Metal and Engineering and Electrotechnology Training Package Qualification Packaging based on Unit Resources Available from LRES Training Management

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Complete Qualifications

Note: Units highlighted are those available from LRES Training Management

UEE30911 - Certificate III in Electronics and Communications (Release 5)

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 380 points in accordance with the Elective Competency Standard Units table below.

Core Competency Standard Units All Core competency standard units to be achieved		Weighting Points
UEENEEC021B	Participate in electronics and communications work and competency development activities	60
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
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work	20
UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40
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
UEENEEH138A	Fault find and repair complex power supplies	40
UEENEEH139A	Troubleshoot basic amplifier circuits	40
UEENEEH146A	Solve fundamental electronic communications system problems	40
UEENEEK142A	Apply environmentally and sustainable procedures in the energy sector	20
Total points in core		680
Elective Competency Standard Units Complete Elective units to achieve a total of weighting of 380 points from the following groups:		

Group		Minimum points	Maximum points
A	Imported and Common Elective Units	0	180

	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 3. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.			
B	Qualification Elective Units You may select all your elective units from this Group	200	380	

Group A Imported and Common Elective Units You may complete units to a maximum weighting of 180		Weighting Points
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
UEENEEC010B	Deliver a service to customers	20
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	20
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
HLTAID003	Provide first aid	10
ICTTEN3056A	Install telecommunications network equipment	40
MSS402001A	Apply competitive systems and practices	20
MSS402020A	Apply quick changeover procedures	20
MSS402021A	Apply Just in Time procedures	20
MSS402040A	Apply 5S procedures	20
MSS402080A	Undertake root cause analysis	20
MSS402081A	Contribute to the application of a proactive maintenance strategy	20
	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 3. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework	Up to 180 points
Group B Qualification Elective Units Complete units to a minimum weighting of 200 You may select all your elective units from this Group		Weighting Points

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
UEENEEB101A	Operate and maintain amateur radio communication stations	40
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
UEENEED130A	Select, install, configure and test multimedia components	40
UEENEED143A	Install and configure a client computer operating system and software	40
UEENEED146A	Set up and configure basic local area network (LAN)	40
UEENEED153A	Set up, configure and test biometric devices	40
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
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
UEENEEE179A	Identify and select components, accessories and materials for energy sector work activities	20
UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services	120
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	40

UEENEEF109A	Install and connect data and voice communication equipment	40
UEENEEF110A	Select and arrange data and voice equipment for local area networks	40
UEENEEF111A	Test, report and rectify faults in data and voice installations	40
UEENEEF114A	Set up and configure basic data communication systems	40
UEENEEH101A	Repair basic computer equipment faults by replacement of modules/sub-assemblies	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
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
UEENEEH142A	Solve oscillator problems	40
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
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
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
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
UEENEEH187A	Solve problems in electronic musical equipment circuits	40
UEENEEI101A	Use instrumentation drawings, specification, standards and equipment manuals	40
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20
UEENEEI117A	Calibrate, adjust and test measuring instruments	40
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
UEENEEP010A	Disconnect - reconnect appliances connected to low voltage installation wiring	60
UEENEEP012A	Disconnect / reconnect composite appliances connected to low voltage installation wiring	60
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

UEESS00168 - Sustainable - Installer of Grid Connected Photovoltaic Systems Skill Set (Release 1)

Skill Set Requirements

A total of **2 units** of competency must be attained.	
UEERE0016	Install, configure and commission LV grid-connected photovoltaic power systems
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems

UEESS00160 - Sustainable - Designer-Installer of Grid Connected Photovoltaic Systems Skill Set (Release 1)

Skill Set Requirements

A total of **3 units** of competency must be attained.	
UEERE0011	Design grid-connected photovoltaic power supply systems
UEERE0016	Install, configure and commission LV grid-connected photovoltaic power systems
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems

Incomplete Qualifications

Note: Units highlighted are those available from LRES Training Management

MEM10105 - Certificate I in Engineering (Release 2)

Packaging Rules

Core units

- select all of the units from this list

Unit code	Unit title
MEM13014A	Apply principles of occupational health and safety in the work environment
MEM14004A	Plan to undertake a routine task
MEM15024A	Apply quality procedures
MEM16007A	Work with others in a manufacturing, engineering or related environment

Elective units

- select units from this list to the value of at least 24 points, including any prerequisites.

Unit code	Unit title	P
MEM03001B	Perform manual production assembly	4
MEM03002B	Perform precision assembly	4
MEM03003B	Perform sheet and plate assembly	4
MEM03004B	Perform electronic/electrical assembly (production)	8
MEM03006B	Set assembly stations	2
MEM04004B	Prepare and mix sand for metal moulding	4
MEM04008B	Fettle and trim metal castings/forgings	4
MEM04018B	Perform general woodworking machine operations	4
MEM05001B	Perform manual soldering/desoldering - electrical/electronic components	4
MEM05003B	Perform soft soldering	2
MEM05004C	Perform routine oxy acetylene welding	2
MEM05005B	Carry out mechanical cutting	2
MEM05006C	Perform brazing and/or silver soldering	2
MEM05007C	Perform manual heating and thermal cutting	2
MEM05012C	Perform routine manual metal arc welding	2
MEM05013C	Perform manual production welding	2
MEM06001B	Perform hand forging	4
MEM06007B	Perform basic incidental heat/quenching, tempering and annealing	2
MEM07001B	Perform operational maintenance of machines/equipment	2
MEM07003B	Perform machine setting (routine)	4
MEM07024B	Operate and monitor machine/process	4
MEM07028B	Operate computer controlled machines/processes	2

MEM07029B	Perform routine sharpening/maintenance of production tools and cutters	4
MEM07030C	Perform metal spinning lathe operations (basic)	8
MEM07032B	Use workshop machines for basic operations	2
MEM08001B	Perform wire, jig and barrel load/unload work	4
MEM08002C	Pre-treat work for subsequent surface coating	4
MEM08004B	Finish work using wet, dry and vapour deposition methods	4
MEM08009C	Make up solutions	2
MEM08010B	Manually finish/polish materials	6
MEM08011B	Prepare surfaces using solvents and/or mechanical means	2
MEM08012B	Prepare surfaces by abrasive blasting (basic)	4
MEM08014B	Apply protective coatings (basic)	4
MEM08016B	Control blast coating by-products, materials and emissions	1
MEM11005B	Pick and process order	4
MEM11006B	Perform production packaging	2
MEM11007B	Administer inventory procedures	4
MEM11008B	Package materials (stores and warehouse)	2
MEM11009B	Handle/move bulk fluids/gases	4
MEM11011B	Undertake manual handling	2
MEM11013B	Undertake warehouse receival process	4
MEM11016B	Order materials	2
MEM12001B	Use comparison and basic measuring devices	2
MEM12002B	Perform electrical/electronic measurement	2
MEM12023A	Perform engineering measurements	5
MEM12024A	Perform computations	3
MEM13001B	Perform emergency first aid	1
MEM13002B	Undertake occupational health and safety activities in the workplace	3
MEM13003B	Work safely with industrial chemicals and materials	2
MEM13004B	Work safely with molten metals/glass	2
MEM14005A	Plan a complete activity	4
MEM15001B	Perform basic statistical quality control	2
MEM15002A	Apply quality systems	2
MEM15003B	Use improvement processes in team activities	4
MEM16004B	Perform internal/external customer service	2
MEM16005A	Operate as a team member to conduct manufacturing, engineering or related activities	2
MEM16006A	Organise and communicate information	2
MEM16008A	Interact with computing technology	2
MEM17003A	Assist in the provision of on the job training	2
MEM18001C	Use hand tools	2
MEM18002B	Use power tools/hand held operations	2
MEM18013B	Perform gland packing	2

MEM18038B	Maintain wheels and tyres	2
MEM19001B	Perform jewellery metal casting	6
MEM19002B	Prepare jewellery illustrations	4
MEM19003B	Handle gem materials	2
MEM19006B	Replace watch batteries	1
MEM19009B	Perform investment procedures for lost wax casting process	1
MEM19010B	Produce rubber moulds for lost wax casting process	2
MEM19011B	Perform wax injection of moulds for lost wax casting process	2
MEM19014B	Perform hand engraving	4
MEM19015B	Perform jewellery enamelling	4
MEM19016B	Construct jewellery components	4
MEM19017B	Fabricate jewellery items	6
MEM20001A	Produce keys	4
MEM20002A	Assemble and test lock mechanisms	6
MEM20003A	Install and upgrade locks and hardware	4
MEM25001B	Apply fibre-reinforced materials	2
MEM25002B	Form and integrate fibre-reinforced structures	4
MEM25004B	Fair and shape surfaces	2
MEM25006B	Undertake marine sheathing operations	2
MEM25007B	Maintain marine vessel surfaces	4
MEM25014B	Perform marine slipping operations	2
MEM50002B	Work safely on marine craft	1
MEM50003B	Follow work procedures to maintain the marine environment	1
MEM50004B	Maintain quality of environment by following marina codes	1
MEM50009B	Safely operate a mechanically powered recreational boat	2
MSAENV272B	Participate in environmentally sustainable work practices	3

MEM20205 - Certificate II in Engineering - Production Technology (Release 6)

Packaging Rules

The minimum requirements for achievement of the Certificate II in Engineering - Production Technology are:

- completion of all of the core units of competency listed below, and
- completion of elective units from the list below to the value of at least 50 points.

Points associated with prerequisites count towards the total (refer to units for details).

Appropriate elective units to the value of 11 points may be chosen from other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate II. Note that the elective units listed below include all of the units that are approved for selection from the MEM05 Training Package for use in this qualification. This meets the NSSC requirement that one sixth of the total units must be able to be selected from other qualifications in the same Training Package.

Registered Training Organisations must seek a determination from Manufacturing Skills Australia in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses.

Additional qualification descriptors

The following additional descriptors are approved for use with this qualification: Marine Craft Manufacturing; Surface Finishing; Marine Craft Surface Finishing

Core units

- select all of the units from this list

Unit code	Unit title
MEM12023A	Perform engineering measurements
MEM13014A	Apply principles of occupational health and safety in the work environment
MEM14004A	Plan to undertake a routine task
MEM15002A	Apply quality systems
MEM15024A	Apply quality procedures
MEM16006A	Organise and communicate information
MEM16007A	Work with others in a manufacturing, engineering or related environment
MEM17003A	Assist in the provision of on the job training
MSAENV272B	Participate in environmentally sustainable work practices

Elective units

- select elective units from this list to the value of at least 50 points, including any prerequisites.

Unit code	Unit title	P
MEM03001B	Perform manual production assembly	4
MEM03002B	Perform precision assembly	4
MEM03003B	Perform sheet and plate assembly	4
MEM03004B	Perform electronic/electrical assembly (production)	8
MEM03005B	Rework and repair (electrical/electronic production)	8
MEM03006B	Set assembly stations	2
MEM04001B	Operate melting furnaces	4
MEM04002B	Perform gravity die casting	2
MEM04003B	Operate pressure die casting machine	4
MEM04004B	Prepare and mix sand for metal moulding	4
MEM04006B	Operate sand moulding and core making machines	8
MEM04007B	Pour molten metal	4
MEM04008B	Fettle and trim metal castings/forgings	4
MEM04018B	Perform general woodworking machine operations	4
MEM04019B	Perform refractory installation and repair	4
MEM05001B	Perform manual soldering/desoldering - electrical/electronic components	4
MEM05002B	Perform high reliability soldering and desoldering	4
MEM05003B	Perform soft soldering	2
MEM05004C	Perform routine oxy acetylene welding	2
MEM05005B	Carry out mechanical cutting	2
MEM05006C	Perform brazing and/or silver soldering	2
MEM05007C	Perform manual heating and thermal cutting	2
MEM05009C	Perform automated thermal cutting	2
MEM05012C	Perform routine manual metal arc welding	2
MEM05013C	Perform manual production welding	2
MEM05014C	Monitor quality of production welding/fabrications	2
MEM05015D	Weld using manual metal arc welding process	4
MEM05017D	Weld using gas metal arc welding process	4
MEM05019D	Weld using gas tungsten arc welding process	4
MEM05023C	Weld using submerged arc welding process	4
MEM05027A	Perform aluminothermic welding	2
MEM05041B	Weld using powder flame spraying	4
MEM05049B	Perform routine gas tungsten arc welding	2
MEM05050B	Perform routine gas metal arc welding	2
MEM05051A	Select welding processes	2
MEM05052A	Apply safe welding practices	4
MEM05053A	Set and edit computer controlled thermal cutting machines	4
MEM06001B	Perform hand forging	4
MEM06002B	Perform hammer forging	4
MEM06003C	Carry out heat treatment	6
MEM06004B	Select heat treatment processes and test finished product	6

MEM06005B	Perform drop and upset forging	4
MEM06006C	Repair springs	4
MEM06007B	Perform basic incidental heat/quenching, tempering and annealing	2
MEM06008A	Hammer forge complex shapes	4
MEM06009A	Hand forge complex shapes	4
MEM07001B	Perform operational maintenance of machines/equipment	2
MEM07003B	Perform machine setting (routine)	4
MEM07004B	Perform machine setting (complex)	8
MEM07005C	Perform general machining	8
MEM07014B	Perform electro-discharge (EDM) machining operations	4
MEM07015B	Set computer controlled machines/processes	2
MEM07016C	Set and edit computer controlled machines/processes	4
MEM07024B	Operate and monitor machine/process	4
MEM07025B	Perform advanced machine/process operation	6
MEM07026B	Perform advanced plastic processing	6
MEM07027B	Perform advanced press operations	6
MEM07028B	Operate computer controlled machines/processes	2
MEM07029B	Perform routine sharpening/maintenance of production tools and cutters	4
MEM07030C	Perform metal spinning lathe operations (basic)	8
MEM07031C	Perform metal spinning lathe operations (complex)	4
MEM07032B	Use workshop machines for basic operations	2
MEM07033B	Operate and monitor basic boiler	6
MEM07034A	Operate and monitor intermediate class boiler	4
MEM07040A	Set multistage integrated processes	6
MEM07041A	Perform production machining*	8
MEM08001B	Perform wire, jig and barrel load/unload work	4
MEM08002C	Pre-treat work for subsequent surface coating	4
MEM08003C	Perform electroplating operations	6
MEM08004B	Finish work using wet, dry and vapour deposition methods	4
MEM08005B	Prepare and produce specialised coatings	4
MEM08006B	Produce clear and/or coloured and/or sealed anodised films on aluminium	2
MEM08007B	Control surface finish production and finished product quality	4
MEM08008B	Operate and control surface finishing waste treatment process	3
MEM08009C	Make up solutions	2
MEM08010B	Manually finish/polish materials	6
MEM08011B	Prepare surfaces using solvents and/or mechanical means	2
MEM08012B	Prepare surfaces by abrasive blasting (basic)	4
MEM08013B	Prepare surfaces by abrasive blasting (advanced)	4
MEM08014B	Apply protective coatings (basic)	4
MEM08015B	Apply protective coatings (advanced)	4
MEM08016B	Control blast coating by-products, materials and emissions	1
MEM08018B	Electroplate engineering coatings	6
MEM08019B	Electroplate protective finishes	6
MEM08020B	Electroplate decorative finishes	6

