
| **Electives Group A** |  |  |
| UEENEEE081A | Apply material science to solving electrotechnology engineering problems | 60 |
| UEENEEE082A | Apply physics to solving electrotechnology engineering problems | 60 |
| **Electives Group 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** |
| **Electives Group C** |  |  |
| UEENEED113A | Install and administer Unix based networked computers | 80 |
| UEENEED115A | Administer computer networks | 80 |
| UEENEED117A | Install and configure network systems for internetworking | 120 |
| **Electives Group D** |  |  |
| 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 |
| **Electives Group E** |  |  |
| 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 |
|  | **Total hours** | **2200** |

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| **Occupation / Work Function** | **Electrical Installations designer** | |
| **Qualification Title** | **Advanced Diploma of Engineering Technology - Electrical** | |
| **Qualification Code** | **UEE62111** | |
| **Description** | 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 | |
| **Notes** | 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. | |
| **Unit Code** | **Unit Title** | **Hours** |
| **Core** |  |  |
| 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 |
| **Electives Group A** |  |  |
| 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 |
| **Electives Group B** |  |  |
| UEENEEI150A | Develop, enter and verify discrete control programs for programmable controllers | 60 |
| **Electives Group C** |  |  |
| 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 |
| **Electives Group E** |  |  |
| 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 |
|  | **Total hours** | **2160** |

CONTACTS AND LINKS

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| **Industry Skills Council (ISC)** | | |
| EE-Oz Training Standards | This ISC is responsible for developing this **UEE11 Electrotechnology Training Package** 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: [ee-oz@ee-oz.com.au](mailto:ee-oz@ee-oz.com.au)  Web: <http://www.ee-oz.com.au> |
| **National Register for VET in Australia** | | |
| 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 |
| **Australian Government** | | |
| 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. | <http://www.innovation.gov.au>  You may also find Department of Education Employment and Workplace Relations website of use.  <http://www.deewr.gov.au> |
| **State Government** | | |
| 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:  [www.skills.vic.gov.au](http://www.skills.vic.gov.au/)  Approved Training Schemes:  <http://www.skills.vic.gov.au/corporate/publications/brochures-and-fact-sheets/apprenticeships-and-traineeships-in-victoria-industry-guides> |
| **Curriculum Maintenance Manager (CMM)** | | |
| 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: [g.adda@bhtafe.edu.au](mailto:g.adda@bhtafe.edu.au)  Web: <http://trainingsupport.skills.vic.gov.au/cmminf.cfm> |
| **State VET Regulatory Authority** | | |
| 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. | [www.vrqa.vic.gov.au](http://www.vrqa.vic.gov.au)  Phone: 03 9637 2806 |
| **National VET Regulatory Authority** | | |
| 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. | [www.asqa.gov.au](http://www.asqa.gov.au)  Info line: 1300 701 801 |
| **Industry Regulatory Body** | | |
| 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: [info@esv.vic.gov.au](mailto:info@esv.vic.gov.au)  Web: <http://www.esv.vic.gov.au/> |
| **WorkSafe** | | |
| WorkSafe Victoria | WorkSafe needs to provide written verification before High Risk Work Units can be added to an RTO’s scope of registration. | [www.worksafe.vic.gov.au](http://www.worksafe.vic.gov.au)  Info line: 1800 136 089 |

GLOSSARY

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| **Code** | Nationally endorsed Training Package qualification code. |
| **Title** | Nationally endorsed Training Package qualification title. |
| **Unit Code** | Nationally endorsed Training Package unit code. |
| **Unit Title** | Nationally endorsed Training Package unit title. |
| **Nominal Hours** | 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. |
| **Scope of Registration** | 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. |