Australian Government

UEE60220 Advanced Diploma of Electronics and Communications Engineering

Release 1

UEE60220 Advanced Diploma of Electronics and Communications Engineering

Modification History

Release 1. This is the first release of this qualification in the UEE Electrotechnology Training Package

Qualification Description

This qualification covers competencies to design and validate/evaluate electronics and communication equipment and systems, manage risk, estimate and manage projects and provide technical advice/sales.

No licensing, legislative or certification requirements apply to this qualification at the time of publication.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

A total of **2160 weighting points** comprising**:**

280 core weighting points listed below; **plus**

1880 general elective weighting points from the general elective units listed below.

Choose a total of 1880 **weighting points** elective units from the list below, of which between 0 and 360 **weighting points** can be taken from Group A; and between 0 and 900 **weighting points** must be taken from Group B; and between 0 and 280 **weighting points** must be taken from Group C; and between 0 and 260 **weighting points** must be taken from Group D; and between 520 and 1320 **weighting points** must be taken from Group E.

Up to 360 weighting points of the general elective units Group A, may be selected, with appropriate contextualisation, from any relevant nationally endorsed Training Package or accredited course, provided selected units contribute to the vocational outcome of the qualification. Previously assigned weighting points are listed in the UEE Electrotechnology Training Package Companion Volume Implementation Guide (CVIG), if not listed weighting points will be 10 points, unless directed from the Electrotechnology Industry Reference Committee (IRC).

There are units of competency within this qualification that contain pre-requisites. Units of competency that have a pre-requisite requirement are identified by this symbol *. Refer directly to the units of competency to identify pre-requisite requirements to ensure all are complied with. A list of all pre-requisites is also provided in the UEE Pre-requisite Companion Volume.

Where imported units are selected, care must be taken to ensure all pre-requisite units specified are complied with.

Core units		**Weighting Points**
UEECD0007	Apply work health and safety regulations, codes and practices in the workplace	20
UEECD0012	Contribute to risk management in electrotechnology systems	20
UEECD0014	Develop design briefs for electrotechnology projects	40
UEECD0016	Document and apply measures to control WHS risks associated with electrotechnology work*	20
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
UEECD0027	Participate in development and follow a personal competency development plan	20
UEEEC0007	Commission electronics and communications systems	20
UEEEC0011	Design and develop electronics/computer systems projects	40
UEEEC0043	Manage computer systems/electronics projects	40
UEEEC0044	Modify - redesign electronics and communications systems*	20
UEERE0013	Develop strategies to address environmental and sustainability issues in the energy sector	20

Group A: Imported and common elective units.		**Weighting Points**
BSBINM501	Manage an information or knowledge management system	50
BSBINN502	Build and sustain an innovative work environment	50
BSBMGT502	Manage people performance	70
BSBMGT516	Facilitate continuous improvement	60
BSBWOR502	Lead and manage team effectiveness	60

ICTTEN312	Install telecommunications network equipment	40
MSS402001	Apply competitive systems and practices	20
MSS402020	Apply quick changeover procedures	20
MSS402021	Apply Just in Time procedures	20
MSS402040	Apply 5S procedures	20
MSS402080	Undertake root cause analysis	20
MSS402081	Contribute to the application of a proactive maintenance strategy	20

Group B: Qualification elective units.		**Weighting Points**
UEEAS0001	Assemble electronic components*	40
UEEAS0002	Conduct quality and functional tests on assembled electronic apparatus*	20
UEEAS0003	Modify electronic sub-assemblies*	40
UEEAS0004	Select electronic components for assembly*	20
UEEAS0005	Set up and check electronic component assembly machines*	40
UEEAS0006	Use lead-free soldering techniques*	40
UEECD0008	Carry out preparatory energy sector work activities*	60
UEECD0019	Fabricate, assemble and dismantle utilities industry components*	40
UEECD0020	Fix and secure electrotechnology equipment*	20
UEECD0021	Identify and select components, accessories and materials for energy sector work activities*	20
UEECD0025	Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits*	40
UEECD0028	Plan an integrated cabling installation system*	40