MEM09002B	Interpret technical drawing	4
MEM10002B	Terminate and connect electrical wiring	3
MEM10009B	Install refrigeration and air conditioning plant and equipment	4
MEM10010B	Install pipework and pipework assemblies	4
MEM10011B	Terminate and connect specialist cables	3
MEM10013A	Install split air conditioning systems and associated pipework	6
MEM11001C	Erect/dismantle scaffolding and equipment	4
MEM11002C	Erect/dismantle complex scaffolding and equipment	4
MEM11003B	Coordinate erection/dismantling of complex scaffolding/equipment	4
MEM11004B	Undertake dogging	4
MEM11005B	Pick and process order	4
MEM11006B	Perform production packaging	2
MEM11007B	Administer inventory procedures	4
MEM11008B	Package materials (stores and warehouse)	2
MEM11009B	Handle/move bulk fluids/gases	4
MEM11010B	Operate mobile load shifting equipment	4
MEM11011B	Undertake manual handling	2
MEM11012B	Purchase materials	6
MEM11013B	Undertake warehouse receival process	4
MEM11014B	Undertake warehouse dispatch process	4
MEM11015B	Manage warehouse inventory system	6
MEM11016B	Order materials	2
MEM11017B	Organise and lead stocktakes	4
MEM11018B	Organise and maintain warehouse stock receival and/or dispatch system	6
MEM11019B	Undertake tool store procedures	4
MEM11020B	Perform advanced warehouse computer operations	4
MEM11021B	Perform advanced operation of load shifting equipment	2
MEM11022B	Operate fixed/moveable load shifting equipment	4
MEM11023A	Operate a bridge and gantry crane	4
MEM11024A	Undertake basic rigging*	4
MEM11025A	Operate a non-slewing mobile crane of greater than three tonnes capacity	4
MEM12001B	Use comparison and basic measuring devices	2
MEM12002B	Perform electrical/electronic measurement	2
MEM12019B	Measure components using coordinate measuring machine	4
MEM12020B	Set and operate coordinate measuring machine	2
MEM12024A	Perform computations	3
MEM13001B	Perform emergency first aid	1
MEM13002B	Undertake occupational health and safety activities in the workplace	3
MEM13003B	Work safely with industrial chemicals and materials	2
MEM13004B	Work safely with molten metals/glass	2
MEM13007B	Maintain water treatment systems for cooling towers	2
MEM13013B	Work safely with ionizing radiation	4
MEM14005A	Plan a complete activity	4
MEM15001B	Perform basic statistical quality control	2

MEM15003B	Use improvement processes in team activities	4
MEM15004B	Perform inspection	2
MEM16002C	Conduct formal interviews and negotiations	4
MEM16004B	Perform internal/external customer service	2
MEM16005A	Operate as a team member to conduct manufacturing, engineering or related activities	2
MEM16008A	Interact with computing technology	2
MEM16013A	Operate in a self-directed team	2
MEM17001B	Assist in development and deliver training in the workplace	2
MEM17002B	Conduct workplace assessment	2
MEM18001C	Use hand tools	2
MEM18002B	Use power tools/hand held operations	2
MEM18003C	Use tools for precision work	4
MEM18013B	Perform gland packing	2
MEM18024B	Maintain engine cooling systems	2
MEM18025B	Service combustion engines	2
MEM18026C	Test compression ignition fuel systems	4
MEM18027C	Overhaul engine fuel system components	8
MEM18028B	Maintain engine lubrication systems	2
MEM18029B	Tune diesel engines	4
MEM18030B	Diagnose and rectify low voltage electrical systems	8
MEM18031B	Diagnose and rectify low voltage starting systems	2
MEM18032B	Maintain induction/exhaust systems	4
MEM18033B	Perform engine bottom-end overhaul	4
MEM18035B	Diagnose and rectify braking systems	6
MEM18037B	Diagnose and rectify low voltage charging systems	2
MEM18038B	Maintain wheels and tyres	2
MEM18039B	Diagnose and rectify track type undercarriage	4
MEM18040B	Maintain suspension systems	4
MEM18041B	Maintain steering systems	4
MEM18042C	Diagnose and rectify manual transmissions	4
MEM18043C	Diagnose and rectify automatic transmissions	8
MEM18044C	Diagnose and rectify drive line and final drives	4
MEM18055B	Dismantle, replace and assemble engineering components	3
MEM18063B	Terminate signal and data cables	4
MEM18071B	Connect/disconnect fluid conveying system components	2
MEM18072B	Manufacture fluid conveying conductor assemblies	4
MEM18084A	Commission and decommission split air conditioning systems	4
MEM18085A	Install, service and repair domestic air conditioning and refrigeration appliances	6
MEM18086B	Test, recover, evacuate and charge refrigeration systems	4
MEM18098A	Prepare to perform work associated with fuel system installation and servicing*	2
MEM19001B	Perform jewellery metal casting	6
MEM19002B	Prepare jewellery illustrations	4
MEM19003B	Handle gem materials	2

MEM19004B	Handle and examine gemstone materials	6
MEM19005B	Produce three-dimensional precision items	8
MEM19006B	Replace watch batteries	1
MEM19007B	Perform gemstone setting	6
MEM19008B	Prepare jewellery designs	6
MEM19009B	Perform investment procedures for lost wax casting process	1
MEM19010B	Produce rubber moulds for lost wax casting process	2
MEM19011B	Perform wax injection of moulds for lost wax casting process	2
MEM19012B	Produce jewellery wax model	4
MEM19013B	Produce jewellery metal masters	4
MEM19014B	Perform hand engraving	4
MEM19015B	Perform jewellery enamelling	4
MEM19016B	Construct jewellery components	4
MEM19017B	Fabricate jewellery items	6
MEM19018B	Repair jewellery items	6
MEM19020B	Fault-find and maintain micro-mechanisms	4
MEM19021B	Diagnose and service micro-mechanisms	6
MEM20001A	Produce keys	4
MEM20002A	Assemble and test lock mechanisms	6
MEM20003A	Install and upgrade locks and hardware	4
MEM20004A	Gain entry	4
MEM20006A	Maintain and service mechanical locking devices	6
MEM20014A	Perform a site security survey	2
MEM21001A	Replace watch batteries, capacitors and bands	2
MEM21002A	Perform watch movement exchange	2
MEM21003A	Perform watch case servicing, repair and refurbishment	4
MEM21004A	Clean watch and clock components	2
MEM21005A	Diagnose faults in quartz watches	2
MEM21006A	Service quartz watches	4
MEM21007A	Service complex quartz watches	4
MEM21008A	Service mechanical watches	4
MEM24001B	Perform basic penetrant testing	2
MEM24003B	Perform basic magnetic particle testing	2
MEM25001B	Apply fibre-reinforced materials	2
MEM25002B	Form and integrate fibre-reinforced structures	4
MEM25004B	Fair and shape surfaces	2
MEM25006B	Undertake marine sheathing operations	2
MEM25007B	Maintain marine vessel surfaces	4
MEM25011B	Install marine systems	8
MEM25012B	Install and test operations of marine auxiliary systems	6
MEM25014B	Perform marine slipping operations	2
MEM25015A	Assemble and install equipment and accessories/ancillaries	2
MEM26001A	Lay up composites using open moulding techniques	6
MEM26002A	Lay up composites using vacuum closed moulding techniques	6
MEM26003A	Lay up composites using pressure closed moulding techniques	6
MEM26004A	Make basic plugs for composites fabrication	3

MEM26005A	Make basic moulds for composites fabrication	3
MEM26006A	Mark and cut out sheets for composite use	4
MEM26007A	Select and use reinforcing appropriate for product	4
MEM26008A	Select and use resin systems appropriate for product	4
MEM26009A	Select and use cores and fillers appropriate for product	2
MEM26010A	Store and handle composite materials	2
MEM26011A	Determine materials and techniques for a composite component or product*	6
MEM26012A	Record and trial work processes for one-off composite products	4
MEM26013A	Select and use composite processes or systems appropriate for product	4
MEM26014A	Adjust resin chemicals for current conditions	4
MEM26015A	Select and apply repair techniques	6
MEM26016A	Select and use joining techniques	6
MEM26017A	Prepare composite or other substrate surfaces	4
MEM26018A	Organise composite trials	4
MEM26019A	Finish a composite product	4
MEM26020A	Identify and interpret required standards for composites	2
MEM50002B	Work safely on marine craft	1
MEM50003B	Follow work procedures to maintain the marine environment	1
MEM50004B	Maintain quality of environment by following marina codes	1
MEM50009B	Safely operate a mechanically powered recreational boat	2
CPCCLDG3001A	Licence to perform dogging	0
CPCCLRG3001A	Licence to perform rigging basic level	0
CPCCLSF2001A	Licence to erect, alter and dismantle scaffolding basic level	0
CPCCLSF3001A	Licence to erect, alter and dismantle scaffolding intermediate level	0
PMBPROD291B	Operate resin infusion moulding equipment	2
PMBPROD294B	Operate resin transfer moulding equipment	2
PMBPROD298B	Operate equipment using pre-pregs material	2
PMBPROD391B	Produce composites using resin infusion	4
PMBPROD394B	Produce composites using resin transfer moulding	4
PMBPROD398B	Produce composites using pre-preqs	4
TLILIC0012A	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	1
TLILIC2001A	Licence to operate a forklift truck	0
TLILIC2002A	Licence to operate an order picking forklift truck	0
TLILIC3003A	Licence to operate a bridge and gantry crane	0
TLILIC3006A	Licence to operate a non-slewing mobile crane (greater than three tonnes capacity)	0

MEM20413 - Certificate II in Engineering Pathways (Release 1)

Packaging Rules

The minimum requirements for achievement of the Certificate II in Engineering Pathways are completion of a minimum of twelve (12) units of competency as described below:

- all of the core units of competency listed below
- a **minimum of seven (7)** Group A electives
- a **maximum of one (1)** Group B elective.

Core units

- select all of the units from this list

Unit code	Unit title
MEM13014A	Apply principles of occupational health and safety in the work environment
MEMPE005A	Develop a career plan for the engineering and manufacturing industry
MEMPE006A	Undertake a basic engineering project
MSAENV272B	Participate in environmentally sustainable work practices

Group A electives

Unit code	Unit title
MEM16006A	Organise and communicate information
MEM16008A	Interact with computing technology
MEM18001C	Use hand tools
MEM18002B	Use power tools/hand held operations
MEMPE001A	Use engineering workshop machines
MEMPE002A	Use electric welding machines
MEMPE003A	Use oxy-acetylene and soldering equipment
MEMPE004A	Use fabrication equipment
MEMPE007A	Pull apart and re-assemble engineering mechanisms

Group B Electives

Unit code	Unit title
MSAPCI101A	Adapt to work in industry
MSAPMSUP106A	Work in a team

MEM30105 - Certificate III in Engineering - Production Systems (Release 8)

Packaging Rules

The minimum requirements for achievement of the Certificate III in Engineering - Production Systems are:

- completion of all core units of competency listed below, and
- completion of Group A production stream units from the list below to the value of at least 40 points, and
- completion of Group B specialisation units from the list below to bring the total value of elective units to at least 73 points.

Points associated with prerequisites count towards the total (refer to units for details).

Appropriate Group B elective units to the value of 16 points may be chosen from other endorsed Training Packages and accredited courses where those units are available at Certificate III. Note that the elective units listed below include all of the units that are approved for selection from the MEM05 Training Package for use in this qualification. This meets the NSSC requirement that one sixth of the total units must be able to be selected from other qualifications in the same Training Package.

Registered Training Organisations must seek a determination from Manufacturing Skills Australia in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses.

Additional qualification descriptors

The following additional descriptors are approved for use with this qualification: Surface Finishing; Marine Craft Surface Finishing.

Core Units

- select all of the units from this list

Unit code	Unit title
MEM12023A	Perform engineering measurements
MEM12024A	Perform computations
MEM13014A	Apply principles of occupational health and safety in the work environment
MEM14004A	Plan to undertake a routine task
MEM14005A	Plan a complete activity
MEM15002A	Apply quality systems
MEM15024A	Apply quality procedures
MEM16006A	Organise and communicate information
MEM16007A	Work with others in a manufacturing, engineering or related environment

MEM16008A	Interact with computing technology
MEM17003A	Assist in the provision of on the job training
MSAENV272B	Participate in environmentally sustainable work practices

Elective Units

Group A – Production stream units

- select units from this list to the value of at least 40 points

Unit code	Unit title	P
MEM03001B	Perform manual production assembly	4
MEM03002B	Perform precision assembly	4
MEM03003B	Perform sheet and plate assembly	4
MEM03004B	Perform electronic/electrical assembly (production)	8
MEM03005B	Rework and repair (electrical/electronic production)	8
MEM03006B	Set assembly stations	2
MEM04001B	Operate melting furnaces	4
MEM04002B	Perform gravity die casting	2
MEM04003B	Operate pressure die casting machine	4
MEM04004B	Prepare and mix sand for metal moulding	4
MEM04006B	Operate sand moulding and core making machines	8
MEM05001B	Perform manual soldering/desoldering - electrical/electronic components	4
MEM05002B	Perform high reliability soldering and desoldering	4
MEM05003B	Perform soft soldering	2
MEM05027A	Perform aluminothermic welding	2
MEM06003C	Carry out heat treatment	6
MEM06004B	Select heat treatment processes and test finished product	6
MEM06006C	Repair springs	4
MEM07001B	Perform operational maintenance of machines/equipment	2
MEM07003B	Perform machine setting (routine)	4
MEM07004B	Perform machine setting (complex)	8
MEM07024B	Operate and monitor machine/process	4
MEM07025B	Perform advanced machine/process operation	6
MEM07026B	Perform advanced plastic processing	6
MEM07027B	Perform advanced press operations	6
MEM07028B	Operate computer controlled machines/processes	2
MEM07042A	Undertake corrections and basic maintenance to aluminium extrusion dies and die support systems	4
MEM07043A	Identify causes of faulty aluminium extrusions	6
MEM07044A	Test a new aluminium extrusion die	4
MEM08001B	Perform wire, jig and barrel load/unload work	4
MEM08002C	Pre-treat work for subsequent surface coating	4

MEM08003C	Perform electroplating operations	6
MEM08004B	Finish work using wet, dry and vapour deposition methods	4
MEM08005B	Prepare and produce specialised coatings	4
MEM08006B	Produce clear and/or coloured and/or sealed anodised films on aluminium	2
MEM08007B	Control surface finish production and finished product quality	4
MEM08008B	Operate and control surface finishing waste treatment process	3
MEM08009C	Make up solutions	2
MEM08010B	Manually finish/polish materials	6
MEM08011B	Prepare surfaces using solvents and/or mechanical means	2
MEM08012B	Prepare surfaces by abrasive blasting (basic)	4
MEM08013B	Prepare surfaces by abrasive blasting (advanced)	4
MEM08014B	Apply protective coatings (basic)	4
MEM08015B	Apply protective coatings (advanced)	4
MEM08016B	Control blast coating by-products, materials and emissions	1
MEM08018B	Electroplate engineering coatings	6
MEM08019B	Electroplate protective finishes	6
MEM08020B	Electroplate decorative finishes	6
MEM09002B	Interpret technical drawing	4
MEM11001C	Erect/dismantle scaffolding and equipment	4
MEM11002C	Erect/dismantle complex scaffolding and equipment	4
MEM11003B	Coordinate erection/dismantling of complex scaffolding/equipment	4
MEM11004B	Undertake dogging	4
MEM11005B	Pick and process order	4
MEM11006B	Perform production packaging	2
MEM11007B	Administer inventory procedures	4
MEM11008B	Package materials (stores and warehouse)	2
MEM11009B	Handle/move bulk fluids/gases	4
MEM11010B	Operate mobile load shifting equipment	4
MEM11011B	Undertake manual handling	2
MEM11012B	Purchase materials	6
MEM11013B	Undertake warehouse receival process	4
MEM11014B	Undertake warehouse dispatch process	4
MEM11015B	Manage warehouse inventory system	6
MEM11016B	Order materials	2
MEM11017B	Organise and lead stocktakes	4
MEM11018B	Organise and maintain warehouse stock receival and/or dispatch system	6
MEM11019B	Undertake tool store procedures	4
MEM11020B	Perform advanced warehouse computer operations	4

