

**UEE ELECTROTECHNOLOGY**  
**TRAINING PACKAGE**  
**Version 6**  
**WA NOMINAL HOURS GUIDE**

## Introduction

This Guide has been generated to enable the stakeholders in this Industry in Western Australia to participate in the managed implementation of the National UEE Electrotechnology Training Package.

This Guide is designed to aid Registered Training Organisations (RTOs) to convert from existing Training Package qualifications to new Training Package qualifications within the scope of their training delivery.

The Guide should be read in conjunction with the endorsed components of the Training Package

Version 6 of the UEE Electrotechnology Training Package was released by Training.Gov.Au (TGA) on the 08/02/2023

## Transition Arrangements

Registered Training Organisations (RTOs) are required to deliver Training Package qualifications in accordance with the Standards for RTOs. For further information visit the Training Accreditation Council website [www.tac.wa.gov.au](http://www.tac.wa.gov.au)

## Nominal Hours

Nominal hours are the hours of training notionally required to achieve the outcomes of units of competency.

Nominal hours are identified for nationally endorsed qualifications. Nominal hours may vary for a qualification depending on the selection of units of competency.

In Western Australia, nominal hours are used as a mechanism for funding allocation.

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## Qualifications and Nominal Hours

The following table provides a summary of the qualifications and nominal hours in the training package.

National Code	National Title	Nominal Hours
UEE10120	Certificate I in ElectroComms Skills	162
UEE20120	Certificate II in Split Air Conditioning and Heat Pump Systems	324
UEE20520	Certificate II in Computer Assembly and Repair	324
UEE20720	Certificate II in Data and Voice Communications	378
UEE20920	Certificate II in Electronic Assembly	324
UEE21020	Certificate II in Fire Alarms Servicing	324
UEE21220	Certificate II in Antennae Equipment	324
UEE21420	Certificate II in Remote Area Power Supply Maintenance	324
UEE21620	Certificate II in Security Assembly and Set-up	324
UEE21720	Certificate II in Technical Support	324
UEE21920	Certificate II in Electronics	324
UEE22020	Certificate II in Electrotechnology (Career Start)	369
UEE22120	Certificate II in Sustainable Energy (Career Start)	324
UEE30120	Certificate III in Business Equipment	954
UEE30220	Certificate III in Computer Systems Equipment	954
UEE30320	Certificate III in Custom Electronics Installations	954
UEE30420	Certificate III in Data and Voice Communications	954
UEE30620	Certificate III in Electrical Machine Repair	954
UEE30720	Certificate III in Switchgear and Controlgear	954
UEE30820	Certificate III in Electrotechnology Electrician	999
UEE30920	Certificate III in Electronics and Communications	954
UEE31020	Certificate III in Fire Protection Control	954
UEE31220	Certificate III in Instrumentation and Control	954

UEE31420	Certificate III in Security Equipment	954
UEE32120	Certificate III in Appliance Service	972
UEE32220	Certificate III in Air Conditioning and Refrigeration	1089
UEE33020	Certificate III in Electrical Fitting	954
UEE40120	Certificate IV in Computer Systems	1152
UEE40220	Certificate IV in Electrical - Data and Voice Communications	378
UEE40320	Certificate IV in Installation Inspection and Audits	396
UEE40420	Certificate IV in Electrical - Instrumentation	396
UEE40520	Certificate IV in Electrical - Air Conditioning Split Systems	405
UEE40620	Certificate IV in Electrotechnology - Systems Electrician	396
UEE40720	Certificate IV in Electronics and Communications	1152
UEE40820	Certificate IV in Electrical - Fire Protection Control Systems	396
UEE40920	Certificate IV in Industrial Electronics and Control	396
UEE41020	Certificate IV in Energy Management and Control	396
UEE41120	Certificate IV in Electrical - Lift Systems	396
UEE41223	Certificate IV in Rail Signalling	459
UEE41520	Certificate IV in Video and Audio Systems	1152
UEE41720	Certificate IV in Rail - Communications and Network Systems	1152
UEE42120	Certificate IV in Electrotechnology - Electrical Contracting	324
UEE42220	Certificate IV in Instrumentation and Control	1152
UEE42622	Certificate IV in Hazardous areas - Electrical	396
UEE42720	Certificate IV in Air Conditioning and Refrigeration Servicing	1215
UEE42820	Certificate IV in Air-conditioning Systems Energy Management and Control	1215
UEE42920	Certificate IV in Refrigeration and Air Conditioning Systems	1224
UEE43020	Certificate IV in Electrical Equipment and Systems	486
UEE43220	Certificate IV in Industrial Automation and Control	1152
UEE43322	Certificate IV in Electrical - Renewable Energy	396

UEE50122	Diploma of Computer Systems Engineering	1440
UEE50220	Diploma of Electrical and Instrumentation	684
UEE50320	Diploma of Electrical and Refrigeration and Air Conditioning	1647
UEE50420	Diploma of Electrical Engineering	684
UEE50520	Diploma of Electronics and Communications Engineering	1440
UEE50722	Diploma of Renewable Energy Engineering	684
UEE50920	Diploma of Industrial Electronics and Control Engineering	684
UEE51020	Diploma of Instrumentation and Control Engineering	1440
UEE51120	Diploma of Engineering Technology - Refrigeration and Air Conditioning	1440
UEE51220	Diploma of Air Conditioning and Refrigeration Engineering	1503
UEE53020	Diploma of Electrical Systems Engineering	720
UEE60220	Advanced Diploma of Electronics and Communications Engineering	1944
UEE60620	Advanced Diploma of Industrial Electronics and Control Engineering	1188
UEE60922	Advanced Diploma of Renewable Energy Engineering	1188
UEE61222	Advanced Diploma of Engineering - Explosion protection	1188
UEE61521	Advanced Diploma of Instrumentation and Control Engineering	1944
UEE61720	Advanced Diploma of Engineering Technology - Electronics	1944
UEE62022	Advanced Diploma of Engineering Technology - Renewable Energy	1944
UEE62122	Advanced Diploma of Engineering Technology - Electrical	1944
UEE62220	Advanced Diploma of Electrical - Engineering	1188
UEE62320	Advanced Diploma of Electrical Engineering - Coal Mining	1188
UEE62420	Advanced Diploma of Engineering Technology - Air Conditioning and Refrigeration	1944
UEE62520	Advanced Diploma of Air Conditioning and Refrigeration Engineering	2007
UEE63020	Advanced Diploma of Electrical Systems Engineering	1278

## Skill Sets and Nominal Hours

The following table provides a summary of the skill sets and nominal hours in the training package.