UEECD0040	Solve basic problems electronic and digital equipment and circuits*	80
UEECD0043	Solve problems in direct current circuits*	80
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications*	40
UEECS0003	Assemble, set up and test computing devices*	80
UEECS0018	Develop web pages for engineering applications	40
UEECS0022	Install and configure a client computer operating system and software	40
UEECS0028	Select, install, configure and test multimedia components	40
UEECS0029	Set up and configure basic local area network (LAN)*	80
UEECS0030	Set up, configure and test biometric devices	40
UEECS0032	Support computer hardware and software for engineering applications	120
UEECS0033	Use engineering applications software on personal computers	40
UEEDV0004	Install and connect data and voice communication equipment*	40
UEEDV0005	Install and maintain cabling for multiple access to telecommunication services*	80
UEEDV0006	Install and modify optical fibre performance data communication cabling*	40
UEEDV0008	Install, modify and verify coaxial and structured communication copper cabling*	40
UEEDV0009	Select and arrange data and voice equipment for local area networks*	40
UEEDV0010	Select and arrange equipment for wireless communication networks*	40
UEEDV0011	Set up and configure basic data communication systems*	40

UEEDV0012	Set up and configure the wireless capabilities of communications and data storage devices	40
UEEDV0013	Solve problems in voice and data communications circuits*	40
UEEDV0014	Test, report and rectify faults in data and voice installations*	40
UEEEC0002	Assemble and install reception antennae and signal distribution equipment*	60
UEEEC0003	Assemble and set up basic security systems*	80
UEEEC0004	Assemble and set up fixed video/audio components and systems in buildings and premises*	120
UEEEC0006	Carry out repairs of predictable faults in video and audio replay/recording apparatus*	120
UEEEC0008	Commission large fire protection systems*	40
UEEEC0019	Develop software solutions for microcontroller-based systems*	60
UEEEC0026	Enter and verify programs for fire protection systems*	40
UEEEC0027	Enter instructions and test wired and wireless security systems*	40
UEEEC0028	Fault find and repair complex power supplies*	40
UEEEC0029	Fault find and repair electronic apparatus*	40
UEEEC0032	Fault find and repair high-volume office equipment*	120
UEEEC0038	Find and repair microwave amplifier section faults in electronic apparatus*	40
UEEEC0039	Install and test microwave antennae and waveguides*	60
UEEEC0040	Install commercial video/audio system components*	120
UEEEC0041	Install fire detection and warning system apparatus*	40
UEEEC0042	Install large security systems*	100

UEEEC0046	Operate and maintain amateur radio communication stations*	40
UEEEC0048	Program and commission commercial access control security systems*	60
UEEEC0049	Program and commission commercial security closed-circuit television systems*	60
UEEEC0050	Program and commission commercial security systems*	60
UEEEC0055	Repair basic computer equipment faults by replacement of modules/sub-assemblies*	40
UEEEC0056	Repair predictable faults in audio components*	40
UEEEC0057	Repair predictable faults in general electronic apparatus*	40
UEEEC0058	Repair predictable faults in television receivers*	120
UEEEC0059	Repair routine business equipment faults*	120
UEEEC0060	Repairs basic electronic apparatus faults by replacement of components*	40
UEEEC0061	Set up and adjust commercial radio frequency (RF) transmission and reception systems*	60
UEEEC0062	Set up and test residential video/audio equipment*	40
UEEEC0063	Solve fundamental electronic communications system problems*	40
UEEEC0064	Solve oscillator problems*	40
UEEEC0065	Solve problems in basic electronic circuits*	100
UEEEC0066	Troubleshoot amplifiers in an electronic apparatus*	80
UEEEC0067	Troubleshoot basic amplifier circuits*	40
UEEEC0068	Troubleshoot communication systems*	80
UEEEC0069	Troubleshoot digital sub-systems*	80

UEEEC0070	Troubleshoot faults in television receivers*	120
UEEEC0071	Troubleshoot fire protection systems*	40
UEEEC0072	Troubleshoot microcontroller-based hardware systems	40
UEEEC0073	Troubleshoot professional audio reproduction components*	120
UEEEC0074	Troubleshoot resonance circuits in an electronic apparatus*	80
UEEEC0075	Troubleshoot single phase input d.c power supplies*	40
UEEEC0076	Verify compliance and functionality of fire protection system installations*	60
UEEEC0077	Verify functionality and compliance of custom electronic installations*	40
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices*	20
UEEIC0004	Calibrate, adjust and test measuring instruments*	40
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEEIC0047	Use instrumentation drawings, specifications, standards and equipment manuals*	40
UEERL0001	Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply*	20
UEERL0002	Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c.*	20

Group C: Qualification elective units.		**Weighting Points**
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0013	Develop and implement energy sector maintenance programs	60
UEECD0018	Establish, maintain and evaluate energy sector WHS/OHS systems	60