MEM11021B	Perform advanced operation of load shifting equipment	2
MEM11022B	Operate fixed/moveable load shifting equipment	4
MEM11023A	Operate a bridge and gantry crane	4
MEM11024A	Undertake basic rigging*	4
MEM11025A	Operate a non-slewing mobile crane of greater than three tonnes capacity	4
MEM12001B	Use comparison and basic measuring devices	2
MEM12002B	Perform electrical/electronic measurement	2
MEM12019B	Measure components using coordinate measuring machine	4
MEM13003B	Work safely with industrial chemicals and materials	2
MEM13004B	Work safely with molten metals/glass	2
MEM15001B	Perform basic statistical quality control	2
MEM15003B	Use improvement processes in team activities	4
MEM15004B	Perform inspection	2
MEM15005B	Select and control inspection processes and procedures	4
MEM18001C	Use hand tools	2
MEM18002B	Use power tools/hand held operations	2
MEM18098A	Prepare to perform work associated with fuel system installation and servicing*	2
MEM26001A	Lay up composites using open moulding techniques	6
MEM26002A	Lay up composites using vacuum closed moulding techniques	6
MEM26003A	Lay up composites using pressure closed moulding techniques	6
MEM26004A	Make basic plugs for composites fabrication	3
MEM26005A	Make basic moulds for composites fabrication	3
MEM26006A	Mark and cut out sheets for composite use	4
MEM26007A	Select and use reinforcing appropriate for product	4
MEM26008A	Select and use resin systems appropriate for product	4
MEM26009A	Select and use cores and fillers appropriate for product	2
MEM26010A	Store and handle composite materials	2
MEM26011A	Determine materials and techniques for a composite component or product*	6
MEM26012A	Record and trial work processes for one-off composite products	4
MEM26013A	Select and use composite processes or systems appropriate for product	4
MEM26014A	Adjust resin chemicals for current conditions	4
MEM26015A	Select and apply repair techniques	6
MEM26016A	Select and use joining techniques	6
MEM26017A	Prepare composite or other substrate surfaces	4
MEM26018A	Organise composite trials	4
MEM26019A	Finish a composite product	4
MEM26020A	Identify and interpret required standards for composites	2
CPCCLDG3001A	Licence to perform dogging	0

CPCCLRG3001A	Licence to perform rigging basic level	0
CPCCLSF2001A	Licence to erect, alter and dismantle scaffolding basic level	0
CPCCLSF3001A	Licence to erect, alter and dismantle scaffolding intermediate level	0
TLILIC0012A	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	1
TLILIC2001A	Licence to operate a forklift truck	0
TLILIC2002A	Licence to operate an order picking forklift truck	0
TLILIC3003A	Licence to operate a bridge and gantry crane	0
TLILIC3006A	Licence to operate a non-slewing mobile crane (greater than three tonnes capacity)	0

Group B - Specialisation units

o   select units from this list to bring the total value of Production stream and Specialisation units to at least 73 points, including any prerequisites.

Unit code	Unit title	P
MEM03001B	Perform manual production assembly	4
MEM03002B	Perform precision assembly	4
MEM03003B	Perform sheet and plate assembly	4
MEM03004B	Perform electronic/electrical assembly (production)	8
MEM03005B	Rework and repair (electrical/electronic production)	8
MEM03006B	Set assembly stations	2
MEM04001B	Operate melting furnaces	4
MEM04002B	Perform gravity die casting	2
MEM04003B	Operate pressure die casting machine	4
MEM04004B	Prepare and mix sand for metal moulding	4
MEM04005C	Produce moulds and cores by hand (jobbing)	16
MEM04006B	Operate sand moulding and core making machines	8
MEM04007B	Pour molten metal	4
MEM04008B	Fettle and trim metal castings/forgings	4
MEM04010B	Develop and manufacture wood patterns	20
MEM04011B	Produce polymer patterns	8
MEM04012B	Assemble plated patterns	8
MEM04013B	Develop and manufacture polystyrene patterns	2
MEM04014B	Develop and manufacture production patterns	8
MEM04015B	Develop and manufacture vacuum forming moulds and associated equipment	6
MEM04018B	Perform general woodworking machine operations	4
MEM04019B	Perform refractory installation and repair	4
MEM05001B	Perform manual soldering/desoldering - electrical/electronic components	4
MEM05002B	Perform high reliability soldering and desoldering	4
MEM05003B	Perform soft soldering	2

MEM05004C	Perform routine oxy acetylene welding	2
MEM05005B	Carry out mechanical cutting	2
MEM05006C	Perform brazing and/or silver soldering	2
MEM05007C	Perform manual heating and thermal cutting	2
MEM05009C	Perform automated thermal cutting	2
MEM05011D	Assemble fabricated components	8
MEM05012C	Perform routine manual metal arc welding	2
MEM05013C	Perform manual production welding	2
MEM05014C	Monitor quality of production welding/fabrications	2
MEM05015D	Weld using manual metal arc welding process	4
MEM05017D	Weld using gas metal arc welding process	4
MEM05019D	Weld using gas tungsten arc welding process	4
MEM05023C	Weld using submerged arc welding process	4
MEM05041B	Weld using powder flame spraying	4
MEM05047B	Weld using flux core arc welding process	4
MEM05049B	Perform routine gas tungsten arc welding	2
MEM05050B	Perform routine gas metal arc welding	2
MEM05051A	Select welding processes	2
MEM05052A	Apply safe welding practices	4
MEM05053A	Set and edit computer controlled thermal cutting machines	4
MEM05054A	Write basic NC/CNC programs for thermal cutting machines	4
MEM06001B	Perform hand forging	4
MEM06002B	Perform hammer forging	4
MEM06003C	Carry out heat treatment	6
MEM06004B	Select heat treatment processes and test finished product	6
MEM06005B	Perform drop and upset forging	4
MEM06006C	Repair springs	4
MEM06007B	Perform basic incidental heat/quenching, tempering and annealing	2
MEM06008A	Hammer forge complex shapes	4
MEM06009A	Hand forge complex shapes	4
MEM07001B	Perform operational maintenance of machines/equipment	2
MEM07002B	Perform precision shaping/planing/slotting operations	4
MEM07003B	Perform machine setting (routine)	4
MEM07004B	Perform machine setting (complex)	8
MEM07005C	Perform general machining	8
MEM07010B	Perform tool and cutter grinding operations	4
MEM07013B	Perform machining operations using horizontal and/or vertical boring machines	4
MEM07014B	Perform electro-discharge (EDM) machining operations	4
MEM07015B	Set computer controlled machines/processes	2
MEM07016C	Set and edit computer controlled machines/processes	4
MEM07018C	Write basic NC/CNC programs	4
MEM07019C	Program NC/CNC machining centre	2
MEM07022C	Program CNC wire cut machines	2
MEM07024B	Operate and monitor machine/process	4

MEM07025B	Perform advanced machine/process operation	6
MEM07026B	Perform advanced plastic processing	6
MEM07027B	Perform advanced press operations	6
MEM07028B	Operate computer controlled machines/processes	2
MEM07029B	Perform routine sharpening/maintenance of production tools and cutters	4
MEM07030C	Perform metal spinning lathe operations (basic)	8
MEM07031C	Perform metal spinning lathe operations (complex)	4
MEM07032B	Use workshop machines for basic operations	2
MEM07033B	Operate and monitor basic boiler	6
MEM07034A	Operate and monitor intermediate class boiler	4
MEM07040A	Set multistage integrated processes	6
MEM07041A	Perform production machining*	8
MEM07042A	Undertake corrections and basic maintenance to aluminium extrusion dies and die support systems	4
MEM07043A	Identify causes of faulty aluminium extrusions	6
MEM07044A	Test a new aluminium extrusion die	4
MEM08001B	Perform wire, jig and barrel load/unload work	4
MEM08002C	Pre-treat work for subsequent surface coating	4
MEM08003C	Perform electroplating operations	6
MEM08004B	Finish work using wet, dry and vapour deposition methods	4
MEM08005B	Prepare and produce specialised coatings	4
MEM08006B	Produce clear and/or coloured and/or sealed anodised films on aluminium	2
MEM08007B	Control surface finish production and finished product quality	4
MEM08008B	Operate and control surface finishing waste treatment process	3
MEM08009C	Make up solutions	2
MEM08010B	Manually finish/polish materials	6
MEM08011B	Prepare surfaces using solvents and/or mechanical means	2
MEM08012B	Prepare surfaces by abrasive blasting (basic)	4
MEM08013B	Prepare surfaces by abrasive blasting (advanced)	4
MEM08014B	Apply protective coatings (basic)	4
MEM08015B	Apply protective coatings (advanced)	4
MEM08016B	Control blast coating by-products, materials and emissions	1
MEM08018B	Electroplate engineering coatings	6
MEM08019B	Electroplate protective finishes	6
MEM08020B	Electroplate decorative finishes	6
MEM09002B	Interpret technical drawing	4
MEM09011B	Apply basic engineering design concepts	6
MEM09022A	Create 2D code files using computer aided manufacturing system	4
MEM10002B	Terminate and connect electrical wiring	3
MEM10004B	Enter and change programmable controller operational parameters	2
MEM10011B	Terminate and connect specialist cables	3
MEM10013A	Install split air conditioning systems and associated pipework	6
MEM11001C	Erect/dismantle scaffolding and equipment	4

MEM11002C	Erect/dismantle complex scaffolding and equipment	4
MEM11003B	Coordinate erection/dismantling of complex scaffolding/equipment	4
MEM11004B	Undertake dogging	4
MEM11005B	Pick and process order	4
MEM11006B	Perform production packaging	2
MEM11007B	Administer inventory procedures	4
MEM11008B	Package materials (stores and warehouse)	2
MEM11009B	Handle/move bulk fluids/gases	4
MEM11010B	Operate mobile load shifting equipment	4
MEM11011B	Undertake manual handling	2
MEM11012B	Purchase materials	6
MEM11013B	Undertake warehouse receival process	4
MEM11014B	Undertake warehouse dispatch process	4
MEM11015B	Manage warehouse inventory system	6
MEM11016B	Order materials	2
MEM11017B	Organise and lead stocktakes	4
MEM11018B	Organise and maintain warehouse stock receival and/or dispatch system	6
MEM11019B	Undertake tool store procedures	4
MEM11020B	Perform advanced warehouse computer operations	4
MEM11021B	Perform advanced operation of load shifting equipment	2
MEM11022B	Operate fixed/moveable load shifting equipment	4
MEM12001B	Use comparison and basic measuring devices	2
MEM12002B	Perform electrical/electronic measurement	2
MEM11023A	Operate a bridge and gantry crane	4
MEM11024A	Undertake basic rigging*	4
MEM11025A	Operate a non-slewing mobile crane of greater than three tonnes capacity	4
MEM12003B	Perform precision mechanical measurement	2
MEM12004B	Perform precision electrical/electronic measurement	4
MEM12019B	Measure components using coordinate measuring machine	4
MEM12020B	Set and operate coordinate measuring machine	2
MEM12025A	Use graphical techniques and perform simple statistical computations	2
MEM13001B	Perform emergency first aid	1
MEM13002B	Undertake occupational health and safety activities in the workplace	3
MEM13003B	Work safely with industrial chemicals and materials	2
MEM13004B	Work safely with molten metals/glass	2
MEM13006B	Collect and evaluate occupational health and safety data for an enterprise or section of an enterprise	4
MEM13010A	Supervise occupational health and safety in an industrial work environment	4
MEM13013B	Work safely with ionizing radiation	4
MEM15001B	Perform basic statistical quality control	2

MEM15003B	Use improvement processes in team activities	4
MEM15004B	Perform inspection	2
MEM15005B	Select and control inspection processes and procedures	4
MEM16002C	Conduct formal interviews and negotiations	4
MEM16004B	Perform internal/external customer service	2
MEM16005A	Operate as a team member to conduct manufacturing, engineering or related activities	2
MEM16011A	Communicate with individuals and small groups	2
MEM16013A	Operate in a self-directed team	2
MEM17001B	Assist in development and deliver training in the workplace	2
MEM17002B	Conduct workplace assessment	2
MEM18001C	Use hand tools	2
MEM18002B	Use power tools/hand held operations	2
MEM18003C	Use tools for precision work	4
MEM18010C	Perform equipment condition monitoring and recording	4
MEM18045B	Fault find/repair electrical equipment/components up to 250 volts single phase supply	4
MEM18049C	Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.	3
MEM18055B	Dismantle, replace and assemble engineering components	3
MEM18063B	Terminate signal and data cables	4
MEM18071B	Connect/disconnect fluid conveying system components	2
MEM18072B	Manufacture fluid conveying conductor assemblies	4
MEM18084A	Commission and decommission split air conditioning systems	4
MEM18085A	Install, service and repair domestic air conditioning and refrigeration appliances	6
MEM18086B	Test, recover, evacuate and charge refrigeration systems	4
MEM18098A	Prepare to perform work associated with fuel system installation and servicing*	2
MEM19001B	Perform jewellery metal casting	6
MEM19002B	Prepare jewellery illustrations	4
MEM19003B	Handle gem materials	2
MEM19004B	Handle and examine gemstone materials	6
MEM19005B	Produce three-dimensional precision items	8
MEM19006B	Replace watch batteries	1
MEM19007B	Perform gemstone setting	6
MEM19009B	Perform investment procedures for lost wax casting process	1
MEM19010B	Produce rubber moulds for lost wax casting process	2
MEM19011B	Perform wax injection of moulds for lost wax casting process	2
MEM19012B	Produce jewellery wax model	4
MEM19014B	Perform hand engraving	4
MEM19015B	Perform jewellery enamelling	4
MEM19016B	Construct jewellery components	4
MEM19017B	Fabricate jewellery items	6
MEM19020B	Fault-find and maintain micro-mechanisms	4
MEM19021B	Diagnose and service micro-mechanisms	6