National Code	National Title	Nominal Hours
UEESS00131	Data Communications - ACMA 'Open' Cabling Provider Skill Set	252
UEESS00132	Data Communications - ACMA 'Restricted' Telecommunications Cabling Registration Skill Set	126
UEESS00133	Restricted - Disconnection/Reconnection of Fixed Wired Low Voltage Electrical Equipment	72
UEESS00134	Data Communications - Install Aerial Communication Cables Skill Set	270
UEESS00135	Instrumentation - Programmable Control Systems Skill Set	108
UEESS00137	Data Communications - Install Below Ground Communication Cables Skill Set	288
UEESS00138	Data Communications - Test, Report and Rectify Faults in Data and Voice Installations Skill Set	36
UEESS00139	Data Communications - Restricted Telecommunications Cabler Registration - ACMA Skill Set	180
UEESS00140	Data Communications - Premises Cabling for NBN Rollout Skill Set	144
UEESS00141	Electrical - Providing Advice on Lighting Products Skill Set	54
UEESS00142	Data Communications - Plan an Integrated Cabling Installation System Skill Set	72
UEESS00143	Instrumentation - Develop an Integrated System Interface for Access Through a Touch Screen Skill Set	20
UEESS00144	Instrumentation - Develop Integrated Systems Skill Set	18
UEESS00145	Instrumentation - Plan the Installation of Integrated Systems Skill Set	18
UEESS00146	RAC - Design Ammonia Refrigeration Systems Skill Set	117
UEESS00147	RAC- Design Complex Carbon Dioxide Refrigeration Systems Skill Set	117
UEESS00148	RAC - Design Hydrocarbon Refrigeration Systems Skill Set	117
UEESS00149	RAC - Design Secondary Refrigeration Systems Skill Set	108
UEESS00150	RAC - Install and Commission Ammonia Refrigeration Systems Skill Set	45
UEESS00151	RAC - Install and Commission Carbon Dioxide Refrigeration Systems Skill Set	45
UEESS00152	RAC - Install and Commission Flammable Refrigerant Air Cond. and Refrigeration Systems Skill Set	27
UEESS00153	RAC - Operate Ammonia Refrigeration Plant Skill Set	45
UEESS00154	RAC - Service and Repair Ammonia Refrigeration Systems Skill Set	27

UEESS00155	RAC - Service and Repair Carbon Dioxide Refrigeration and Heat Pump Systems Skill Set	27
UEESS00156	RAC - Service and Repair Carbon Dioxide Refrigeration Systems Skill Set	27
UEESS00157	RAC - Service and Repair Flammable Refrigerant Refrigeration and Air Conditioning Systems Skill Set	27
UEESS00158	RAC - Service and Repair Secondary Refrigeration Systems Skill Set	18
UEESS00164	Sustainable - Energy Efficiency Auditor Skill Set	108
UEESS00169	Data Communications - Install and Modify Performance Data Communication Structured Cabling Skill Set	288
UEESS00170	Install and Modify Performance Data Communication Optical Fibre Cabling Skill Set	288
UEESS00171	Fire Detection and Alarm Systems - Installation, Maintenance, Commissioning and Servicing Skill Set	306
UEESS00172	Attachment of Cords and Plugs to Single Phase Low Voltage Electrical Equipment Skill Set	36
UEESS00173	Attachment of Cords/Cables and Plugs to Low Voltage Three Phase Electrical Equipment Skill Set	54
UEESS00174	Electrical Safety Testing of Electrical Cord Connected Equipment and Cord Assemblies Skill Set	36
UEESS00175	Apply Compliance Requirements to all Aspects of Electrical Work Skill Set	18
UEESS00176	Apply Currency of Safe Working Practices and Compliance Verification of Electrical Installations	18
UEESS00177	Data Communications - Plan an Integrated Cabling Installation System - Electricians Skill Set	72
UEESS00178	Electrical - Develop and Implement Maintenance Programs Skill Set	108
UEESS00180	Electrical - Plan, Manage and Report on Electrical Projects Skill Set	162
UEESS00181	Electrical – Inspect, Test and Maintain Emergency Lighting and Alarm Systems and Equipment	45
UEESS00182	Identify and Isolate Multiple Supply Systems	20
UEESS00184	RAC - Install, Commission, Service and Maintain Variable Refrigerant Flow Air Conditioning Systems	125
UEESS00187	Electrical - Install and commission whole current electricity meters Skill Set	24
UEESS00188	RAC - Inspect, Test and Repair Fire and Smoke Control Features of Mechanical Services Systems	162
UEESS00189	Rail Signalling Constructor Skill Set	117
UEESS00190	Electrical - Rail Signalling Principles Skill Set	18
UEESS00191	Grid-connected Battery Storage Systems Designer-Installer Skill Set	117
UEESS00192	Grid-connected Battery Storage Systems Installer Skill Set	90
UEESS00193	Grid-connected Photovoltaic and Battery Storage Systems Designer Skill Set	115
UEESS00194	Grid-connected Photovoltaic Systems Designer-Installer Skill Set	153

UEESS00195	Grid-connected Photovoltaic Systems Installer Skill Set	90
UEESS00196	Grid-connected Renewable Energy System Site Surveyor Skill Set	43
UEESS00197	Grid-connected Renewable Energy Systems Inspector Skill Set	41
UEESS00198	Hybrid Photovoltaic, Wind and Battery Storage Systems Installer Skill Set	144
UEESS00199	Micro-hydro Systems Designer Installer Skill Set	126
UEESS00200	Micro-hydro Systems Designer Skill Set	72
UEESS00201	Micro-hydro Systems Installer Skill Set	54
UEESS00202	Micro-grid Renewable Energy Systems Inspector Skill Set	41
UEESS00203	Micro-grid Systems Design Coordinator Skill Set	61
UEESS00204	Micro-grid Systems Installation and Maintenance Coordinator Skill Set	52
UEESS00205	Off-grid Photovoltaic/Generating Set Systems Designer-Installer Skill Set	189
UEESS00206	Off-grid Photovoltaic/Generating Set Systems Installer Skill Set	117
UEESS00207	Off-grid Photovoltaic Generating Set Systems Designer Skill Set	88
UEESS00208	Off-grid Renewable Energy System Site Surveyor Skill Set	52
UEESS00209	Off-grid Renewable Energy Systems Inspector Skill Set	41
UEESS00210	Sustainable - Electrical Installations Sustainability Strategies Skill Set	18
UEESS00211	Sustainable - Energy Assessment of Commercial Facilities Skill Set	154
UEESS00212	Sustainable - Energy Assessment of Industrial Properties and Enterprises Skill Set	154
UEESS00213	Sustainable - Energy Assessment of Residential, Office and Retail Premises Skill Set	118
UEESS00214	Sustainable - Energy Efficiency Systems Designer Skill Set	180
UEESS00215	Sustainable - Energy Efficiency Systems Developer Skill Set	306
UEESS00216	Sustainable - Identify Energy Efficiency Strategies Skill Set	144
UEESS00217	Wind Energy Systems Designer-Installer Skill Set	142
UEESS00218	Wind Energy Systems Designer Skill Set	72
UEESS00219	Wind Energy Systems Installer Skill Set	70



## Units of Competency and Nominal Hours

The following table provides a summary of the units of competency and nominal hours in the training package.

National Code	National Title	Nominal Hours	Points
UEEAS0001	Assemble electronic components	36	40
UEEAS0002	Conduct quality and functional tests on assembled electronic apparatus	18	20
UEEAS0003	Modify electronic sub-assemblies	36	40
UEEAS0004	Select electronic components for assembly	18	20
UEEAS0005	Set up and check electronic component assembly machines	36	40
UEEAS0006	Use lead-free soldering techniques	36	40
UEEAS0007	Assemble, mount and connect control gear and switchgear	36	40
UEEAS0008	Fabricate and assemble bus bars	36	40
UEEAS0009	Mount and wire control panel equipment	36	40
UEECD0001	Analyse materials for suitability in electrical equipment	72	80
UEECD0002	Analyse static and dynamic parameters of electrical equipment	72	80
UEECD0003	Apply industry and community standards to engineering activities	18	20
UEECD0004	Apply material science to solving electrotechnology engineering problems	54	60
UEECD0005	Apply physics to solving electrotechnology engineering problems	54	60
UEECD0006	Apply technologies and concepts to energy sector work activities	36	40
UEECD0007	Apply work health and safety regulations, codes and practices in the workplace	18	20
UEECD0008	Carry out preparatory energy sector work activities	54	60
UEECD0009	Carry out routine work activities in an energy sector environment	36	40
UEECD0010	Compile and produce an energy sector detailed report	54	60
UEECD0011	Comply with scheduled and preventative maintenance program processes	18	20
UEECD0012	Contribute to risk management in electrotechnology systems	18	20
UEECD0013	Develop and implement energy sector maintenance programs	54	60
UEECD0014	Develop design briefs for electrotechnology projects	36	40

