Australian Government

UEE60420 Advanced Diploma of Computer Systems Engineering

Release 1

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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, install/validate/evaluate and administer computer 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 1080 **weighting points** can be taken from Group A; and between 800 and 1880 **weighting points** must be taken from Group B.

Up to 360 weighting points of the general elective units Group A, may be selected 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
UEECS0004	Commission industrial computer systems*	20
UEECS0025	Modify/redesign industrial computer systems*	20
UEEEC0011	Design and develop electronics/computer systems projects	40
UEEEC0043	Manage computer systems/electronics projects	40
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
ICTTEN419	Implement and troubleshoot enterprise routers and switches	100

ICTTEN420	Design, install and configure an internetwork	100
ICTTEN421	Apply advanced routing protocols to network design	80
ICTTEN422	Configure and troubleshoot advanced network switching	80
ICTTEN423	Install and maintain a wide area network	80
UEEAS0001	Assemble electronic components*	40
UEEAS0003	Modify electronic sub-assemblies*	40
UEEAS0004	Select electronic components for assembly*	20
UEEAS0006	Use lead-free soldering techniques*	40
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0013	Develop and implement energy sector maintenance programs	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
UEECD0040	Solve basic problems electronic and digital equipment and circuits*	80
UEECD0043	Solve problems in direct current circuits*	80
UEECD0045	Solve problems in multiple path extra-low voltage (ELV) a.c. circuits*	40
UEECD0047	Supervise and coordinate energy sector work activities	40
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications*	40
UEECO0001	Estimate electrotechnology projects	40

UEECO0013	Prepare specifications for the supply of materials and equipment for electrotechnology projects	40
UEECS0001	Administer computer networks	80
UEECS0002	Analyse and implement biometric measuring techniques and applications	120
UEECS0003	Assemble, set up and test computing devices*	80
UEECS0014	Develop computer network services*	120
UEECS0018	Develop web pages for engineering applications	40
UEECS0020	Evaluate and modify object-oriented code programs	40
UEECS0021	Install and administer UNIX/LINUX-based networked computers	80
UEECS0022	Install and configure a client computer operating system and software	40
UEECS0023	Install and configure network systems for internetworking*	120
UEECS0024	Integrate multiple computer operating systems on a client server local area network	80
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
UEECS0031	Set up, create and implement content for a web server*	120
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	80

	telecommunication services*	
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
UEEDV0012	Set up and configure the wireless capabilities of communications and data storage devices	40
UEEEC0003	Assemble and set up basic security systems*	80
UEEEC0019	Develop software solutions for microcontroller-based systems*	60
UEEEC0027	Enter instructions and test wired and wireless security systems*	40
UEEEC0042	Install large security systems*	100
UEEEC0055	Repair basic computer equipment faults by replacement of modules/sub-assemblies*	40
UEEEC0059	Repair routine business equipment faults*	120
UEEEC0060	Repairs basic electronic apparatus faults by replacement of components*	40
UEEEC0065	Solve problems in basic electronic circuits*	100
UEEEC0066	Troubleshoot amplifiers in an electronic apparatus*	80
UEEEC0067	Troubleshoot basic amplifier circuits*	40
UEEEC0069	Troubleshoot digital sub-systems*	80
UEEEC0072	Troubleshoot microcontroller-based hardware systems	40
UEEEC0074	Troubleshoot resonance circuits in an electronic apparatus*	80

UEEEC0075	Troubleshoot single phase input d.c power supplies*	40
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices*	20
UEEIC0005	Configure and maintain industrial control system networks*	60
UEEIC0012	Develop structured programs to control external devices*	40
UEEIC0020	Fault find and repair analogue circuits and components in electronic control systems*	60
UEEIC0047	Use instrumentation drawings, specifications, standards and equipment manuals*	40
UEERE0015	Implement and monitor energy sector environmental and sustainable policies and procedures	20

Group B: Qualification elective units.		**Weighting Points**
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
UEECD0036	Provide engineering solutions for problems in complex multiple path circuits	60
UEECD0039	Provide solutions to basic engineering computational problems*	60
UEECD0041	Solve electrotechnical engineering problems	60
UEECD0049	Use advanced computational processes to provide solutions to energy sector engineering problems*	80
UEECD0053	Write specifications for computer systems engineering projects	40
UEECO0003	Manage contract variations	40

UEECO0014	Prepare tender submissions for electrotechnology projects*	60
UEECS0005	Design and implement advanced routing for internetworking systems	100
UEECS0006	Design and implement multi-layer switching for internetworking systems	100
UEECS0007	Design and implement network systems for internetworking	120
UEECS0008	Design and implement remote access for internetworking systems	100
UEECS0009	Design and implement security for internetworking systems	100
UEECS0010	Design and implement wireless LANs/WANs for internetworking systems	100
UEECS0011	Design and manage enterprise computer networks	80
UEECS0012	Design embedded controller control systems	80
UEECS0013	Develop and validate biometric equipment/systems installation	120
UEECS0015	Develop energy sector computer network applications infrastructure	80
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
UEECS0026	Plan industrial computer systems projects	60
UEECS0027	Provide programming solution for computer systems engineering problems	60
UEEEC0001	Analyse the performance of wireless-based electronic communication systems*	40
UEEEC0010	Design and develop advanced digital systems	40

UEEEC0013	Design electronic printed circuit boards*	40
UEEEC0014	Design signal-conditioning sub-systems	80
UEEEC0015	Develop basic plans for integrating security systems*	40
UEEEC0017	Develop engineering solutions to analogue electronic problems*	80
UEEEC0045	Modify digital signal processing (DSP) based sub-systems	80
UEEEC0054	Provide gate array solutions for complex electronics systems*	60
UEEIC0006	Design and configure human-machine interface (HMI) networks	60
UEEIC0007	Design and use advanced programming tools, PC networks and HMI Interfacing	120
UEEIC0010	Develop and test code for microcontroller devices	60

Qualification Mapping Information

This qualification replaces and is equivalent to UEE60411 Advanced Diploma of Computer Systems Engineering

Links

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