MEM20001A	Produce keys	4
MEM20002A	Assemble and test lock mechanisms	6
MEM20003A	Install and upgrade locks and hardware	4
MEM20004A	Gain entry	4
MEM20006A	Maintain and service mechanical locking devices	6
MEM20014A	Perform a site security survey	2
MEM24001B	Perform basic penetrant testing	2
MEM24002B	Perform penetrant testing	4
MEM24003B	Perform basic magnetic particle testing	2
MEM25001B	Apply fibre-reinforced materials	2
MEM25002B	Form and integrate fibre-reinforced structures	4
MEM25003B	Set up marine vessel structures	4
MEM25004B	Fair and shape surfaces	2
MEM25005B	Construct and assemble marine vessel timber components	8
MEM25006B	Undertake marine sheathing operations	2
MEM25007B	Maintain marine vessel surfaces	4
MEM25008B	Repair marine vessel surfaces and structures	4
MEM25009B	Form timber shapes using hot processes	2
MEM25010B	Perform fitout procedures	4
MEM25011B	Install marine systems	8
MEM25012B	Install and test operations of marine auxiliary systems	6
MEM25013B	Produce three-dimensional plugs/moulds	12
MEM25014B	Perform marine slipping operations	2
MEM25015A	Assemble and install equipment and accessories/ancillaries	2
MEM30012A	Apply mathematical techniques in a manufacturing, engineering or related environment	4
MEM50002B	Work safely on marine craft	1
MEM50003B	Follow work procedures to maintain the marine environment	1
MEM50004B	Maintain quality of environment by following marina codes	1
MEM50009B	Safely operate a mechanically powered recreational boat	2
MSAENV472B	Participate in environmentally sustainable work practices	4
AURVTN2002	Carry out panel repairs	4
CPCCLDG3001A	Licence to perform dogging	0
CPCCLRG3001A	Licence to perform rigging basic level	0
CPCCLSF2001A	Licence to erect, alter and dismantle scaffolding basic level	0
CPCCLSF3001A	Licence to erect, alter and dismantle scaffolding intermediate level	0
TLILIC0012A	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	1
TLILIC2001A	Licence to operate a forklift truck	0
TLILIC2002A	Licence to operate an order picking forklift truck	0
TLILIC3003A	Licence to operate a bridge and gantry crane	0
TLILIC3006A	Licence to operate a non-slewing mobile crane (greater than three tonnes capacity)	0
PMBPROD291B	Operate resin infusion moulding equipment	2
PMBPROD294B	Operate resin transfer moulding equipment	2

PMBPROD298B	Operate equipment using pre-pregs material	2
PMBPROD391B	Produce composites using resin infusion	4
PMBPROD394B	Produce composites using resin transfer moulding	4
PMBPROD398B	Produce composites using pre-pregs	4

MEM30305 - Certificate III in Engineering - Fabrication Trade (Release 4)

Packaging Rules

The minimum requirements for achievement of the Certificate III in Engineering - Fabrication Trade are:

- completion of all core units of competency listed below, and
- completion of Group A Fabrication stream units listed below to the value of at least 40 points, and
- completion of units from Group B Certificate III Trade specialisation units listed in Appendix 1, Volume 1 of the Training Package, to bring the total value to at least 73 points

Points associated with prerequisites count towards the total (refer to units and prerequisites listing in Appendix 2, Volume 1).

Appropriate Group B elective units to the value of 16 points may be chosen from other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate III. Note that the elective units listed below include all of the units that are approved for selection from the MEM Training Package for use in this qualification. This meets the NQC requirement that one sixth of the total units must be able to be selected from other qualifications in the same Training Package.

Registered Training Organisations must seek a determination from Manufacturing Skills Australia in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses.

Only select units that would be suitable for Fabrication Trade occupational outcomes.

Additional qualification descriptors

The following additional descriptors are approved for use with this qualification: Casting and Moulding; Heavy Fabrication; Light Fabrication; Maintenance; Patternmaking; Surface Finishing; Welding.

Core units

- select all of the units from this list

Unit code	Unit title
MEM12023A	Perform engineering measurements
MEM12024A	Perform computations
MEM13014A	Apply principles of occupational health and safety in the work environment

MEM14004A	Plan to undertake a routine task
MEM14005A	Plan a complete activity
MEM15002A	Apply quality systems
MEM15024A	Apply quality procedures
MEM16006A	Organise and communicate information
MEM16007A	Work with others in a manufacturing, engineering or related environment
MEM16008A	Interact with computing technology
MEM17003A	Assist in the provision of on the job training
MSAENV272B	Participate in environmentally sustainable work practices

Elective Units

Group A – Fabrication Trade stream units

- select units from this list to the value of at least 40 points

Unit code	Unit title	P
MEM03003B	Perform sheet and plate assembly	4
MEM04001B	Operate melting furnaces	4
MEM04002B	Perform gravity die casting	2
MEM04003B	Operate pressure die casting machine	4
MEM04004B	Prepare and mix sand for metal moulding	4
MEM04005C	Produce moulds and cores by hand (jobbing)	16
MEM04006B	Operate sand moulding and core making machines	8
MEM04007B	Pour molten metal	4
MEM04008B	Fettle and trim metal castings/forgings	4
MEM04010B	Develop and manufacture wood patterns	20
MEM04011B	Produce polymer patterns	8
MEM04012B	Assemble plated patterns	8
MEM04013B	Develop and manufacture polystyrene patterns	2
MEM04014B	Develop and manufacture production patterns	8
MEM04015B	Develop and manufacture vacuum forming moulds and associated equipment	6
MEM04016C	Develop and manufacture precision models	6
MEM04017B	Develop and manufacture gear, conveyor screw and propeller patterns	4

MEM04018B	Perform general woodworking machine operations	4
MEM04019B	Perform refractory installation and repair	4
MEM05001B	Perform manual soldering/desoldering - electrical/electronic components	4
MEM05002B	Perform high reliability soldering and desoldering	4
MEM05003B	Perform soft soldering	2
MEM05004C	Perform routine oxy acetylene welding	2
MEM05005B	Carry out mechanical cutting	2
MEM05006C	Perform brazing and/or silver soldering	2
MEM05007C	Perform manual heating and thermal cutting	2
MEM05008C	Perform advanced manual thermal cutting, gouging and shaping	2
MEM05009C	Perform automated thermal cutting	2
MEM05010C	Apply fabrication, forming and shaping techniques	8
MEM05011D	Assemble fabricated components	8
MEM05012C	Perform routine manual metal arc welding	2
MEM05013C	Perform manual production welding	2
MEM05014C	Monitor quality of production welding/fabrications	2
MEM05015D	Weld using manual metal arc welding process	4
MEM05016C	Perform advanced welding using manual metal arc welding process	4
MEM05017D	Weld using gas metal arc welding process	4
MEM05018C	Perform advanced welding using gas metal arc welding process	4
MEM05019D	Weld using gas tungsten arc welding process	4
MEM05020C	Perform advanced welding using gas tungsten arc welding process	4
MEM05022C	Perform advanced welding using oxy acetylene welding process	6
MEM05023C	Weld using submerged arc welding process	4
MEM05026C	Apply welding principles	4
MEM05036C	Repair/replace/modify fabrications	4
MEM05037C	Perform geometric development	6
MEM05038B	Perform advanced geometric development - cylindrical/rectangular	2

MEM05039B	Perform advanced geometric development - conical	2
MEM05040B	Perform advanced geometric development - transitions	4
MEM05041B	Weld using powder flame spraying	4
MEM05047B	Weld using flux core arc welding process	4
MEM05048B	Perform advanced welding using flux core arc welding process	4
MEM05049B	Perform routine gas tungsten arc welding	2
MEM05050B	Perform routine gas metal arc welding	2
MEM05051A	Select welding processes	2
MEM05052A	Apply safe welding practices	4
MEM05053A	Set and edit computer controlled thermal cutting machines	4
MEM05054A	Write basic NC/CNC programs for thermal cutting machines	4
MEM06001B	Perform hand forging	4
MEM06002B	Perform hammer forging	4
MEM06003C	Carry out heat treatment	6
MEM06004B	Select heat treatment processes and test finished product	6
MEM06005B	Perform drop and upset forging	4
MEM06006C	Repair springs	4
MEM06008A	Hammer forge complex shapes	4
MEM06009A	Hand forge complex shapes	4
MEM08001B	Perform wire, jig and barrel load/unload work	4
MEM08002C	Pre-treat work for subsequent surface coating	4
MEM08003C	Perform electroplating operations	6
MEM08004B	Finish work using wet, dry and vapour deposition methods	4
MEM08005B	Prepare and produce specialised coatings	4
MEM08006B	Produce clear and/or coloured and/or sealed anodised films on aluminium	2
MEM08007B	Control surface finish production and finished product quality	4
MEM08008B	Operate and control surface finishing waste treatment process	3
MEM08009C	Make up solutions	2
MEM08010B	Manually finish/polish materials	6
MEM08011B	Prepare surfaces using solvents and/or mechanical means	2

MEM08012B	Prepare surfaces by abrasive blasting (basic)	4
MEM08013B	Prepare surfaces by abrasive blasting (advanced)	4
MEM08014B	Apply protective coatings (basic)	4
MEM08015B	Apply protective coatings (advanced)	4
MEM08016B	Control blast coating by-products, materials and emissions	1
MEM08018B	Electroplate engineering coatings	6
MEM08019B	Electroplate protective finishes	6
MEM08020B	Electroplate decorative finishes	6
MEM09002B	Interpret technical drawing	4
MEM10001C	Erect structures	4
MEM12007D	Mark off/out structural fabrications and shapes	4
MEM18001C	Use hand tools	2
MEM18002B	Use power tools/hand held operations	2
MEM18098A	Prepare to perform work associated with fuel system installation and servicing*	2

MEM30319 - Certificate III in Engineering - Fabrication Trade (Release 1)

Packaging Rules

To be awarded the MEM30319 Certificate III in Engineering – Fabrication Trade, units of competency to the value of 96 points must be achieved, chosen as outlined below:

- all core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Groups A, B, C, D, E, F and G as described below
- elective units of competency to a maximum value of 23 points from Group H to bring the total value to 96 points.

To be awarded the MEM30319 Certificate III in Engineering – Fabrication Trade (Boilermaking), units of competency to the value of 96 points must be achieved, chosen as outlined below:

- all core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Group B as described below
- elective units of competency to a maximum value of 23 points from Group H to bring the total value to 96 points.

To be awarded the MEM30319 Certificate III in Engineering – Fabrication Trade (Welding), units of competency to the value of 96 points must be achieved, chosen as outlined below:

- all core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Group C as described below
- elective units of competency to a maximum value of 23 points from Group H to bring the total value to 96 points.

To be awarded the MEM30319 Certificate III in Engineering – Fabrication Trade (Boilermaking/welding), units of competency to the value of 96 points must be achieved, chosen as outlined below:

- all core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Group D as described below
- elective units of competency to a maximum value of 23 points from Group H to bring the total value to 6 points.

To be awarded the MEM30319 Certificate III in Engineering – Fabrication Trade (Sheetmetal working), units of competency to the value of 96 points must be achieved, chosen as outlined below:

- all core units of competency listed below (totalling 33 points)

- elective units of competency to a minimum value of 40 points from Group E as described below
- elective units of competency to a maximum value of 23 points from Group H to bring the total value to 96 points.

To be awarded the MEM30319 Certificate III in Engineering – Fabrication Trade (Blacksmithing), units of competency to the value of 96 points must be achieved, chosen as outlined below:

- all core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Group F as described below
- elective units of competency to a maximum value of 23 points from Group H to bring the total value to 96 points.

To be awarded the MEM30319 Certificate III in Engineering – Fabrication Trade (Surface finishing), units of competency to the value of 96 points must be achieved, chosen as outlined below:

- all core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Group G as described below
- elective units of competency to a maximum value of 23 points from Group H to bring the total value to 96 points.

Appropriate Group H elective units to the value of 8 points may be chosen from this Training Package, other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate III. Only select units that would be suitable for occupational outcomes in a fabrication trade environment.

Registered Training Organisations (RTOs) must seek a determination from the industry parties in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses. Determination of points requests are to be submitted to the industry parties through Innovation and Business Skills Australia (IBSA) Manufacturing. Refer to the MEM Companion Volume Implementation Guide for information on determination of unit points values.

Prerequisites

Points associated with prerequisites count towards the total. Units with prerequisite requirements are marked with an asterisk (refer to the individual units for details). All prerequisites are included in the units listed.

Core units of competency

Unit code	Unit title	P	Prereq
MEM09002	Interpret technical drawing	4	*
MEM11011	Undertake manual handling	2	*
MEM12023	Perform engineering measurements	5	*

MEM12024	Perform computations	3	*
MEM13015	Work safely and effectively in manufacturing and engineering	2	
MEM14006	Plan work activities	4	*
MEM16006	Organise and communicate information	2	*
MEM16008	Interact with computing technology	2	*
MEM17003	Assist in the provision of on-the-job training	2	*
MEM18001	Use hand tools	2	*
MEM18002	Use power tools/hand held operations	2	*
MSMENV272	Participate in environmentally sustainable work practices	3	

Elective units of competency

Packaging for a generic fabrication trade qualification - choose a minimum value of 40 points from Group A.

Packaging for a trade specialisation - choose a minimum value of 40 points from **one of either** Group B or C or D or E or F or G.

Group A - Fabrication Trade generic electives

Unit code	Unit title	P	Prereq
MEM05003	Perform soft soldering	2	*
MEM05004	Perform routine oxy fuel gas welding	2	*
MEM05005	Carry out mechanical cutting	2	*
MEM05006	Perform brazing and/or silver soldering	2	*
MEM05007	Perform manual heating and thermal cutting	2	*
MEM05008	Perform advanced manual thermal cutting, gouging and shaping	2	*
MEM05009	Perform automated thermal cutting	2	*
MEM05010	Apply fabrication, forming and shaping techniques	8	*
MEM05011	Assemble fabricated components	8	*
MEM05012	Perform routine manual metal arc welding	2	*
MEM05014	Monitor quality of production welding/fabrications	2	*
MEM05015	Weld using manual metal arc welding process	4	*
MEM05016	Perform advanced welding using manual metal arc welding process	4	*
MEM05017	Weld using gas metal arc welding process	4	*
MEM05018	Perform advanced welding using gas metal arc welding process	4	*
MEM05019	Weld using gas tungsten arc welding process	4	*
MEM05020	Perform advanced welding using gas tungsten arc welding process	4	*
MEM05022	Perform advanced welding using oxy acetylene welding process	6	*
MEM05023	Weld using submerged arc welding process	4	*
MEM05036	Repair, replace and/or modify fabrications	4	*
MEM05037	Perform geometric development	6	*
MEM05041	Weld using flame powder spraying	4	*

MEM05047	Weld using flux core arc welding process	4	*
MEM05048	Perform advanced welding using flux core arc welding process	4	*
MEM05049	Perform routine gas tungsten arc welding	2	*
MEM05050	Perform routine gas metal arc welding	2	*
MEM05051	Select welding processes	2	*
MEM05052	Apply safe welding practices	4	*
MEM05053	Set and edit computer controlled thermal cutting machines	4	*
MEM05055	Weld using oxy fuel gas welding process	4	*
MEM05056	Perform routine flux core arc welding	2	*
MEM05057	Perform routine submerged arc welding	2	*
MEM08010	Manually finish/polish materials	6	*
MEM09011	Apply basic engineering design concepts	6	*
MEM12007	Mark off/out structural fabrications and shapes	4	*
MEM18055	Dismantle, replace and assemble engineering components	3	*