UEECD0015	Develop engineering solutions to photonic system problems	72	80
UEECD0016	Document and apply measures to control WHS risks associated with electrotechnology work	18	20
UEECD0017	Establish and follow a competency development plan in an electrotechnology engineering discipline	108	120
UEECD0018	Establish, maintain and evaluate energy sector WHS/OHS systems	54	60
UEECD0019	Fabricate, assemble and dismantle utilities industry components	36	40
UEECD0020	Fix and secure electrotechnology equipment	18	20
UEECD0021	Identify and select components, accessories and materials for energy sector work activities	18	20
UEECD0022	Identify building techniques, methods and materials used in energy sector work activities	36	40
UEECD0023	Identify effects of energy on machinery and materials in an energy sector environment	108	120
UEECD0024	Implement and monitor energy sector WHS policies and procedures	18	20
UEECD0025	Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits	36	40
UEECD0026	Manage risk in electrotechnology activities	54	60
UEECD0027	Participate in development and follow a personal competency development plan	18	20
UEECD0028	Plan an integrated cabling installation system	36	40
UEECD0029	Plan electrotechnology projects	54	60
UEECD0030	Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software	54	60
UEECD0031	Prepare engineering drawings using manual drafting and CAD for electrotechnology applications	54	60
UEECD0032	Produce detailed electrotechnology/utilities drawings using CAD equipment and software	54	60
UEECD0033	Produce products for carrying out energy sector work activities	54	40
UEECD0034	Produce routine tools/devices for carrying out energy sector work activities	36	40
UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	18	20
UEECD0036	Provide engineering solutions for problems in complex multiple path circuits	54	60
UEECD0037	Provide engineering solutions for uses of materials and thermodynamic effects	72	80
UEECD0038	Provide solutions and report on routine electrotechnology problems	54	60
UEECD0039	Provide solutions to basic engineering computational problems	54	60
UEECD0040	Solve basic problems electronic and digital equipment and circuits	72	80
UEECD0041	Solve electrotechnical engineering problems	54	60

UEECD0042	Solve problems in ELV single path circuits	36	40
UEECD0043	Solve problems in direct current circuits	72	80
UEECD0044	Solve problems in multiple path circuits	36	40
UEECD0045	Solve problems in multiple path extra-low voltage (ELV) a.c. circuits	36	40
UEECD0046	Solve problems in single path circuits	36	40
UEECD0047	Supervise and coordinate energy sector work activities	36	40
UEECD0048	Undertake computations in an energy sector environment	108	120
UEECD0049	Use advanced computational processes to provide solutions to energy sector engineering problems	72	80
UEECD0050	Use and maintain the integrity of a portable gas detection device	18	20
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications	36	40
UEECD0052	Use routine equipment/plant/technologies in an energy sector environment	36	40
UEECD0053	Write specifications for computer systems engineering projects	36	40
UEECD0054	Write specifications for electronics and communications engineering projects	36	40
UEECD0055	Write specifications for industrial electronics and control projects	36	40
UEECD0056	Apply methods to maintain currency of industry developments	18	20
UEECD0057	Manage electrotechnology projects	36	40
UEECD0059	Write specifications for electrical engineering projects	36	40
UEECD0060	Write specifications for electrotechnology engineering projects	36	40
UEECD0061	Write specifications for refrigeration and air conditioning engineering projects	36	40
UEECD0062	Write specifications for renewable energy engineering projects	36	40
UEECD0063	Write work activity reports	18	20
UEECD0064	Interpret, produce and modify electrotechnology drawings	36	40
UEECO0001	Estimate electrotechnology projects	36	40
UEECO0002	Maintain documentation	18	20
UEECO0003	Manage contract variations	36	40
UEECO0004	Participate in appliance servicing work and competency development activities	54	60
UEECO0005	Participate in business equipment work and competency development activities	54	60

UEECO0006	Participate in computer equipment work and competency development activities	54	60
UEECO0007	Participate in electronics and communications work and competency development activities	54	60
UEECO0008	Participate in fire protection control work and competency development activities	54	60
UEECO0009	Participate in instrumentation and control work and competency development activities	54	60
UEECO0010	Participate in refrigeration and air conditioning work and competency development activities	54	60
UEECO0011	Participate in security equipment work and competency development activities	54	60
UEECO0012	Participate in voice and data communications work and competency development activities	54	60
UEECO0013	Prepare specifications for the supply of materials and equipment for electrotechnology projects	36	40
UEECO0014	Prepare tender submissions for electrotechnology projects	54	60
UEECO0015	Provide quotations for installation or service jobs	18	20
UEECO0016	Receive and store materials and equipment for electrotechnology work	18	20
UEECO0017	Source and purchase material/parts for installation or service jobs	18	20
UEECO0018	Contribute to the commercialisation of products/applications/services	108	120
UEECO0019	Contribute to the conduct of a research project	108	120
UEECO0020	Contribute to the development of a product/application/service	108	120
UEECO0021	Contribute to the planning of a research project	108	120
UEECO0022	Participate in electrical machine repair work and competency development activities	54	60
UEECO0023	Participate in electrical work and competency development activities	54	60
UEECO0024	Participate in switchgear and control gear work and competency development activities	54	60
UEECO0025	Provide quotations for inspection and compliance audit services	18	20
UEECS0001	Administer computer networks	72	80
UEECS0002	Analyse and implement biometric measuring techniques and applications	108	120
UEECS0003	Assemble, set up and test computing devices	72	80
UEECS0004	Commission industrial computer systems	18	20
UEECS0005	Design and implement advanced routing for internetworking systems	90	100
UEECS0006	Design and implement multi-layer switching for internetworking systems	90	100
UEECS0007	Design and implement network systems for internetworking	108	120

UEECS0008	Design and implement remote access for internetworking systems	90	100
UEECS0009	Design and implement security for internetworking systems	90	100
UEECS0010	Design and implement wireless LANs/WANs for internetworking systems	90	100
UEECS0011	Design and manage enterprise computer networks	72	80
UEECS0012	Design embedded controller control systems	72	80
UEECS0013	Develop and validate biometric equipment/systems installation	108	120
UEECS0014	Develop computer network services	108	120
UEECS0015	Develop energy sector computer network applications infrastructure	72	80
UEECS0016	Develop energy sector directory services	72	80
UEECS0017	Develop industrial control programs for microcomputer equipped devices	54	60
UEECS0018	Develop web pages for engineering applications	36	40
UEECS0019	Develop, implement and test object-oriented code	126	140
UEECS0020	Evaluate and modify object-oriented code programs	36	40
UEECS0021	Install and administer UNIX/LINUX-based networked computers	72	80
UEECS0022	Install and configure a client computer operating system and software	36	40
UEECS0023	Install and configure network systems for internetworking	108	120
UEECS0024	Integrate multiple computer operating systems on a client server local area network	72	80
UEECS0025	Modify/redesign industrial computer systems	18	20
UEECS0026	Plan industrial computer systems projects	54	60
UEECS0027	Provide programming solution for computer systems engineering problems	54	60
UEECS0028	Select, install, configure and test multimedia components	36	40
UEECS0029	Set up and configure basic local area network (LAN)	72	80
UEECS0030	Set up, configure and test biometric devices	36	40
UEECS0031	Set up, create and implement content for a web server	108	120
UEECS0032	Support computer hardware and software for engineering applications	108	120
UEECS0033	Use engineering applications software on personal computers	36	40
UEEDV0001	Assemble and connect telecommunication frames and cabinets	54	60