UEECD0047	Supervise and coordinate energy sector work activities	40
UEECO0001	Estimate electrotechnology projects	40
UEECO0013	Prepare specifications for the supply of materials and equipment for electrotechnology projects	40
UEECS0002	Analyse and implement biometric measuring techniques and applications	120
UEECS0020	Evaluate and modify object-oriented code programs	40
UEECS0031	Set up, create and implement content for a web server*	120
UEEEC0009	Commission satellite and microwave communication systems*	40
UEEEC0012	Design custom electronic equipment installations*	120
UEEEC0022	Diagnose and rectify faults in camera circuits and equipment*	60
UEEEC0023	Diagnose and rectify faults in digital transmission circuits and systems*	80
UEEEC0024	Diagnose and rectify faults in electronic display circuits*	60
UEEEC0025	Diagnose and rectify faults in recording and replay equipment	60
UEEEC0030	Fault find and repair electronic medical equipment*	120
UEEEC0031	Fault find and repair global positioning systems*	60
UEEEC0033	Fault find and repair navigation systems*	60
UEEEC0034	Fault find and repair radar apparatus and systems*	120
UEEEC0035	Fault find and repair satellite-based surveillance and observation systems*	60
UEEEC0036	Fault find and repair sonar apparatus and systems*	120
UEEEC0037	Fault find and repair telecommunication apparatus and systems*	60

UEEEC0051	Program and commission commercial video/audio systems*	40
UEEEC0052	Program and test large security systems*	120
UEEIC0005	Configure and maintain industrial control system networks*	60
UEEIC0012	Develop structured programs to control external devices*	40
UEEIC0042	Solve problems in single phase electronic power control circuits*	60
UEERE0015	Implement and monitor energy sector environmental and sustainable policies and procedures	20

Group D: Qualification elective units.		**Weighting Points**
UEECD0036	Provide engineering solutions for problems in complex multiple path circuits	60
UEECD0037	Provide engineering solutions for uses of materials and thermodynamic effects	80
UEECD0039	Provide solutions to basic engineering computational problems*	60
UEECD0054	Write specifications for electronics and communications engineering projects	40
UEECO0014	Prepare tender submissions for electrotechnology projects*	60
UEECS0013	Develop and validate biometric equipment/systems installation	120
UEECS0016	Develop energy sector directory services*	80
UEECS0017	Develop industrial control programs for microcomputer equipped devices	60
UEECS0019	Develop, implement and test object-oriented code*	140
UEECS0027	Provide programming solution for computer systems engineering problems	60
UEEEC0001	Analyse the performance of wireless-based electronic	40

	communication systems*	
UEEEC0010	Design and develop advanced digital systems	40
UEEEC0013	Design electronic printed circuit boards*	40
UEEEC0015	Develop basic plans for integrating security systems*	40
UEEEC0016	Develop engineering solutions to RF amplifier problems*	40
UEEEC0017	Develop engineering solutions to analogue electronic problems*	80
UEEEC0018	Develop engineering solutions to audio electronic problems*	60
UEEEC0020	Develop solutions for air surveillance apparatus and systems*	120
UEEEC0021	Diagnose and rectify faults in air navigation circuits and systems*	120
UEEEC0053	Provide engineering solutions to air traffic control system problems*	40
UEEIC0006	Design and configure human-machine interface (HMI) networks	60
UEEIC0010	Develop and test code for microcontroller devices	60

Group E: Qualification elective units.		**Weighting Points**
UEECD0001	Analyse materials for suitability in electrical equipment*	80
UEECD0002	Analyse static and dynamic parameters of electrical equipment	80
UEECD0004	Apply material science to solving electrotechnology engineering problems	60
UEECD0005	Apply physics to solving electrotechnology engineering problems	60
UEECD0015	Develop engineering solutions to photonic system problems*	80

UEECD0026	Manage risk in electrotechnology activities	60
UEECD0041	Solve electrotechnical engineering problems	60
UEECD0049	Use advanced computational processes to provide solutions to energy sector engineering problems*	80
UEECO0003	Manage contract variations	40
UEECS0012	Design embedded controller control systems	80
UEECS0015	Develop energy sector computer network applications infrastructure	80
UEEEC0005	Assess electronic apparatus compliance	60
UEEEC0014	Design signal-conditioning sub-systems	80
UEEEC0045	Modify digital signal processing (DSP) based sub-systems	80
UEEEC0047	Plan large electronic projects	60
UEEEC0054	Provide gate array solutions for complex electronics systems*	60
UEEIC0007	Design and use advanced programming tools, PC networks and HMI Interfacing	120
UEEIC0008	Design electronic control systems*	60
UEEIC0032	Set up electronically controlled robotically operated complex systems*	80

Qualification Mapping Information

This qualification replaces and is equivalent to UEE60211 Advanced Diploma of Electronics and Communications Engineering

Links

Companion Volume implementation guides are found in VETNet - - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6