Group B - Boilermaking Trade specialisation electives

Unit code	Unit title	P	Prereq
MEM05004	Perform routine oxy fuel gas welding	2	*
MEM05005	Carry out mechanical cutting	2	*
MEM05007	Perform manual heating and thermal cutting	2	*
MEM05008	Perform advanced manual thermal cutting, gouging and shaping	2	*
MEM05009	Perform automated thermal cutting	2	*
MEM05010	Apply fabrication, forming and shaping techniques	8	*
MEM05011	Assemble fabricated components	8	*
MEM05012	Perform routine manual metal arc welding	2	*
MEM05015	Weld using manual metal arc welding process	4	*
MEM05017	Weld using gas metal arc welding process	4	*
MEM05019	Weld using gas tungsten arc welding process	4	*
MEM05023	Weld using submerged arc welding process	4	*
MEM05036	Repair, replace and/or modify fabrications	4	*
MEM05037	Perform geometric development	6	*
MEM05047	Weld using flux core arc welding process	4	*
MEM05049	Perform routine gas tungsten arc welding	2	*
MEM05050	Perform routine gas metal arc welding	2	*
MEM05051	Select welding processes	2	*
MEM05052	Apply safe welding practices	4	*
MEM05055	Weld using oxy fuel gas welding process	4	*
MEM05056	Perform routine flux core arc welding	2	*
MEM05057	Perform routine submerged arc welding	2	*
MEM09011	Apply basic engineering design concepts	6	*
MEM12007	Mark off/out structural fabrications and shapes	4	*
MEM18055	Dismantle, replace and assemble engineering components	3	*

Group C – Welding Trade specialisation electives

Unit code	Unit title	P	Prereq
MEM05004	Perform routine oxy fuel gas welding	2	*
MEM05005	Carry out mechanical cutting	2	*
MEM05006	Perform brazing and/or silver soldering	2	*
MEM05007	Perform manual heating and thermal cutting	2	*
MEM05011	Assemble fabricated components	8	*
MEM05012	Perform routine manual metal arc welding	2	*
MEM05014	Monitor quality of production welding/fabrications	2	*
MEM05015	Weld using manual metal arc welding process	4	*
MEM05016	Perform advanced welding using manual metal arc welding process	4	*
MEM05017	Weld using gas metal arc welding process	4	*
MEM05018	Perform advanced welding using gas metal arc welding process	4	*
MEM05019	Weld using gas tungsten arc welding process	4	*
MEM05020	Perform advanced welding using gas tungsten arc welding process	4	*
MEM05022	Perform advanced welding using oxy acetylene welding process	6	*
MEM05023	Weld using submerged arc welding process	4	*
MEM05041	Weld using flame powder spraying	4	*
MEM05047	Weld using flux core arc welding process	4	*
MEM05048	Perform advanced welding using flux core arc welding process	4	*
MEM05049	Perform routine gas tungsten arc welding	2	*
MEM05050	Perform routine gas metal arc welding	2	*
MEM05051	Select welding processes	2	*
MEM05052	Apply safe welding practices	4	*
MEM05055	Weld using oxy fuel gas welding process	4	*
MEM05056	Perform routine flux core arc welding	2	*
MEM05057	Perform routine submerged arc welding	2	*

Group D – Boilermaking/Welding Trade specialisation electives

Unit code	Unit title	P	Prereq
MEM05004	Perform routine oxy fuel gas welding	2	*
MEM05005	Carry out mechanical cutting	2	*
MEM05007	Perform manual heating and thermal cutting	2	*
MEM05008	Perform advanced manual thermal cutting, gouging and shaping	2	*
MEM05009	Perform automated thermal cutting	2	*
MEM05010	Apply fabrication, forming and shaping techniques	8	*
MEM05011	Assemble fabricated components	8	*
MEM05012	Perform routine manual metal arc welding	2	*
MEM05015	Weld using manual metal arc welding process	4	*
MEM05016	Perform advanced welding using manual metal arc welding process	4	*
MEM05017	Weld using gas metal arc welding process	4	*
MEM05018	Perform advanced welding using gas metal arc welding process	4	*

MEM05019	Weld using gas tungsten arc welding process	4	*
MEM05020	Perform advanced welding using gas tungsten arc welding process	4	*
MEM05022	Perform advanced welding using oxy acetylene welding process	6	*
MEM05023	Weld using submerged arc welding process	4	*
MEM05036	Repair, replace and/or modify fabrications	4	*
MEM05037	Perform geometric development	6	*
MEM05041	Weld using flame powder spraying	4	*
MEM05047	Weld using flux core arc welding process	4	*
MEM05048	Perform advanced welding using flux core arc welding process	4	*
MEM05049	Perform routine gas tungsten arc welding	2	*
MEM05050	Perform routine gas metal arc welding	2	*
MEM05051	Select welding processes	2	*
MEM05052	Apply safe welding practices	4	*
MEM05055	Weld using oxy fuel gas welding process	4	*
MEM05056	Perform routine flux core arc welding	2	*
MEM05057	Perform routine submerged arc welding	2	*
MEM09011	Apply basic engineering design concepts	6	*
MEM12007	Mark off/out structural fabrications and shapes	4	*
MEM18055	Dismantle, replace and assemble engineering components	3	*

Group E – Sheetmetal working Trade specialisation electives

Unit code	Unit title	P	Prereq
MEM05003	Perform soft soldering	2	*
MEM05004	Perform routine oxy fuel gas welding	2	*
MEM05005	Carry out mechanical cutting	2	*
MEM05006	Perform brazing and/or silver soldering	2	*
MEM05007	Perform manual heating and thermal cutting	2	*
MEM05010	Apply fabrication, forming and shaping techniques	8	*
MEM05011	Assemble fabricated components	8	*
MEM05012	Perform routine manual metal arc welding	2	*
MEM05015	Weld using manual metal arc welding process	4	*
MEM05017	Weld using gas metal arc welding process	4	*
MEM05019	Weld using gas tungsten arc welding process	4	*
MEM05037	Perform geometric development	6	*
MEM05049	Perform routine gas tungsten arc welding	2	*
MEM05050	Perform routine gas metal arc welding	2	*
MEM05051	Select welding processes	2	*
MEM05052	Apply safe welding practices	4	*
MEM05055	Weld using oxy fuel gas welding process	4	*
MEM05056	Perform routine flux core arc welding	2	*
MEM05057	Perform routine submerged arc welding	2	*
MEM09011	Apply basic engineering design concepts	6	*
MEM12007	Mark off/out structural fabrications and shapes	4	*
MEM18055	Dismantle, replace and assemble engineering components	3	*

Group F – Blacksmithing Trade specialisation electives

Unit code	Unit title	P	Prereq
MEM05005	Carry out mechanical cutting	2	*
MEM05007	Perform manual heating and thermal cutting	2	*
MEM05012	Perform routine manual metal arc welding	2	*
MEM05049	Perform routine gas tungsten arc welding	2	*
MEM05050	Perform routine gas metal arc welding	2	*
MEM05056	Perform routine flux core arc welding	2	*
MEM05057	Perform routine submerged arc welding	2	*
MEM06001	Perform hand forging	4	*
MEM06002	Perform hammer forging	4	*
MEM06003	Carry out heat treatment	6	*
MEM06004	Select heat treatment processes and test finished product	6	*
MEM06005	Perform drop and upset forging	4	*
MEM06006	Repair springs	4	*
MEM06007	Perform basic incidental heat/quenching, tempering and annealing	2	*
MEM06008	Hammer forge complex shapes	4	*
MEM06009	Hand forge complex shapes	4	*

Group G – Surface Finishing Trade specialisation electives

Unit code	Unit title	P	Pre-req
MEM08001	Perform wire, jig and barrel load/unload work	4	*
MEM08002	Pre-treat work for subsequent surface coating	4	*
MEM08003	Perform electroplating operations	6	*
MEM08004	Finish work using wet, dry and vapour deposition methods	4	*
MEM08005	Prepare and produce specialised coatings	4	*
MEM08006	Produce clear and/or coloured and/or sealed anodised films on aluminium	2	*
MEM08007	Control surface finish production and finished product quality	4	*
MEM08008	Operate and control surface finishing waste treatment process	3	*
MEM08009	Make up solutions	2	*
MEM08010	Manually finish/polish materials	6	*
MEM08011	Prepare surfaces using solvents and/or mechanical means	2	*
MEM08012	Prepare surfaces by abrasive blasting (basic)	4	*
MEM08013	Prepare surfaces by abrasive blasting (advanced)	4	*
MEM08014	Apply protective coatings (basic)	4	*
MEM08015	Apply protective coatings (advanced)	4	*
MEM08016	Control blast coating by-products, materials and emissions	1	*
MEM08018	Electroplate engineering coatings	6	*
MEM08019	Electroplate protective finishes	6	*
MEM08020	Electroplate decorative finishes	6	*
MEM11009	Handle/move bulk fluids/gases	4	*

Group H – General electives

Unit code	Unit title	P	Prereq
MEM05001	Perform manual soldering/desoldering – electrical/electronic components	4	*
MEM05002	Perform high reliability soldering and desoldering	4	*
MEM05003	Perform soft soldering	2	*
MEM05004	Perform routine oxy fuel gas welding	2	*
MEM05005	Carry out mechanical cutting	2	*
MEM05006	Perform brazing and/or silver soldering	2	*
MEM05007	Perform manual heating and thermal cutting	2	*
MEM05008	Perform advanced manual thermal cutting, gouging and shaping	2	*
MEM05009	Perform automated thermal cutting	2	*
MEM05010	Apply fabrication, forming and shaping techniques	8	*
MEM05011	Assemble fabricated components	8	*
MEM05012	Perform routine manual metal arc welding	2	*
MEM05014	Monitor quality of production welding/fabrications	2	*
MEM05015	Weld using manual metal arc welding process	4	*
MEM05016	Perform advanced welding using manual metal arc welding process	4	*
MEM05017	Weld using gas metal arc welding process	4	*
MEM05018	Perform advanced welding using gas metal arc welding process	4	*
MEM05019	Weld using gas tungsten arc welding process	4	*
MEM05020	Perform advanced welding using gas tungsten arc welding process	4	*
MEM05022	Perform advanced welding using oxy acetylene welding process	6	*
MEM05023	Weld using submerged arc welding process	4	*
MEM05027	Perform aluminothermic welding	2	*
MEM05036	Repair, replace and/or modify fabrications	4	*
MEM05037	Perform geometric development	6	*
MEM05041	Weld using flame powder spraying	4	*
MEM05047	Weld using flux core arc welding process	4	*
MEM05048	Perform advanced welding using flux core arc welding process	4	*
MEM05049	Perform routine gas tungsten arc welding	2	*
MEM05050	Perform routine gas metal arc welding	2	*
MEM05051	Select welding processes	2	*
MEM05052	Apply safe welding practices	4	*
MEM05053	Set and edit computer controlled thermal cutting machines	4	*
MEM05055	Weld using oxy fuel gas welding process	4	*
MEM05056	Perform routine flux core arc welding	2	*
MEM05057	Perform routine submerged arc welding	2	*
MEM06001	Perform hand forging	4	*
MEM06002	Perform hammer forging	4	*
MEM06003	Carry out heat treatment	6	*
MEM06004	Select heat treatment processes and test finished product	6	*

MEM06005	Perform drop and upset forging	4	*
MEM06006	Repair springs	4	*
MEM06007	Perform basic incidental heat/quenching, tempering and annealing	2	*
MEM06008	Hammer forge complex shapes	4	*
MEM06009	Hand forge complex shapes	4	*
MEM07001	Perform operational maintenance of machines/equipment	2	*
MEM07015	Set computer controlled machines and processes	2	*
MEM07016	Set and edit computer controlled machines and processes	4	*
MEM07024	Operate and monitor machine and process	4	*
MEM07028	Operate computer controlled machines and processes	2	*
MEM07030	Perform basic metal spinning lathe operations	8	*
MEM07031	Perform complex metal spinning lathe operations	4	*
MEM07032	Use workshop machines for basic operations	2	*
MEM08001	Perform wire, jig and barrel load/unload work	4	*
MEM08002	Pre-treat work for subsequent surface coating	4	*
MEM08003	Perform electroplating operations	6	*
MEM08004	Finish work using wet, dry and vapour deposition methods	4	*
MEM08005	Prepare and produce specialised coatings	4	*
MEM08006	Produce clear and/or coloured and/or sealed anodised films on aluminium	2	*
MEM08007	Control surface finish production and finished product quality	4	*
MEM08008	Operate and control surface finishing waste treatment process	3	*
MEM08009	Make up solutions	2	*
MEM08010	Manually finish/polish materials	6	*
MEM08011	Prepare surfaces using solvents and/or mechanical means	2	*
MEM08012	Prepare surfaces by abrasive blasting (basic)	4	*
MEM08013	Prepare surfaces by abrasive blasting (advanced)	4	*
MEM08014	Apply protective coatings (basic)	4	*
MEM08015	Apply protective coatings (advanced)	4	*
MEM08016	Control blast coating by-products, materials and emissions	1	*
MEM08018	Electroplate engineering coatings	6	*
MEM08019	Electroplate protective finishes	6	*
MEM08020	Electroplate decorative finishes	6	*
MEM09003	Prepare basic engineering drawing	8	*
MEM09011	Apply basic engineering design concepts	6	*
MEM10001	Erect structures	4	*
MEM10010	Install pipework and pipework assemblies	4	*
MEM11001	Erect/dismantle scaffolding and equipment	4	*
MEM11009	Handle/move bulk fluids/gases	4	*
MEM11010	Operate mobile load shifting equipment	4	*
MEM11016	Order materials	2	*
MEM11022	Operate fixed/moveable load shifting equipment	4	*
MEM12007	Mark off/out structural fabrications and shapes	4	*
MEM12025	Use graphical techniques and perform simple statistical computations	2	*

MEM13001	Perform emergency first aid	1	*
MEM13002	Undertake work health and safety activities in the workplace	3	*
MEM13003	Work safely with industrial chemicals and materials	2	*
MEM15001	Perform basic statistical quality control	2	*
MEM15003	Use improvement processes in team activities	4	*
MEM15004	Perform inspection	2	*
MEM16004	Perform internal/external customer service	2	*
MEM16005	Operate as a team member to conduct manufacturing, engineering or related activities	2	*
MEM18003	Use tools for precision work	4	*
MEM18011	Shut down and isolate machines/equipment	2	*
MEM18055	Dismantle, replace and assemble engineering components	3	*
MEM24001B	Perform basic penetrant testing	2	*
MEM24003B	Perform basic magnetic particle testing	2	*
MEM24007B	Perform ultrasonic thickness testing	2	*
MSMENV472	Implement and monitor environmentally sustainable work practices	4	
TLILIC0003	Licence to operate a forklift truck	0	
TLILIC0002	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	1	

MEM30205 - Certificate III in Engineering - Mechanical Trade (Release 3)

Packaging Rules

The minimum requirements for achievement of the Certificate III in Engineering - Mechanical Trade are:

- completion of all core units of competency listed below, and
- completion of Group A Mechanical Trade stream units to the value of at least 40 points, and
- completion of units from Group B Certificate III Trade specialisation units listed in Appendix 1, Volume 1 of the Training Package, to bring the total value to at least 73 points

Points associated with prerequisites count towards the total (refer to units and prerequisites listing in Appendix 2, Volume 1).

Appropriate Group B elective units to the value of 16 points may be chosen from other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate III. Note that the elective units listed below include all of the units that are approved for selection from the MEM Training Package for use in this qualification. This meets the NQC requirement that one sixth of the total units must be able to be selected from other qualifications in the same Training Package.