UEEDV0002	Install aerial telecommunication cables	36	40
UEEDV0003	Install and connect cabling for direct access to telecommunications service	18	20
UEEDV0004	Install and connect data and voice communication equipment	36	40
UEEDV0005	Install and maintain cabling for multiple access to telecommunication services	72	80
UEEDV0006	Install and modify optical fibre performance data communication cabling	36	40
UEEDV0007	Install underground communication cables	36	40
UEEDV0008	Install, modify and verify coaxial and structured communication copper cabling	36	40
UEEDV0009	Select and arrange data and voice equipment for local area networks	36	40
UEEDV0010	Select and arrange equipment for wireless communication networks	36	40
UEEDV0011	Set up and configure basic data communication systems	36	40
UEEDV0012	Set up and configure the wireless capabilities of communications and data storage devices	36	40
UEEDV0013	Solve problems in voice and data communications circuits	36	40
UEEDV0014	Test, report and rectify faults in data and voice installations	36	40
UEEEEC0001	Analyse the performance of wireless-based electronic communication systems	36	40
UEEEEC0002	Assemble and install reception antennae and signal distribution equipment	54	60
UEEEEC0003	Assemble and set up basic security systems	72	80
UEEEEC0004	Assemble and set up fixed video/audio components and systems in buildings and premises	108	120
UEEEEC0005	Assess electronic apparatus compliance	54	60
UEEEEC0006	Carry out repairs of predictable faults in video and audio replay/recording apparatus	108	120
UEEEEC0007	Commission electronics and communications systems	18	20
UEEEEC0008	Commission large fire protection systems	36	40
UEEEEC0009	Commission satellite and microwave communication systems	36	40
UEEEEC0010	Design and develop advanced digital systems	36	40
UEEEEC0011	Design and develop electronics/computer systems projects	36	40
UEEEEC0012	Design custom electronic equipment installations	108	120
UEEEEC0013	Design electronic printed circuit boards	36	40
UEEEEC0014	Design signal-conditioning sub-systems	72	80

UEEEEC0015	Develop basic plans for integrating security systems	36	40
UEEEEC0016	Develop engineering solutions to RF amplifier problems	36	40
UEEEEC0017	Develop engineering solutions to analogue electronic problems	72	80
UEEEEC0018	Develop engineering solutions to audio electronic problems	54	60
UEEEEC0019	Develop software solutions for microcontroller-based systems	54	60
UEEEEC0020	Develop solutions for air surveillance apparatus and systems	108	120
UEEEEC0021	Diagnose and rectify faults in air navigation circuits and systems	108	120
UEEEEC0022	Diagnose and rectify faults in camera circuits and equipment	54	60
UEEEEC0023	Diagnose and rectify faults in digital transmission circuits and systems	72	80
UEEEEC0024	Diagnose and rectify faults in electronic display circuits	54	60
UEEEEC0025	Diagnose and rectify faults in recording and replay equipment	54	60
UEEEEC0026	Enter and verify programs for fire protection systems	36	40
UEEEEC0027	Enter instructions and test wired and wireless security systems	36	40
UEEEEC0028	Fault find and repair complex power supplies	36	40
UEEEEC0029	Fault find and repair electronic apparatus	36	40
UEEEEC0030	Fault find and repair electronic medical equipment	108	120
UEEEEC0031	Fault find and repair global positioning systems	54	60
UEEEEC0032	Fault find and repair high-volume office equipment	108	120
UEEEEC0033	Fault find and repair navigation systems	54	60
UEEEEC0034	Fault find and repair radar apparatus and systems	108	120
UEEEEC0035	Fault find and repair satellite-based surveillance and observation systems	54	60
UEEEEC0036	Fault find and repair sonar apparatus and systems	108	120
UEEEEC0037	Fault find and repair telecommunication apparatus and systems	54	60
UEEEEC0038	Find and repair microwave amplifier section faults in electronic apparatus	36	40
UEEEEC0039	Install and test microwave antennae and waveguides	54	60
UEEEEC0040	Install commercial video/audio system components	108	120
UEEEEC0041	Install fire detection and warning system apparatus	36	40

UEEEEC0042	Install large security systems	90	100
UEEEEC0043	Manage computer systems/electronics projects	36	40
UEEEEC0044	Modify - redesign electronics and communications systems	18	20
UEEEEC0045	Modify digital signal processing (DSP) based sub-systems	72	80
UEEEEC0046	Operate and maintain amateur radio communication stations	36	40
UEEEEC0047	Plan large electronic projects	54	60
UEEEEC0048	Program and commission commercial access control security systems	54	60
UEEEEC0049	Program and commission commercial security closed-circuit television systems	54	60
UEEEEC0050	Program and commission commercial security systems	54	60
UEEEEC0051	Program and commission commercial video/audio systems	36	40
UEEEEC0052	Program and test large security systems	108	120
UEEEEC0053	Provide engineering solutions to air traffic control system problems	36	40
UEEEEC0054	Provide gate array solutions for complex electronics systems	54	60
UEEEEC0055	Repair basic computer equipment faults by replacement of modules/sub-assemblies	36	40
UEEEEC0056	Repair predictable faults in audio components	36	40
UEEEEC0057	Repair predictable faults in general electronic apparatus	36	40
UEEEEC0058	Repair predictable faults in television receivers	108	120
UEEEEC0059	Repair routine business equipment faults	108	120
UEEEEC0060	Repairs basic electronic apparatus faults by replacement of components	36	40
UEEEEC0061	Set up and adjust commercial radio frequency (RF) transmission and reception systems	54	60
UEEEEC0062	Set up and test residential video/audio equipment	36	40
UEEEEC0063	Solve fundamental electronic communications system problems	36	40
UEEEEC0064	Solve oscillator problems	36	40
UEEEEC0065	Solve problems in basic electronic circuits	90	100
UEEEEC0066	Troubleshoot amplifiers in an electronic apparatus	72	80
UEEEEC0067	Troubleshoot basic amplifier circuits	36	40
UEEEEC0068	Troubleshoot communication systems	72	80