Registered Training Organisations must seek a determination from Manufacturing Skills Australia in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses.

Only select units that would be suitable for Mechanical Trade occupational outcomes.

Additional qualification descriptors

The following additional descriptors are approved for use with this qualification: Refrigeration and Air Conditioning; Instrumentation; Maintenance; Patternmaking; Toolmaking; Watchmaking; Machining.

Core units

- select all of the units from this list

Unit code	Unit title
MEM12023A	Perform engineering measurements
MEM12024A	Perform computations
MEM13014A	Apply principles of occupational health and safety in the work environment
MEM14004A	Plan to undertake a routine task

MEM14005A	Plan a complete activity
MEM15002A	Apply quality systems
MEM15024A	Apply quality procedures
MEM16006A	Organise and communicate information
MEM16007A	Work with others in a manufacturing, engineering or related environment
MEM16008A	Interact with computing technology
MEM17003A	Assist in the provision of on the job training
MSAENV272B	Participate in environmentally sustainable work practices

Elective Units

Group A – Mechanical Trade stream units

- select units from this list to the value of at least 40 points

Unit code	Unit title	P
MEM07001B	Perform operational maintenance of machines/equipment	2
MEM07002B	Perform precision shaping/planing/slotting operations	4
MEM07003B	Perform machine setting (routine)	4
MEM07004B	Perform machine setting (complex)	8
MEM07005C	Perform general machining	8
MEM07006C	Perform lathe operations	4
MEM07007C	Perform milling operations	4
MEM07008D	Perform grinding operations	4
MEM07009B	Perform precision jig boring operations	4
MEM07010B	Perform tool and cutter grinding operations	4
MEM07011B	Perform complex milling operations	4
MEM07012B	Perform complex grinding operations	4
MEM07013B	Perform machining operations using horizontal and/or vertical boring machines	4
MEM07014B	Perform electro-discharge (EDM) machining operations	4
MEM07015B	Set computer controlled machines/processes	2
MEM07016C	Set and edit computer controlled machines/processes	4
MEM07018C	Write basic NC/CNC programs	4
MEM07019C	Program NC/CNC machining centre	2
MEM07020C	Program multiple spindle and/or multiple axis NC/CNC machining centre	2

MEM07021B	Perform complex lathe operations	4
MEM07022C	Program CNC wire cut machines	2
MEM07023C	Program and set up CNC manufacturing cell	6
MEM07024B	Operate and monitor machine/process	4
MEM07025B	Perform advanced machine/process operation	6
MEM07026B	Perform advanced plastic processing	6
MEM07027B	Perform advanced press operations	6
MEM07028B	Operate computer controlled machines/processes	2
MEM07029B	Perform routine sharpening/maintenance of production tools and cutters	4
MEM07030C	Perform metal spinning lathe operations (basic)	8
MEM07031C	Perform metal spinning lathe operations (complex)	4
MEM07032B	Use workshop machines for basic operations	2
MEM07033B	Operate and monitor basic boiler	6
MEM07034A	Operate and monitor intermediate class boiler	4
MEM07040A	Set multistage integrated processes	6
MEM09002B	Interpret technical drawing	4
MEM09022A	Create 2D code files using computer aided manufacturing system	4
MEM10004B	Enter and change programmable controller operational parameters	2
MEM10006B	Install machine/plant	4
MEM12003B	Perform precision mechanical measurement	2
MEM12006C	Mark off/out (general engineering)	4
MEM13007B	Maintain water treatment systems for cooling towers	2
MEM18001C	Use hand tools	2
MEM18002B	Use power tools/hand held operations	2
MEM18003C	Use tools for precision work	4
MEM18004B	Maintain and overhaul mechanical equipment	4
MEM18005B	Perform fault diagnosis, installation and removal of bearings	4
MEM18006C	Repair and fit engineering components	6
MEM18007B	Maintain and repair mechanical drives and mechanical transmission assemblies	4

MEM18008B	Balance equipment	2
MEM18009B	Perform levelling and alignment of machines and engineering components	4
MEM18010C	Perform equipment condition monitoring and recording	4
MEM18011C	Shut down and isolate machines/equipment	2
MEM18012B	Perform installation and removal of mechanical seals	2
MEM18013B	Perform gland packing	2
MEM18014B	Manufacture press tools and gauges	8
MEM18015B	Maintain tools and dies	4
MEM18018C	Maintain pneumatic system components	4
MEM18019B	Maintain pneumatic systems	4
MEM18020B	Maintain hydraulic system components	4
MEM18021B	Maintain hydraulic systems	4
MEM18022B	Maintain fluid power controls	8
MEM18024B	Maintain engine cooling systems	2
MEM18025B	Service combustion engines	2
MEM18026C	Test compression ignition fuel systems	4
MEM18027C	Overhaul engine fuel system components	8
MEM18028B	Maintain engine lubrication systems	2
MEM18029B	Tune diesel engines	4
MEM18030B	Diagnose and rectify low voltage electrical systems	8
MEM18031B	Diagnose and rectify low voltage starting systems	2
MEM18032B	Maintain induction/exhaust systems	4
MEM18033B	Perform engine bottom-end overhaul	4
MEM18034B	Perform engine top-end overhaul	8
MEM18035B	Diagnose and rectify braking systems	6
MEM18037B	Diagnose and rectify low voltage charging systems	2
MEM18038B	Maintain wheels and tyres	2
MEM18039B	Diagnose and rectify track type undercarriage	4
MEM18040B	Maintain suspension systems	4
MEM18041B	Maintain steering systems	4
MEM18042C	Diagnose and rectify manual transmissions	4
MEM18043C	Diagnose and rectify automatic transmissions	8

MEM18044C	Diagnose and rectify drive line and final drives	4
MEM18045B	Fault find/repair electrical equipment/components up to 250 volts single phase supply	4
MEM18046B	Fault find/repair electrical equipment/components up to 1000 volts a.c./1500 volts d.c.	10
MEM18047B	Diagnose and maintain electronic controlling systems on mobile plant	4
MEM18048B	Fault find and repair/rectify basic electrical circuits	12
MEM18049C	Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.	3
MEM18050C	Disconnect/reconnect fixed wired equipment over 1000 volts a.c./1500 volts d.c.	3
MEM18051B	Fault find and repair/rectify complex electrical circuits	6
MEM18052B	Maintain fluid power systems for mobile plant	4
MEM18054B	Fault find, test and calibrate instrumentation systems and equipment	8
MEM18055B	Dismantle, replace and assemble engineering components	3
MEM18056B	Diagnose and repair analog equipment and components	10
MEM18057B	Maintain/service analog/digital electronic equipment	6
MEM18058C	Modify electronic equipment	4
MEM18060B	Maintain, repair control instrumentation - single and multiple loop control systems	8
MEM18062B	Install, maintain and calibrate instrumentation sensors, transmitters and final control elements	8
MEM18063B	Terminate signal and data cables	4
MEM18064B	Maintain instrumentation system components	6
MEM18065B	Diagnose and repair digital equipment and components	10
MEM18066B	Diagnose and repair microprocessor-based equipment	6

MEM18067B	Tune control loops - multi controller or multi element systems	6
MEM18071B	Connect/disconnect fluid conveying system components	2
MEM18072B	Manufacture fluid conveying conductor assemblies	4
MEM18086B	Test, recover, evacuate and charge refrigeration systems	4
MEM18087B	Service and repair domestic and light commercial refrigeration and air conditioning equipment	6
MEM18088B	Maintain and repair commercial air conditioning systems and components	4
MEM18089B	Maintain and repair central air handling systems	6
MEM18090B	Maintain and repair industrial refrigeration systems and components	6
MEM18091B	Maintain and repair multi stage, cascade and/or ultra-cold industrial refrigeration systems	4
MEM18092B	Maintain and repair commercial and/or industrial refrigeration and/or air conditioning controls	6
MEM18094B	Service and repair commercial refrigeration	6
MEM18095A	Maintain and repair cooling towers/evaporative condensers and associated equipment	4
MEM18096A	Maintain, repair/replace and adjust refrigerant flow controls and associated equipment	6
MEM18097A	Manufacture cavity dies	8
MEM18098A	Prepare to perform work associated with fuel system installation and servicing*	2

MEM30219 - Certificate III in Engineering - Mechanical Trade (Release 1)

Packaging Rules

To be awarded the MEM30219 Certificate III in Engineering - Mechanical Trade, units of competency to the value of 96 points must be achieved, chosen as outlined below:

- core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Groups A, B and C electives as described below
- elective units of competency to a maximum value of 23 points from Group D to bring the total value to 96 points.

To be awarded the MEM30219 Certificate III in Engineering - Mechanical Trade (Machining), units of competency to the value of 96 points must be achieved, chosen as outlined below:

- core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Group A electives as described below
- elective units of competency to a maximum value of 23 points from Group D to bring the total value to 96 points.

To be awarded the MEM30219 Certificate III in Engineering - Mechanical Trade (Fitting), units of competency to the value of 96 points must be achieved, chosen as outlined below:

- core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Group B electives as described below
- elective units of competency to a maximum value of 23 points from Group D to bring the total value to 96 points.

To be awarded the MEM30219 Certificate III in Engineering - Mechanical Trade (Fitting/machining), units of competency to the value of 96 points must be achieved, chosen as outlined below:

- core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Group C electives as described below
- elective units of competency to a maximum value of 23 points from Group D to bring the total value to 96 points.

Appropriate Group D elective units to the value of 8 points may be chosen from this Training Package, other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate III. Only select units that would be suitable for occupational outcomes in a mechanical trade environment.

Registered Training Organisations (RTOs) must seek a determination from the industry parties in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses. Determination of points requests are to be submitted to the industry parties through Innovation and Business Skills Australia (IBSA) Manufacturing. Refer to the MEM Companion Volume Implementation Guide for information on determination of unit points values.

Prerequisites

Points associated with prerequisites count towards the total. Units with prerequisite requirements are marked with an asterisk (refer to the individual units for details). All prerequisites are included in the units listed.

Core units of competency

Unit code	Unit title	P	Prereq
MEM09002	Interpret technical drawing	4	*
MEM11011	Undertake manual handling	2	*
MEM12023	Perform engineering measurements	5	*
MEM12024	Perform computations	3	*
MEM13015	Work safely and effectively in manufacturing and engineering	2	
MEM14006	Plan work activities	4	*
MEM16006	Organise and communicate information	2	*
MEM16008	Interact with computing technology	2	*
MEM17003	Assist in the provision of on-the-job training	2	*
MEM18001	Use hand tools	2	*
MEM18002	Use power tools/hand held operations	2	*
MSMENV272	Participate in environmentally sustainable work practices	3	

Elective units of competency

- Packaging for a generic qualification – choose a minimum value of 40 points in **any combination** from Groups A, B and C
- Packaging for a trade specialisation – choose a minimum value of 40 points from **one of either** Group A or B or C

Group A – Machining Trade specialisation

Unit code	Unit title	P	Prereq
MEM05005	Carry out mechanical cutting	2	*
MEM07005	Perform general machining	8	*
MEM07006	Perform lathe operations	4	*
MEM07007	Perform milling operations	4	*
MEM07008	Perform grinding operations	4	*
MEM07009	Perform precision jig boring operations	4	*
MEM07010	Perform tool and cutter grinding operations	4	*
MEM07011	Perform complex milling operations	4	*

MEM07012	Perform complex grinding operations	4	*
MEM07013	Perform machining operations using horizontal and vertical boring machines	4	*
MEM07014	Perform electro-discharge machining (EDM) operations	4	*
MEM07015	Set computer controlled machines and processes	2	*
MEM12003	Perform precision mechanical measurement	2	*
MEM12006	Mark off/out (general engineering)	4	*
MEM18003	Use tools for precision work	4	*
MEM18055	Dismantle, replace and assemble engineering components	3	*

Group B - Fitting Trade specialisation

Unit code	Unit title	P	Prereq
MEM05005	Carry out mechanical cutting	2	*
MEM07005	Perform general machining	8	*
MEM07006	Perform lathe operations	4	*
MEM10006	Install machine/plant	4	*
MEM12006	Mark off/out (general engineering)	4	*
MEM18003	Use tools for precision work	4	*
MEM18004	Maintain and overhaul mechanical equipment	4	*
MEM18005	Perform fault diagnosis, installation and removal of bearings	4	*
MEM18006	Perform precision fitting of engineering components	6	*
MEM18007	Maintain and repair mechanical drives and mechanical transmission assemblies	4	*
MEM18008	Balance equipment	2	*
MEM18009	Perform precision levelling and alignment of machines and engineering components	4	*
MEM18012	Perform installation and removal of mechanical seals	2	*
MEM18013	Perform gland packing	2	*
MEM18018	Maintain pneumatic system components	4	*
MEM18020	Maintain hydraulic system components	4	*
MEM18055	Dismantle, replace and assemble engineering components	3	*

Group C – Fitting/Machining Trade specialisation

Unit code	Unit title	P	Prereq
MEM05005	Carry out mechanical cutting	2	*
MEM07005	Perform general machining	8	*
MEM07006	Perform lathe operations	4	*
MEM07007	Perform milling operations	4	*
MEM07008	Perform grinding operations	4	*
MEM07010	Perform tool and cutter grinding operations	4	*
MEM07013	Perform machining operations using horizontal and vertical boring machines	4	*
MEM07014	Perform electro-discharge machining (EDM) operations	4	*
MEM07015	Set computer controlled machines and processes	2	*

MEM10006	Install machine/plant	4	*
MEM12003	Perform precision mechanical measurement	2	*
MEM12006	Mark off/out (general engineering)	4	*
MEM18003	Use tools for precision work	4	*
MEM18005	Perform fault diagnosis, installation and removal of bearings	4	*
MEM18006	Perform precision fitting of engineering components	6	*
MEM18007	Maintain and repair mechanical drives and mechanical transmission assemblies	4	*
MEM18008	Balance equipment	2	*
MEM18009	Perform precision levelling and alignment of machines and engineering components	4	*
MEM18012	Perform installation and removal of mechanical seals	2	*
MEM18013	Perform gland packing	2	*
MEM18018	Maintain pneumatic system components	4	*
MEM18020	Maintain hydraulic system components	4	*
MEM18055	Dismantle, replace and assemble engineering components	3	*

Group D – General electives

Unit code	Unit title	P	Prereq
MEM05004	Perform routine oxy fuel gas welding	2	*
MEM05005	Carry out mechanical cutting	2	*
MEM05006	Perform brazing and/or silver soldering	2	*
MEM05007	Perform manual heating and thermal cutting	2	*
MEM05012	Perform routine manual metal arc welding	2	*
MEM05041	Weld using flame powder spraying	4	*
MEM05049	Perform routine gas tungsten arc welding	2	*
MEM05050	Perform routine gas metal arc welding	2	*
MEM06007	Perform basic incidental heat/quenching, tempering and annealing	2	*
MEM07002	Perform precision shaping/planing/slotting operations	4	*
MEM07005	Perform general machining	8	*
MEM07006	Perform lathe operations	4	*
MEM07007	Perform milling operations	4	*
MEM07008	Perform grinding operations	4	*
MEM07009	Perform precision jig boring operations	4	*
MEM07010	Perform tool and cutter grinding operations	4	*
MEM07011	Perform complex milling operations	4	*
MEM07012	Perform complex grinding operations	4	*
MEM07013	Perform machining operations using horizontal and vertical boring machines	4	*
MEM07014	Perform electro-discharge machining (EDM) operations	4	*
MEM07015	Set computer controlled machines and processes	2	*
MEM07016	Set and edit computer controlled machines and processes	4	*
MEM07021	Perform complex lathe operations	4	*
MEM07030	Perform basic metal spinning lathe operations	8	*

MEM07031	Perform complex metal spinning lathe operations	4	*
MEM07032	Use workshop machines for basic operations	2	*
MEM07040	Set multistage integrated processes	6	*
MEM08010	Manually finish/polish materials	6	*
MEM08011	Prepare surfaces using solvents and/or mechanical means	2	*
MEM08014	Apply protective coatings (basic)	4	*
MEM09003	Prepare basic engineering drawing	8	*
MEM09011	Apply basic engineering design concepts	6	*
MEM10002	Terminate and connect electrical wiring	3	*
MEM10004	Enter and change programmable controller operational parameters	2	*
MEM10005	Commission programmable controller programs	4	*
MEM10006	Install machine/plant	4	*
MEM10010	Install pipework and pipework assemblies	4	*
MEM11010	Operate mobile load shifting equipment	4	*
MEM11016	Order materials	2	*
MEM11022	Operate fixed/moveable load shifting equipment	4	*
MEM12002	Perform electrical/electronic measurement	2	*
MEM12003	Perform precision mechanical measurement	2	*
MEM12006	Mark off/out (general engineering)	4	*
MEM12019	Measure components using coordinate measuring machines	4	*
MEM12020	Set and operate coordinate measuring machines	2	*
MEM13001	Perform emergency first aid	1	*
MEM13002	Undertake work health and safety activities in the workplace	3	*
MEM13003	Work safely with industrial chemicals and materials	2	*
MEM15001	Perform basic statistical quality control	2	*
MEM15003	Use improvement processes in team activities	4	*
MEM15004	Perform inspection	2	*
MEM16005	Operate as a team member to conduct manufacturing, engineering or related activities	2	*
MEM18003	Use tools for precision work	4	*
MEM18004	Maintain and overhaul mechanical equipment	4	*
MEM18005	Perform fault diagnosis, installation and removal of bearings	4	*
MEM18006	Perform precision fitting of engineering components	6	*
MEM18007	Maintain and repair mechanical drives and mechanical transmission assemblies	4	*
MEM18008	Balance equipment	2	*
MEM18009	Perform precision levelling and alignment of machines and engineering components	4	*
MEM18010	Perform equipment condition monitoring and recording	4	*
MEM18011	Shut down and isolate machines/equipment	2	*
MEM18012	Perform installation and removal of mechanical seals	2	*
MEM18013	Perform gland packing	2	*
MEM18018	Maintain pneumatic system components	4	*
MEM18020	Maintain hydraulic system components	4	*

MEM18049	Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.	3	*
MEM18055	Dismantle, replace and assemble engineering components	3	*
MEM24001B	Perform basic penetrant testing	2	*
MEM24003B	Perform basic magnetic particle testing	2	*
MEM24005B	Perform basic eddy current testing	2	*
MEM24007B	Perform ultrasonic thickness testing	2	*
MSMENV472	Implement and monitor environmentally sustainable work practices	4	
TLILIC0003	Licence to operate a forklift truck	0	
TLILIC0002	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	1	

MEM30919 - Certificate III in Boating Services (Release 1)

Packaging Rules

To be awarded the MEM30919 Certificate III in Boating Services a total of nineteen (19) units of competency units of competency must be achieved, chosen as outlined below:

- six (6) core units of competency listed below
- a minimum of thirteen (13) elective units of competency from Group A.

Up to four (4) appropriate elective units may be chosen from this Training Package, other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate III. Only select units that would be suitable for occupational outcomes in a boating services environment.

Prerequisites

Units with prerequisite requirements are marked with an asterisk (refer to the individual units for details). All prerequisites are included in the units listed.

Core units of competency

Unit code	Unit title	Prereq
MEM13015	Work safely and effectively in manufacturing and engineering	
MEM16006	Organise and communicate information	*
MEM50001	Classify recreational boating technologies and features	*
MEM50002	Work safely on marine craft	*
MEM50003	Follow work procedures to maintain the marine environment	*
MSMENV272	Participate in environmentally sustainable work practices	

Elective units of competency

Group A

Unit code	Unit title	Prereq
MEM04018	Perform general woodworking machine operations	*
MEM05003	Perform soft soldering	*
MEM05005	Carry out mechanical cutting	*
MEM05007	Perform manual heating and thermal cutting	*
MEM05012	Perform routine manual metal arc welding	*
MEM05050	Perform routine gas metal arc welding	*
MEM09002	Interpret technical drawing	*
MEM11010	Operate mobile load shifting equipment	*
MEM11011	Undertake manual handling	*
MEM12006	Mark off/out (general engineering)	*
MEM12007	Mark off/out structural fabrications and shapes	*

MEM12023	Perform engineering measurements	*
MEM12024	Perform computations	*
MEM13003	Work safely with industrial chemicals and materials	*
MEM14006	Plan work activities	*
MEM18001	Use hand tools	*
MEM18002	Use power tools/hand held operations	*
MEM25001	Apply fibre-reinforced materials	*
MEM25004	Fair and shape surfaces	*
MEM25007	Maintain marine vessel surfaces	*
MEM50004	Maintain quality of environment by following marina codes	*
MEM50005	Refuel vessels	*
MEM50006	Check operational capability of marine craft	*
MEM50007	Check operational capability of sails and sail operating equipment	*
MEM50008	Carry out trip preparation and planning	*
MEM50009	Safely operate a mechanically powered recreational boat	*
MEM50010	Respond to boating emergencies and incidents	*
TLILIC0002	Licence to operate a vehicle loading crane (capacity 10 metre tones and above)	
TLILIC0003	Licence to operate a forklift truck	

MEM30719 - Certificate III in Marine Craft Construction (Release 1)

Packaging Rules

To be awarded the MEM30719 Certificate III in Marine Craft Construction units of competency to a value of 96 points must be achieved, chosen as outlined below:

- core units of competency listed below (totalling 33 points)
- elective units of competency to a minimum value of 40 points from Group A
- elective units of competency to a maximum value of 23 points from Group B electives to bring the total value to 96 points.

Appropriate Group B elective units to the value of 8 points may be chosen from this Training Package, other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate III. Only select units that would be suitable for occupational outcomes in a marine craft construction trade environment.

Registered Training Organisations (RTOs) must seek a determination from the industry parties in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses. Determination of points requests are to be submitted to the industry parties through Innovation and Business Skills Australia (IBSA) Manufacturing. Refer to the MEM Companion Volume Implementation Guide for information on determination of unit points values.

Prerequisites

Points associated with prerequisites count towards the total. Units with prerequisite requirements are marked with an asterisk (refer to the individual units for details). All prerequisites are included in the units listed.

Core units of competency

Unit code	Unit title	P	Prereq
MEM09002	Interpret technical drawing	4	*
MEM11011	Undertake manual handling	2	*
MEM12023	Perform engineering measurements	5	*
MEM12024	Perform computations	3	*
MEM13015	Work safely and effectively in manufacturing and engineering	2	
MEM14006	Plan work activities	4	*
MEM16006	Organise and communicate information	2	*
MEM16008	Interact with computing technology	2	*
MEM17003	Assist in the provision of on-the-job training	2	*
MEM18001	Use hand tools	2	*
MEM18002	Use power tools/hand held operations	2	*
MSMENV272	Participate in environmentally sustainable work practices	3	

Elective units of competency

Group A

Unit code	Unit title	P	Prereq
MEM04018	Perform general woodworking machine operations	4	*
MEM07001	Perform operational maintenance of machines/equipment	2	*
MEM07024	Operate and monitor machine and process	4	*
MEM08002	Pre-treat work for subsequent surface coating	4	*
MEM08011	Prepare surfaces using solvents and/or mechanical means	2	*
MEM08014	Apply protective coatings (basic)	4	*
MEM09021	Interpret and produce drawings of curved 3-D shapes	4	*
MEM12007	Mark off/out structural fabrications and shapes	4	*
MEM13003	Work safely with industrial chemicals and materials	2	*
MEM13004	Work safely with molten metals/glass	2	*
MEM25001	Apply fibre-reinforced materials	2	*
MEM25002	Form and integrate fibre-reinforced structures	4	*
MEM25003	Set up marine vessel structures	4	*
MEM25004	Fair and shape surfaces	2	*
MEM25005	Construct and assemble marine vessel timber components	8	*
MEM25006	Undertake marine sheathing operations	2	*
MEM25007	Maintain marine vessel surfaces	4	*
MEM25008	Repair marine vessel surfaces and structures	4	*
MEM25009	Form timber shapes using hot processes	2	*
MEM25010	Perform fitout procedures	4	*
MEM25011	Install marine systems	8	*
MEM25012	Install and test operations of marine auxiliary systems	6	*
MEM25013	Produce three-dimensional plugs/moulds	12	*
MEM25014	Perform marine slipping operations	2	*
MEM25015	Assemble and install equipment and accessories/ancillaries	2	*
MEM50002	Work safely on marine craft	1	*
MEM50003	Follow work procedures to maintain the marine environment	1	*
MEM50004	Maintain quality of environment by following marina codes	1	*
MEM50009	Safely operate a mechanically powered recreational boat	2	*

Group B

Unit code	Unit title	P	Prereq
MEM03002	Perform precision assembly	4	*
MEM05005	Carry out mechanical cutting	2	*
MEM05006	Perform brazing and/or silver soldering	2	*
MEM05007	Perform manual heating and thermal cutting	2	*
MEM05009	Perform automated thermal cutting	2	*
MEM05012	Perform routine manual metal arc welding	2	*
MEM05049	Perform routine gas tungsten arc welding	2	*
MEM05050	Perform routine gas metal arc welding	2	*

MEM08004	Finish work using wet, dry and vapour deposition methods	4	*
MEM09003	Prepare basic engineering drawing	8	*
MEM09009	Create 2-D drawings using computer-aided design system	8	*
MEM10006	Install machine/plant	4	*
MEM11001	Erect/dismantle scaffolding and equipment	4	*
MEM11010	Operate mobile load shifting equipment	4	*
MEM11022	Operate fixed/moveable load shifting equipment	4	*
MEM12001	Use comparison and basic measuring devices	2	*
MEM13001	Perform emergency first aid	1	*
MEM13002	Undertake work health and safety activities in the workplace	3	*
MEM15004	Perform inspection	2	*
MEM16004	Perform internal/external customer service	2	*
MEM16005	Operate as a team member to conduct manufacturing, engineering or related activities	2	*
MEM18003	Use tools for precision work	4	*
MEM18006	Perform precision fitting of engineering components	6	*
MEM18009	Perform precision levelling and alignment of machines and engineering components	4	*
MEM18055	Dismantle, replace and assemble engineering components	3	*
MEM26001	Lay up composites using open moulding techniques	6	*
MEM26006	Mark and cut out sheets for composite use	4	*
MEM26007	Select and use reinforcing appropriate for product	4	*
MEM26008	Select and use resin systems appropriate for product	4	*
MEM26009	Select and use cores and fillers appropriate for product	2	*
MEM26010	Store and handle composite materials	2	*

MEM40105 - Certificate IV in Engineering (Release 4)

Packaging Rules

The minimum requirements for achievement of the Certificate IV in Engineering are:

- completion of all core units of competency listed below, and
- completion of units from the Group A Specialisation electives listed below to the value of at least 12 points, and
- completion of Group B electives listed below to bring the total value to at least 109 points.

Points associated with prerequisites count towards the total (refer to units and prerequisites listing in Appendix 2, Volume 1).

Appropriate Group B elective units to the value of 22 points may be chosen from other endorsed Training Packages and accredited courses where those units are available for inclusion at Certificate IV. Note that the elective units listed below include all of the units that are approved for selection from the MEM Training Package for use in this qualification. This meets the NQC requirement that one sixth of the total units must be able to be selected from other qualifications in the same Training Package.

Registered Training Organisations must seek a determination from Manufacturing Skills Australia in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses.

Additional qualification descriptors

The following additional descriptors are approved for use with this qualification:

Refrigeration and Air Conditioning; Casting and Moulding; CNC programming; Fluid Power; Heavy Fabrication; Instrumentation; Maintenance; Marine Electronics; Mechatronics; Patternmaking; Robotics; Toolmaking; Welding, Watch and Clock Service and Repair.

Core Units

- select all of the units from this list

Unit code	Unit title
MEM12023A	Perform engineering measurements
MEM12024A	Perform computations
MEM13014A	Apply principles of occupational health and safety in the work environment
MEM14004A	Plan to undertake a routine task
MEM14005A	Plan a complete activity
MEM15024A	Apply quality procedures
MEM15002A	Apply quality systems
MEM16006A	Organise and communicate information
MEM16007A	Work with others in a manufacturing, engineering or related environment

MEM16008A	Interact with computing technology
MEM17003A	Assist in the provision of on the job training
MSAENV272B	Participate in environmentally sustainable work practices

Electives

Group A – Specialisation units

- select units from this list to a value of at least 12 points and up to a maximum of 109 points

Unit code	Unit title	P
MEM04020A	Supervise individual ferrous melting and casting operation	4
MEM04021A	Supervise individual non ferrous melting and casting operation	4
MEM04022A	Examine appropriateness of methoding for mould design	4
MEM04023A	Undertake prescribed tests on foundry related materials	4
MEM05024B	Perform welding supervision	12
MEM05025C	Perform welding/fabrication inspection	12
MEM05026C	Apply welding principles	4
MEM05042B	Perform welds to code standards using flux core arc welding process	6
MEM05043B	Perform welds to code standards using gas metal arc welding process	6
MEM05044B	Perform welds to code standards using gas tungsten arc welding process	6
MEM05045B	Perform pipe welds to code standards using manual metal arc welding process	6
MEM05046B	Perform welds to code standards using manual metal arc welding process	6
MEM05053A	Set and edit computer controlled thermal cutting machines	4
MEM05054A	Write basic NC/CNC programs for thermal cutting machines	4
MEM07016C	Set and edit computer controlled machines/processes	4
MEM07018C	Write basic NC/CNC programs	4
MEM07019C	Program NC/CNC machining centre	2
MEM07020C	Program multiple spindle and/or multiple axis NC/CNC machining centre	2

MEM07022C	Program CNC wire cut machines	2
MEM07023C	Program and set up CNC manufacturing cell	6
MEM07039A	Write programs for industrial robots	4
MEM09004B	Perform electrical/electronic detail drafting	8
MEM09006B	Perform advanced engineering detail drafting	4
MEM09007B	Perform advanced mechanical detail drafting	4
MEM09008B	Perform advanced structural detail drafting	4
MEM09009C	Create 2D drawings using computer aided design system	8
MEM09010C	Create 3D models using computer aided design system	4
MEM09023A	Create 3D code files using computer aided manufacturing system	6
MEM10007C	Modify control systems	6
MEM10008B	Undertake commissioning procedures for plant and/or equipment	4
MEM12003B	Perform precision mechanical measurement	2
MEM12004B	Perform precision electrical/electronic measurement	4
MEM12005B	Calibrate measuring equipment	6
MEM12025A	Use graphical techniques and perform simple statistical computations	2
MEM14001B	Schedule material deliveries	8
MEM14002B	Undertake basic process planning	8
MEM14003B	Undertake basic production scheduling	8
MEM15007B	Conduct product and/or process capability studies	6
MEM15008B	Perform advanced statistical quality control	2
MEM15010B	Perform laboratory procedures	8
MEM15011B	Exercise external quality assurance	6
MEM15012B	Maintain/supervise application of quality procedures	4
MEM15015B	Examine trading practices	5
MEM15016B	Inspect pre-packed articles	8
MEM15017B	Use and maintain reference standards	3