UEEEEC0069	Troubleshoot digital sub-systems	72	80
UEEEEC0070	Troubleshoot faults in television receivers	108	120
UEEEEC0071	Troubleshoot fire protection systems	36	40
UEEEEC0072	Troubleshoot microcontroller-based hardware systems	36	40
UEEEEC0073	Troubleshoot professional audio reproduction components	108	120
UEEEEC0074	Troubleshoot resonance circuits in an electronic apparatus	72	80
UEEEEC0075	Troubleshoot single phase input d.c power supplies	36	40
UEEEEC0076	Verify compliance and functionality of fire protection system installations	54	60
UEEEEC0077	Verify functionality and compliance of custom electronic installations	36	40
UEEEL0001	Apply compliance requirements to all aspects of electrical work	18	20
UEEEL0002	Apply currency of safe working practices and compliance verification of electrical installations	18	20
UEEEL0003	Arrange circuits, control and protection for electrical installations	36	40
UEEEL0004	Carry out basic repairs to electrical components and equipment	36	40
UEEEL0005	Develop and connect electrical control circuits	72	80
UEEEL0006	Develop detailed and complex drawings for electrical systems using CAD systems	54	60
UEEEL0007	Develop detailed electrical drawings	54	60
UEEEL0008	Evaluate and modify low voltage heating equipment and controls	18	20
UEEEL0009	Evaluate and modify low voltage lighting circuits, equipment and controls	18	20
UEEEL0010	Evaluate and modify low voltage socket outlets circuits	18	20
UEEEL0011	Evaluate performance of low voltage electrical apparatus	36	40
UEEEL0012	Install low voltage wiring, appliances, switchgear and associated accessories	36	40
UEEEL0014	Isolate, test and troubleshoot low voltage electrical circuits	54	60
UEEEL0015	Manage large electrical projects	36	40
UEEEL0016	Provide advice on effective and energy efficient lighting products	18	20
UEEEL0017	Repair and maintain mechanical components of electrical machines	36	40
UEEEL0018	Select wiring systems and select cables for low voltage electrical installations	54	60
UEEEL0019	Solve problems in direct current (d.c.) machines	27	30

UEEEL0020	Solve problems in low voltage a.c. circuits	72	80
UEEEL0021	Solve problems in magnetic and electromagnetic devices	27	30
UEEEL0022	Supply effective and efficient lighting products for domestic and small commercial applications	36	40
UEEEL0023	Terminate cables, cords and accessories for low voltage circuits	36	40
UEEEL0024	Test and connect alternating current (a.c.) rotating machines	45	50
UEEEL0025	Test and connect transformers	27	30
UEEEL0026	Align and install traction lift equipment	18	20
UEEEL0027	Carry out low voltage electrical field testing and report findings	54	60
UEEEL0028	Conduct compliance and functional verification of electrical apparatus and existing circuits	36	40
UEEEL0029	Conduct compliance inspection of LV electrical installations with demand exceeding 100 A per phase	36	40
UEEEL0030	Conduct compliance inspection of single phase LV electrical installations	54	60
UEEEL0031	Conduct compliance inspection of special LV electrical installations	54	60
UEEEL0032	Conduct electrical tests on HV electrical machines	54	60
UEEEL0033	Conduct electrical tests on LV electrical machines	36	40
UEEEL0034	Conduct mechanical tests on electrical machines and components	36	40
UEEEL0035	Design effective and efficient lighting for public, open and sports areas	18	20
UEEEL0036	Design effective and efficient lighting for residential and commercial buildings	18	20
UEEEL0037	Design electrical installations with a low voltage demand greater than 400 A per phase	36	40
UEEEL0038	Design switchboards rated for high fault levels (greater than 400 A)	54	60
UEEEL0039	Design, install and verify compliance and functionality of general electrical installations	36	40
UEEEL0040	Develop compliance policies and plans to conduct an electrical contracting business	72	80
UEEEL0041	Develop engineering solution for synchronous machine and control problems	54	60
UEEEL0042	Develop engineering solutions for d.c. machine and control problems	54	60
UEEEL0043	Develop engineering solutions for induction machine and control problems	54	60
UEEEL0044	Diagnose and rectify faults in complex lift systems	36	40
UEEEL0045	Diagnose and rectify faults in traction lift systems	72	80
UEEEL0046	Find and repair faults in LV d.c. electrical apparatus and circuits	54	60

UEEEL0047	Identify, shut down and restart systems with alternate supplies	18	20
UEEEL0049	Install and maintain emergency safety systems	54	60
UEEEL0050	Install and replace low voltage current transformer metering	18	20
UEEEL0051	Investigate and report on electrical incidents and causes	54	60
UEEEL0052	Maintain and service traction lift systems and equipment	36	40
UEEEL0053	Maintain operation of electrical marine equipment and systems	54	60
UEEEL0054	Maintain operation of electrical mining equipment and systems	54	60
UEEEL0055	Overhaul and repair major switchgear and control gear	54	60
UEEEL0056	Place and connect electrical coils	36	40
UEEEL0057	Plan electrical installations with a low voltage demand up to 400 A per phase	36	40
UEEEL0058	Plan large electrical projects	54	60
UEEEL0059	Plan low voltage switchboard and control panel layouts	36	40
UEEEL0060	Prepare quotations for the supply of effective and efficient lighting products for lighting projects	18	20
UEEEL0061	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect	18	20
UEEEL0062	Provide engineering solutions to problems in complex polyphase power circuits	54	60
UEEEL0063	Provide photometric data for illumination system design	54	60
UEEEL0064	Rewind HV three phase induction machines rated for voltages above 3.3 kV	54	60
UEEEL0065	Rewind HV three phase induction machines rated for voltages to 3.3 kV	54	60
UEEEL0066	Rewind LV direct current machines	54	60
UEEEL0067	Rewind single phase machines	36	40
UEEEL0068	Rewind three phase low voltage induction machines	54	60
UEEEL0069	Select and arrange equipment for special LV electrical installations	54	60
UEEEL0070	Select effective and efficient light sources and luminaries for given locations and designs	54	60
UEEEL0071	Select low voltage power factor correction equipment	36	40
UEEEL0072	Set up and place LV electrical apparatus and associated circuits into service	36	40
UEEEL0073	Verify compliance and functionality of special LV electrical installations	36	40
UEEEL0074	Wind electrical coils	36	40

UEEEL0075	Inspect, test and maintain emergency alarm systems and equipment	20	20
UEEEL0076	Inspect, test and maintain emergency lighting systems	25	20
UEEEL0077	Evaluate and report on the performance of LV machines	90	100
UEEEL0078	Install and commission whole current electricity meters	18	20
UEEEL0079	Plan and analyse LV electrical apparatus	54	60
UEEEL0080	Plan and analyse wiring systems, circuits, control and protection for electrical installations	90	100
UEEHA0004	Enter a classified hazardous area to undertake work related to electrical equipment	36	40
UEEHA0008	Design gas detection systems	18	20
UEEHA0016	Assess the fitness-for-purpose of explosion-protected equipment	54	60
UEEHA0017	Classify areas where a combustible dust hazard may arise	54	60
UEEHA0018	Classify areas where flammable gas or vapour hazards may arise	54	60
UEEHA0019	Conduct a conformity assessment review of explosion-protected equipment	36	40
UEEHA0020	Conduct detailed inspection of electrical installations for hazardous areas	36	40
UEEHA0021	Design explosion-protected electrical systems and installations	54	60
UEEHA0022	Determine the explosion-protection requirements to meet a specified classified hazardous area	36	40
UEEHA0023	Develop and manage periodic electrical inspection and maintenance programs for hazardous areas	18	20
UEEHA0024	Inspect, maintain and fit plugs/couplers for reeling, trailing and flexible cables - coal mining	54	60
UEEHA0025	Install explosion-protected equipment and associated apparatus and wiring systems	54	60
UEEHA0026	Maintain equipment associated with hazardous areas	54	60
UEEHA0027	Manage continuous supervision inspection of electrical installations for hazardous areas	36	40
UEEHA0028	Perform compliance audits of hazardous areas and related electrical installation	54	60
UEEHA0029	Plan electrical installations for hazardous areas	18	20
UEEHA0030	Repair reeling, trailing and flexible cables used in coal mining	54	60
UEEHA0031	Supervise repair and overhaul of explosion-protected equipment type flameproof (Ex d)	54	60
UEEHA0032	Supervise repair and overhaul of explosion-protected equipment type increased safety (Ex e)	54	60
UEEHA0033	Supervise repair and overhaul of explosion-protected equipment type intrinsically safe (Ex i)	54	60
UEEHA0034	Supervise repair and overhaul of explosion-protected equipment type pressurised (Ex p)	54	60

UEEHA0035	Supervise repair and overhaul of explosion-protected rotating machines	54	60
UEEHA0036	Test reeling, trailing and flexible cables and their attachments used in coal mining	54	60
UEEHA0037	Verify compliance of repaired reeling, trailing and flexible cables and attachments - coal mining	54	60
UEEHA0038	Conduct visual and close inspection of electrical installations for hazardous areas	36	40
UEEHA0039	Supervise repair and overhaul of explosion-protected equipment type Group III ('t')	54	60
UEEIC0001	Analyse complex electronic circuits controlling fluids	72	80
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices	18	20
UEEIC0003	Assist in commissioning process and instrumentation control systems	36	40
UEEIC0004	Calibrate, adjust and test measuring instruments	36	40
UEEIC0005	Configure and maintain industrial control system networks	54	60
UEEIC0006	Design and configure Human-Machine Interface (HMI) networks	54	60
UEEIC0007	Design and use advanced programming tools, PC networks and HMI Interfacing	108	120
UEEIC0008	Design electronic control systems	54	60
UEEIC0009	Develop an electrical integrated system interface for access through a touch screen	18	20
UEEIC0010	Develop and test code for microcontroller devices	54	60
UEEIC0011	Develop electrical integrated systems	18	20
UEEIC0012	Develop structured programs to control external devices	36	40
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers	54	60
UEEIC0014	Develop, enter and verify programs in supervisory control and data acquisition systems	54	60
UEEIC0015	Develop, enter and verify word and analogue control programs for programmable logic controllers	54	60
UEEIC0016	Diagnose and rectify faults in a.c. motor drive systems	54	60
UEEIC0017	Diagnose and rectify faults in d.c. motor drive systems	54	60
UEEIC0018	Diagnose and rectify faults in digital controls systems	54	60
UEEIC0019	Diagnose and rectify faults in servo drive systems	54	60
UEEIC0020	Fault find and repair analogue circuits and components in electronic control systems	54	60
UEEIC0021	Find and rectify faults in process final control elements	36	40
UEEIC0022	Install instrumentation and control apparatus and associated equipment	18	20

UEEIC0023	Install instrumentation and control cabling and tubing	18	20
UEEIC0024	Plan the electrical installation of integrated systems	18	20
UEEIC0025	Provide solutions to extra-low voltage (ELV) electro-pneumatic control systems and drives	54	60
UEEIC0026	Provide solutions to fluid circuit operations	54	60
UEEIC0027	Provide solutions to pneumatic-hydraulic system operations	72	80
UEEIC0028	Provide solutions to problems in industrial control systems	54	60
UEEIC0029	Set up and adjust PID control loops	36	40
UEEIC0030	Set up and adjust advanced PID process control loops	36	40
UEEIC0031	Set up and configure human-machine interface (HMI) and industrial networks	54	60
UEEIC0032	Set up electronically controlled robotically operated complex systems	72	80
UEEIC0033	Set up gas analysis measuring and control instruments	18	20
UEEIC0034	Set up industrial field control devices	54	60
UEEIC0035	Set up scientific analysis measuring and control instruments	18	20
UEEIC0036	Set up water analysis measuring and control instruments	18	20
UEEIC0037	Set up weighting measuring and control instruments	18	20
UEEIC0038	Solve problems in density/level measurement components and systems	36	40
UEEIC0039	Solve problems in flow measurement components and systems	36	40
UEEIC0040	Solve problems in polyphase electronic power control circuits	54	60
UEEIC0041	Solve problems in pressure measurement components and systems	36	40
UEEIC0042	Solve problems in single phase electronic power control circuits	54	60
UEEIC0043	Solve problems in temperature measurement components and systems	36	40
UEEIC0044	Troubleshoot measuring and analysis systems	36	40
UEEIC0045	Troubleshoot medical equipment control systems	108	120
UEEIC0046	Troubleshoot process control systems	54	60
UEEIC0047	Use instrumentation drawings, specifications, standards and equipment manuals	36	40
UEEIC0048	Verify compliance and functionality of instrumentation and control installations	36	40
UEEIC0049	Manage instrumentation and control projects	36	40

UEEIC0050	Plan instrumentation and control projects	54	60
UEEIC0051	Evaluate motor drive systems and diagnose faults	108	120
UEERA0001	Analyse the operation of HVAC air and hydronic systems	72	80
UEERA0002	Analyse the psychrometric performance of HVAC/R systems	45	50
UEERA0003	Analyse the thermodynamic performance of HVAC/R systems	45	50
UEERA0004	Analyse vibration and noise in refrigeration and air conditioning systems	72	80
UEERA0005	Apply safety awareness and legal requirements for ammonia refrigerant	9	10
UEERA0006	Apply safety awareness and legal requirements for carbon dioxide refrigerant	9	10
UEERA0007	Apply safety awareness and legal requirements for flammable refrigerants	9	10
UEERA0008	Audit HVAC/R control systems for compliance with regulations and standards	54	60
UEERA0009	Audit energy use for commercial HVAC/R systems	36	40
UEERA0010	Commission complex heating, ventilation and air conditioning (HVAC) systems	72	80
UEERA0011	Commission complex refrigeration systems and equipment	72	80
UEERA0012	Commission complex refrigeration/air conditioning control systems	36	40
UEERA0013	Commission refrigeration/air conditioning hydronic systems	72	80
UEERA0014	Design ammonia refrigerated systems	36	40
UEERA0015	Design carbon dioxide refrigerated systems	36	40
UEERA0016	Design commercial refrigeration systems and select components	72	80
UEERA0017	Design complex air conditioning systems and select equipment	108	120
UEERA0018	Design complex commercial refrigeration systems and select equipment	36	40
UEERA0019	Design complex control systems for refrigeration or heating, ventilation, air conditioning systems	72	80
UEERA0020	Design complex industrial refrigeration systems and select equipment	36	40
UEERA0021	Design control systems for refrigeration or heating, ventilation and air conditioning systems	72	80
UEERA0022	Design heating, ventilation and air conditioning (HVAC) systems and select components	54	60
UEERA0023	Design hydrocarbon refrigerated systems	36	40
UEERA0024	Design hydronic systems and select equipment	72	80
UEERA0025	Design industrial refrigeration systems and select components	72	80

UEERA0026	Design mechanical ventilation/exhaust systems and select equipment	36	40
UEERA0027	Design secondary refrigerant systems	36	40
UEERA0028	Determine noise and vibration encountered in HVAC/R applications	72	80
UEERA0029	Develop heat exchanger design specifications	72	80
UEERA0030	Develop specifications and prepare drawings for HVAC/R projects	54	60
UEERA0031	Diagnose and rectify faults in air conditioning and refrigeration control systems	54	60
UEERA0032	Diagnose and rectify faults in complex air conditioning/refrigeration systems	90	100
UEERA0033	Diagnose faults in complex HVAC/refrigeration control systems	72	80
UEERA0034	Establish heat loads for commercial refrigeration and/or air conditioning applications	72	80
UEERA0035	Establish the basic operating conditions of air conditioning systems	18	20
UEERA0036	Establish the basic operating conditions of vapour compression systems	54	60
UEERA0037	Establish the basic operating conditions of vapour compression systems - appliances	45	50
UEERA0038	Establish the thermodynamic parameters of refrigeration and air conditioning systems	72	80
UEERA0039	Evaluate and report on building services energy management systems	72	80
UEERA0040	Evaluate and report on the indoor air quality of buildings	36	40
UEERA0041	Evaluate new and alternative technologies applicable to electrotechnology applications	36	40
UEERA0042	Evaluate thermodynamic and fluid parameters of refrigeration systems	90	100
UEERA0043	Find and rectify faults in appliance control systems and devices	54	60
UEERA0044	Find and rectify faults in single phase motors and associated controls	36	40
UEERA0045	Find and rectify faults in three phase motors and associated controls	27	30
UEERA0046	Install and commission ammonia refrigeration systems, components and associated equipment	18	20
UEERA0047	Install and commission carbon dioxide refrigeration systems, components and associated equipment	18	20
UEERA0048	Install and commission flammable refrigerant air conditioning and refrigeration systems	18	20
UEERA0049	Install and start up single head split air conditioning and water heating heat pump systems	63	70
UEERA0050	Install refrigerant pipe work, flow controls and accessories	54	60
UEERA0051	Install, commission, service and maintain air conditioning systems	72	80
UEERA0052	Install, commission, service and maintain low temperature systems	36	40



UEERA0053	Install, commission, service and maintain medium temperature systems	54	60
UEERA0054	Maintain microbial control of refrigeration and air conditioning systems	18	20
UEERA0055	Manage refrigeration and air conditioning projects	36	40
UEERA0056	Monitor and adjust refrigeration energy management systems	36	40
UEERA0057	Operate ammonia refrigeration plant	36	40
UEERA0058	Plan refrigeration and air conditioning projects	54	60
UEERA0059	Prepare and connect refrigerant tubing and fittings	36	40
UEERA0060	Produce HVAC/R control system diagrams	36	40
UEERA0061	Produce HVAC/R system design drawings	72	80
UEERA0062	Recover and charge refrigerants	36	40
UEERA0063	Recover, pressure test, evacuate, charge and leak test refrigerants - appliances	45	50
UEERA0064	Recover, pressure test, evacuate, charge and leak test refrigerants - split systems	54	60
UEERA0065	Repair and service ammonia refrigeration systems	18	20
UEERA0066	Repair and service carbon dioxide refrigeration systems	18	20
UEERA0067	Repair and service secondary refrigeration systems	18	20
UEERA0068	Repair and service self-contained carbon dioxide refrigeration and heat pump systems	18	20
UEERA0069	Resolve problems in beverage dispensers	36	40
UEERA0070	Resolve problems in central plant air conditioning systems	36	40
UEERA0071	Resolve problems in dairy refrigeration systems	18	20
UEERA0072	Resolve problems in hydronic systems	36	40
UEERA0073	Resolve problems in ice making systems	18	20
UEERA0074	Resolve problems in industrial refrigeration systems	18	20
UEERA0075	Resolve problems in post-mix refrigeration systems	18	20
UEERA0076	Resolve problems in refrigerated beverage vending cabinets	18	20
UEERA0077	Resolve problems in transport refrigeration systems	18	20
UEERA0078	Resolve problems in ultra-low temperature refrigeration systems	18	20
UEERA0079	Safely handle refrigerants and lubricants	36	40

UEERA0080	Select basic commercial refrigeration system equipment, components and accessories	36	40
UEERA0081	Select refrigerant piping, accessories and associated controls	36	40
UEERA0082	Select residential air conditioning system equipment, components and accessories	36	40
UEERA0083	Service and repair microwave ovens	36	40
UEERA0084	Service and repair self-contained flammable refrigerants air conditioning and refrigeration systems	18	20
UEERA0085	Service clothes washing machines and dryers	36	40
UEERA0086	Service dishwasher machines	36	40
UEERA0087	Service electrical heating appliances	54	60
UEERA0088	Service gas heating appliances	36	40
UEERA0089	Service refrigeration appliances	54	60
UEERA0090	Service room air conditioners	27	30
UEERA0091	Service small electrical appliances and power tools	54	60
UEERA0092	Solve problems in low voltage refrigeration and air conditioning circuits	36	40
UEERA0093	Verify functionality and compliance of appliances	18	20
UEERA0094	Verify functionality and compliance of refrigeration and air conditioning installations	36	40
UEERA0095	Recover refrigerant from stationary self-contained end of life decommissioned equipment	18	20
UEERA0097	Install, commission, service and maintain variable refrigerant flow air conditioning systems	35	40
UEERA0098	Inspect, test and repair fire and smoke control features of mechanical services systems	72	80
UEERE0001	Apply environmentally and sustainable procedures in the energy sector	18	20
UEERE0006	Conduct periodic maintenance of remote area power supply battery banks	36	40
UEERE0007	Conduct periodic maintenance of remote area power supply generator sets	36	40
UEERE0008	Conduct periodic maintenance of remote area power supply photovoltaic arrays	36	40
UEERE0009	Conduct periodic maintenance of remote area power supply wind generators	36	40
UEERE0013	Develop strategies to address environmental and sustainability issues in the energy sector	18	20
UEERE0014	Develop strategies to address sustainability issues for electrical installations	18	20
UEERE0015	Implement and monitor energy sector environmental and sustainable policies and procedures	18	20
UEERE0018	Maintain and repair remote area power generation facilities	108	120

UEERE0019	Maintain safety and tidiness of remote area power supply systems	18	20
UEERE0020	Promote sustainable energy practices in the community	36	40
UEERE0021	Provide basic sustainable energy solutions for energy reduction in residential premises	36	40
UEERE0023	Work safely with remote area power supply systems	18	20
UEERE0049	Apply safe work practices in the rooftop solar industry	20	20
UEERE0050	Identify and isolate multiple supply systems	20	20
UEERE0051	Apply electrical principles to renewable energy design	36	40
UEERE0052	Assess energy loads and uses for energy efficiency in commercial facilities	36	40
UEERE0053	Assess energy loads and uses for energy efficiency in industrial properties and enterprises	36	40
UEERE0054	Conduct site survey for grid-connected photovoltaic and battery storage systems	27	30
UEERE0055	Conduct site survey for off-grid photovoltaic/generating set systems	36	40
UEERE0056	Coordinate maintenance of renewable energy (RE) apparatus and systems	18	20
UEERE0057	Coordinate the design of micro-grid renewable energy systems	45	50
UEERE0058	Coordinate the installation, fault finding and repair of micro grid systems	36	40
UEERE0059	Design energy management controls for electrical installations in buildings	72	80
UEERE0060	Design grid-connected battery storage systems	36	40
UEERE0061	Design grid-connected photovoltaic power supply systems	36	40
UEERE0062	Design micro-hydro systems	36	40
UEERE0063	Design off-grid photovoltaic/generating set systems	36	40
UEERE0064	Design renewable energy heating systems	36	40
UEERE0065	Design wind energy systems	36	40
UEERE0066	Develop effective engineering strategies for energy reduction in buildings	54	60
UEERE0067	Develop engineering solutions to renewable energy (RE) problems	54	60
UEERE0068	Develop strategies to address sustainability issues for electrical installations	18	20
UEERE0069	Diagnose and rectify faults in renewable energy (RE) control systems	54	60
UEERE0070	Fault find and repair grid-connected photovoltaic power supply systems	27	30
UEERE0071	Fault find and repair off-grid photovoltaic/generating set systems to an electrical installation	27	30

UEERE0072	Inspect grid connected renewable energy systems	25	
UEERE0073	Inspect micro grid renewable energy systems	25	
UEERE0074	Inspect off-grid renewable energy systems	25	
UEERE0075	Install and maintain micro hydro energy systems to power conversion equipment	27	30
UEERE0076	Install and maintain wind energy systems to power conversion equipment	27	30
UEERE0077	Install battery storage equipment power conversion equipment to grid	27	30
UEERE0078	Install battery storage to power conversion equipment	27	30
UEERE0079	Install off-grid power conversion equipment to electrical installation	27	30
UEERE0080	Install photovoltaic power conversion equipment to grid	27	30
UEERE0081	Install photovoltaic systems to power conversion equipment	27	30
UEERE0082	Maintain renewable energy (RE) apparatus	18	20
UEERE0083	Maintain safety and tidiness of remote area power supply systems	18	20
UEERE0084	Manage renewable energy (RE) projects	36	40
UEERE0085	Plan renewable energy (RE) projects	54	60
UEERE0086	Promote sustainable energy practices	36	40
UEERE0087	Provide basic sustainable energy solutions for energy management in residential premises	36	40
UEERE0088	Work safely with remote area power supply systems	18	20
UEERL0001	Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply	18	20
UEERL0002	Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c.	18	20
UEERL0003	Conduct in-service safety testing of electrical cord connected equipment and cord assemblies	18	20
UEERL0004	Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring	54	60
UEERL0005	Locate and rectify faults in low voltage (LV) electrical equipment using set procedures	18	20
UEERL0006	Attach HV flexible cables and plugs	36	40
UEERL0007	Disconnect-reconnect 3.3 kV electric propulsion components of self-propelled earth moving vehicles	54	60
UEERL0008	Disconnect-reconnect explosion-protected appliances and control devices connected to LV installation	54	60
UEERS0020	Apply rail signalling principles	18	20
UEERS0021	Assemble and wire electrical rail signalling equipment	36	40

UEERS0022	Find and repair rail signalling system faults	18	20
UEERS0023	Inspect, test and certify rail power signal equipment	18	20
UEERS0024	Install and maintain rail track circuit leads and bonds	27	30
UEERS0025	Maintain active level crossing equipment	36	40
UEERS0026	Maintain communications based signalling equipment	18	20
UEERS0027	Maintain computer-based interlocking rail systems	27	40
UEERS0028	Maintain mechanical rail signalling equipment and infrastructure	18	20
UEERS0029	Maintain non-vital telemetry systems	36	40
UEERS0030	Maintain power-operated point actuating devices	36	40
UEERS0031	Maintain rail signalling power supplies	36	40
UEERS0032	Maintain trackside signal and train protection equipment	36	40
UEERS0033	Maintain train detection equipment	36	40
UEERS0034	Maintain vital relay interlocking systems	36	40
UEERS0035	Maintain wayside asset protection equipment	18	20
UEERS0036	Repair rail signalling power and control cables	36	40
UEERS0037	Test copper rail signalling cables	18	20

## Mapping Qualifications

The following table provides an overview of the qualifications from version 6 which replace qualifications from the existing version of the UEE Electrotechnology Training Package.

UEE Current Qualification				UEE Replacement Qualification		
National Code	National Title	Nominal Hours	E / NE	National Code	National Title	Nominal Hours
UEE41220	Certificate IV in Electrical - Rail Signalling	459	NE	UEE41223	Certificate IV in Rail Signalling	459

## Mapping Skill Sets

The following table provides an overview of the skill sets from version 6 which replace skill sets from the existing version of the UEE Electrotechnology Training Package.

Current Skill Set				Replacement Skill Set		
National Code	National Title	Nominal Hours	E / NE	National Code	National Title	Nominal Hours
			-	UEESS00189	Rail Signalling Constructor Skill Set	117
			-	UEESS00190	Electrical - Rail Signalling Principles Skill Set	18

## Mapping Units of Competency

The following table provides an overview of the units of competency from version 6 which replace units of competency from the existing version of the UEE Electrotechnology Training Package.

Current Unit				Replacement Unit		
National Code	National Title	Nominal Hours	E / NE	National Code	National Title	Nominal Hours
			-	UEERS0020	Apply rail signalling principles	18
UEERS0001	Assemble and wire internal electrical rail signalling equipment	27	NE	UEERS0021	Assemble and wire electrical rail signalling equipment	36
UEERS0004	Find and repair rail signalling system faults	18	NE	UEERS0022	Find and repair rail signalling system faults	18
UEERS0018	Test and commission rail power equipment	18	E	UEERS0023	Inspect, test and certify rail power signal equipment	18
UEERS0011	Install and maintain rail track circuit leads and bonds	27	E	UEERS0024	Install and maintain rail track circuit leads and bonds	27
UEERS0005	Install and maintain active level crossing equipment	36	E	UEERS0025	Maintain active level crossing equipment	36
			-	UEERS0026	Maintain communications based signalling equipment	18
UEERS0006	Install and maintain computer-based interlocking rail systems	27	E	UEERS0027	Maintain computer-based interlocking rail systems	27
UEERS0016	Maintain mechanical rail signalling equipment and infrastructure	18	E	UEERS0028	Maintain mechanical rail signalling equipment and infrastructure	18
UEERS0008	Install and maintain non-vital telemetry systems	36	E	UEERS0029	Maintain non-vital telemetry systems	36
UEERS0009	Install and maintain power-operated point actuating devices	36	E	UEERS0030	Maintain power-operated point actuating devices	36
UEERS0010	Install and maintain rail signalling power supplies	36	E	UEERS0031	Maintain rail signalling power supplies	36
UEERS0012	Install and maintain trackside signal and train protection equipment	36	E	UEERS0032	Maintain trackside signal and train protection equipment	36
UEERS0013	Install and maintain train detection equipment	36	E	UEERS0033	Maintain train detection equipment	36
UEERS0014	Install and maintain vital relay interlocking systems	36	E	UEERS0034	Maintain vital relay interlocking systems	36
			-	UEERS0035	Maintain wayside asset protection equipment	18



UEERS0017	Repair rail signalling power and control cables	36	E	UEERS0036	Repair rail signalling power and control cables	36
UEERS0019	Test copper rail signalling cables	18	E	UEERS0037	Test copper rail signalling cables	18

## Apprenticeships

The following table provides a summary of the apprenticeships that have been affected by changes in this UEE Electrotechnology Training Package update.

Please refer to the current *Register of Class A and B qualifications* found on the Department of Training and Workforce Development website for the official list of apprenticeships in Western Australia.

Current Qualification					Replacement Qualification		
National Code	National Title	Apprenticeship	Nominal Hours	E / NE	National Code	National Title	Nominal Hours

No changes occurred between versions 5 and 6.

## Traineeships

The following table provides a summary of the traineeships that have been affected by changes in this UEE Electrotechnology Training Package update.

Please refer to the current *Register of Class A and B qualifications* found on the Department of Training and Workforce Development website for the official list of apprenticeships in Western Australia.

Current Qualification					Replacement Qualification		
National Code	National Title	Traineeship	Nominal Hours	E / NE	National Code	National Title	Nominal Hours

No changes occurred between versions 5 and 6.

## Pre-apprenticeships

The following table provides a summary of the pre-apprenticeships that have been affected by changes in this UEE Electrotechnology Training Package update.

Please refer to the current *list of pre-apprenticeship courses* found on the Department of Training and Workforce Development website for the official list of pre-apprenticeships in Western Australia.

Current Qualification					Replacement Qualification		
National Code	National Title	Pre-apprenticeship	Nominal Hours	E / NE	National Code	National Title	Nominal Hours

No changes occurred between versions 5 and 6.