MEM15018B	Investigate consumer complaints	6
MEM15019B	Conduct a field inspection	12
MEM15020C	Perform verification/certification or in-service inspection	12
MEM15021C	Conduct audits of servicing licensees and public weighbridge licensees	4
MEM15022B	Verify reference standards	8
MEM16001B	Give formal presentations and take part in meetings	2
MEM16003B	Provide advanced customer service	2
MEM16009A	Research and analyse engineering information	2
MEM16010A	Write reports	2
MEM16011A	Communicate with individuals and small groups	2
MEM16012A	Interpret technical specifications and manuals	4
MEM16013A	Operate in a self-directed team	2
MEM16014A	Report technical information	2
MEM17001B	Assist in development and deliver training in the workplace	2
MEM17002B	Conduct workplace assessment	2
MEM18010C	Perform equipment condition monitoring and recording	4
MEM18011C	Shut down and isolate machines/equipment	2
MEM18016B	Analyse plant and equipment condition monitoring results	4
MEM18017C	Modify mechanical systems and equipment	8
MEM18019B	Maintain pneumatic systems	4
MEM18021B	Maintain hydraulic systems	4
MEM18022B	Maintain fluid power controls	8
MEM18023B	Modify fluid power system operation	8
MEM18049C	Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.	3
MEM18050C	Disconnect/reconnect fixed wired equipment over 1000 volts a.c./1500 volts d.c.	3
MEM18051B	Fault find and repair/rectify complex electrical circuits	6
MEM18053B	Modify fluid power control systems	6
MEM18054B	Fault find, test and calibrate instrumentation systems and equipment	8

MEM18056B	Diagnose and repair analog equipment and components	10
MEM18058C	Modify electronic equipment	4
MEM18059B	Modify electronic systems	4
MEM18060B	Maintain, repair control instrumentation - single and multiple loop control systems	8
MEM18061B	Maintain/calibrate complex control systems	8
MEM18062B	Install, maintain and calibrate instrumentation sensors, transmitters and final control elements	8
MEM18065B	Diagnose and repair digital equipment and components	10
MEM18066B	Diagnose and repair microprocessor-based equipment	6
MEM18067B	Tune control loops - multi controller or multi element systems	6
MEM18069B	Maintain, repair instrumentation process control analysers	6
MEM18070C	Modify complex electrical circuits and systems	6
MEM18073A	Perform advanced equipment testing and diagnostics on mobile plant and equipment	8
MEM18091B	Maintain and repair multi stage, cascade and/or ultra-cold industrial refrigeration systems	4
MEM18092B	Maintain and repair commercial and/or industrial refrigeration and/or air conditioning controls	6
MEM18093B	Maintain and repair integrated industrial refrigeration and/or large air handling system controls	8
MEM18098A	Prepare to perform work associated with fuel system installation and servicing*	2
MEM19008B	Prepare jewellery designs	6
MEM19013B	Produce jewellery metal masters	4
MEM19018B	Repair jewellery items	6
MEM19022B	Perform precision micro-mechanism diagnosis and servicing	6
MEM20008A	Develop and implement a masterkey system	6
MEM20011A	Service and repair fire and security containers	6

MEM20012A	Service and repair mechanical automotive locking systems	4
MEM20013A	Service automotive transponder systems	2
MEM21018A	Service clock escapements and oscillating systems	4
MEM21019A	Service and repair clock striking mechanisms	4
MEM21020A	Service and repair clock chiming mechanisms	6
MEM21021A	Restore clockwork mechanisms	6
MEM21022A	Manufacture watch and clock components	6
MEM21023A	Plan, set up and operate horological workshop or service centre	4
MEM24002B	Perform penetrant testing	4
MEM24004B	Perform magnetic particle testing	4
MEM24006B	Perform eddy current testing	6
MEM24008B	Perform ultrasonic testing	6
MEM24010B	Perform radiographic testing	6
MEM24011B	Establish non-destructive tests	12
MEM24012C	Apply metallurgy principles	4
MEM25008B	Repair marine vessel surfaces and structures	4
MEM25013B	Produce three-dimensional plugs/moulds	12
MEM30012A	Apply mathematical techniques in a manufacturing, engineering or related environment	4
MEM30025A	Analyse a simple electrical system circuit	4
MSATCM304A	Interpret binary phase diagrams	4

Group B – elective units

- select units from this group to bring the total value of Group A and B units to 109 points, including any prerequisites.

Unit code	Unit title	P
AURVTN2002	Carry out panel repairs	4
BSBOHS502A	Participate in the management of the OHS information and data systems	2
BSBOHS601A	Develop a systematic approach to managing OHS	4

BSBOHS602A	Develop OHS information and data analysis and reporting and recording processes	2
BSBOHS603A	Analyse and evaluate OHS risk	4
ICTTC136B	Install, maintain and modify customer premises communications cabling: ACA Restricted Rule	6
ICTTC137B	Install, maintain and modify customer premises communications cabling: ACA Open Rule	6
MEA405A	Repair/modify aircraft composite material structure/components	4
MEM03001B	Perform manual production assembly	4
MEM03002B	Perform precision assembly	4
MEM03003B	Perform sheet and plate assembly	4
MEM03004B	Perform electronic/electrical assembly (production)	8
MEM03005B	Rework and repair (electrical/electronic production)	8
MEM03006B	Set assembly stations	2
MEM04001B	Operate melting furnaces	4
MEM04002B	Perform gravity die casting	2
MEM04003B	Operate pressure die casting machine	4
MEM04004B	Prepare and mix sand for metal moulding	4
MEM04005C	Produce moulds and cores by hand (jobbing)	16
MEM04006B	Operate sand moulding and core making machines	8
MEM04007B	Pour molten metal	4
MEM04008B	Fettle and trim metal castings/forgings	4
MEM04010B	Develop and manufacture wood patterns	20
MEM04011B	Produce polymer patterns	8
MEM04012B	Assemble plated patterns	8
MEM04013B	Develop and manufacture polystyrene patterns	2
MEM04014B	Develop and manufacture production patterns	8
MEM04015B	Develop and manufacture vacuum forming moulds and associated equipment	6
MEM04016C	Develop and manufacture precision models	6

MEM04017B	Develop and manufacture gear, conveyor screw and propeller patterns	4
MEM04018B	Perform general woodworking machine operations	4
MEM04019B	Perform refractory installation and repair	4
MEM05001B	Perform manual soldering/desoldering - electrical/electronic components	4
MEM05002B	Perform high reliability soldering and desoldering	4
MEM05003B	Perform soft soldering	2
MEM05004C	Perform routine oxy acetylene welding	2
MEM05005B	Carry out mechanical cutting	2
MEM05006C	Perform brazing and/or silver soldering	2
MEM05007C	Perform manual heating and thermal cutting	2
MEM05008C	Perform advanced manual thermal cutting, gouging and shaping	2
MEM05009C	Perform automated thermal cutting	2
MEM05010C	Apply fabrication, forming and shaping techniques	8
MEM05011D	Assemble fabricated components	8
MEM05012C	Perform routine manual metal arc welding	2
MEM05013C	Perform manual production welding	2
MEM05014C	Monitor quality of production welding/fabrications	2
MEM05015D	Weld using manual metal arc welding process	4
MEM05016C	Perform advanced welding using manual metal arc welding process	4
MEM05017D	Weld using gas metal arc welding process	4
MEM05018C	Perform advanced welding using gas metal arc welding process	4
MEM05019D	Weld using gas tungsten arc welding process	4
MEM05020C	Perform advanced welding using gas tungsten arc welding process	4
MEM05022C	Perform advanced welding using oxy acetylene welding process	6

MEM05023C	Weld using submerged arc welding process	4
MEM05036C	Repair/replace/modify fabrications	4
MEM05037C	Perform geometric development	6
MEM05038B	Perform advanced geometric development - cylindrical/rectangular	2
MEM05039B	Perform advanced geometric development - conical	2
MEM05040B	Perform advanced geometric development - transitions	4
MEM05041B	Weld using powder flame spraying	4
MEM05047B	Weld using flux core arc welding process	4
MEM05048B	Perform advanced welding using flux core arc welding process	4
MEM05049B	Perform routine gas tungsten arc welding	2
MEM05050B	Perform routine gas metal arc welding	2
MEM05051A	Select welding processes	2
MEM05052A	Apply safe welding practices	4
MEM06001B	Perform hand forging	4
MEM06002B	Perform hammer forging	4
MEM06003C	Carry out heat treatment	6
MEM06004B	Select heat treatment processes and test finished product	6
MEM06005B	Perform drop and upset forging	4
MEM06006C	Repair springs	4
MEM06007B	Perform basic incidental heat/quenching, tempering and annealing	2
MEM06008A	Hammer forge complex shapes	4
MEM06009A	Hand forge complex shapes	4
MEM07001B	Perform operational maintenance of machines/equipment	2
MEM07002B	Perform precision shaping/planing/slotting operations	4
MEM07003B	Perform machine setting (routine)	4
MEM07004B	Perform machine setting (complex)	8
MEM07005C	Perform general machining	8
MEM07006C	Perform lathe operations	4
MEM07007C	Perform milling operations	4
MEM07008D	Perform grinding operations	4
MEM07009B	Perform precision jig boring operations	4

MEM07010B	Perform tool and cutter grinding operations	4
MEM07011B	Perform complex milling operations	4
MEM07012B	Perform complex grinding operations	4
MEM07013B	Perform machining operations using horizontal and/or vertical boring machines	4
MEM07014B	Perform electro-discharge (EDM) machining operations	4
MEM07015B	Set computer controlled machines/processes	2
MEM07021B	Perform complex lathe operations	4
MEM07024B	Operate and monitor machine/process	4
MEM07025B	Perform advanced machine/process operation	
MEM07026B	Perform advanced plastic processing	6
MEM07027B	Perform advanced press operations	6
MEM07028B	Operate computer controlled machines/processes	2
MEM07029B	Perform routine sharpening/maintenance of production tools and cutters	4
MEM07030C	Perform metal spinning lathe operations (basic)	8
MEM07031C	Perform metal spinning lathe operations (complex)	4
MEM07032B	Use workshop machines for basic operations	2
MEM07033B	Operate and monitor basic boiler	6
MEM07034A	Operate and monitor intermediate class boiler	4
MEM07040A	Set multistage integrated processes	6
MEM08001B	Perform wire, jig and barrel load/unload work	4
MEM08002C	Pre-treat work for subsequent surface coating	4
MEM08003C	Perform electroplating operations	6
MEM08004B	Finish work using wet, dry and vapour deposition methods	4
MEM08005B	Prepare and produce specialised coatings	4
MEM08006B	Produce clear and/or coloured and/or sealed anodised films on aluminium	2
MEM08007B	Control surface finish production and finished product quality	4

MEM08008B	Operate and control surface finishing waste treatment process	3
MEM08009C	Make up solutions	2
MEM08010B	Manually finish/polish materials	6
MEM08011B	Prepare surfaces using solvents and/or mechanical means	2
MEM08012B	Prepare surfaces by abrasive blasting (basic)	4
MEM08013B	Prepare surfaces by abrasive blasting (advanced)	4
MEM08014B	Apply protective coatings (basic)	4
MEM08015B	Apply protective coatings (advanced)	4
MEM08016B	Control blast coating by-products, materials and emissions	1
MEM08018B	Electroplate engineering coatings	6
MEM08019B	Electroplate protective finishes	6
MEM08020B	Electroplate decorative finishes	6
MEM09002B	Interpret technical drawing	4
MEM09003B	Prepare basic engineering drawing	8
MEM09005B	Perform basic engineering detail drafting	8
MEM09011B	Apply basic engineering design concepts	6
MEM09021B	Interpret and produce curved 3-dimensional shapes	4
MEM09022A	Create 2D code files using computer aided manufacturing system	4
MEM10001C	Erect structures	4
MEM10002B	Terminate and connect electrical wiring	3
MEM10003B	Install and test electrical wiring and circuits up to 1000 volts a.c. and 1500 volts d.c.	12
MEM10004B	Enter and change programmable controller operational parameters	2
MEM10005B	Commission programmable controller programs	4
MEM10006B	Install machine/plant	4
MEM10009B	Install refrigeration and air conditioning plant and equipment	4
MEM10010B	Install pipework and pipework assemblies	4
MEM10011B	Terminate and connect specialist cables	3
MEM10013A	Install split air conditioning systems and associated pipework	6

MEM11001C	Erect/dismantle scaffolding and equipment	4
MEM11002C	Erect/dismantle complex scaffolding and equipment	4
MEM11003B	Coordinate erection/dismantling of complex scaffolding/equipment	4
MEM11004B	Undertake dogging	4
MEM11005B	Pick and process order	4
MEM11006B	Perform production packaging	2
MEM11007B	Administer inventory procedures	4
MEM11008B	Package materials (stores and warehouse)	2
MEM11009B	Handle/move bulk fluids/gases	4
MEM11010B	Operate mobile load shifting equipment	4
MEM11011B	Undertake manual handling	2
MEM11012B	Purchase materials	6
MEM11013B	Undertake warehouse receival process	4
MEM11014B	Undertake warehouse dispatch process	4
MEM11015B	Manage warehouse inventory system	6
MEM11016B	Order materials	2
MEM11017B	Organise and lead stocktakes	4
MEM11018B	Organise and maintain warehouse stock receival and/or dispatch system	6
MEM11019B	Undertake tool store procedures	4
MEM11020B	Perform advanced warehouse computer operations	4
MEM11021B	Perform advanced operation of load shifting equipment	2
MEM11022B	Operate fixed/moveable load shifting equipment	4
MEM12001B	Use comparison and basic measuring devices	2
MEM12002B	Perform electrical/electronic measurement	2
MEM12006C	Mark off/out (general engineering)	4
MEM12007D	Mark off/out structural fabrications and shapes	4
MEM12019B	Measure components using coordinate measuring machine	4
MEM12020B	Set and operate coordinate measuring machine	2
MEM12021B	Program coordinate measuring machine	4

MEM12022B	Program coordinate measuring machine (advanced)	2
MEM13001B	Perform emergency first aid	1
MEM13002B	Undertake occupational health and safety activities in the workplace	3
MEM13003B	Work safely with industrial chemicals and materials	2
MEM13004B	Work safely with molten metals/glass	2
MEM13006B	Collect and evaluate occupational health and safety data for an enterprise or section of an enterprise	4
MEM13007B	Maintain water treatment systems for cooling towers	2
MEM13010A	Supervise occupational health and safety in an industrial work environment.	4
MEM13013B	Work safely with ionizing radiation	4
MEM15001B	Perform basic statistical quality control	2
MEM15003B	Use improvement processes in team activities	4
MEM15004B	Perform inspection	2
MEM15005B	Select and control inspection processes and procedures	4
MEM16002C	Conduct formal interviews and negotiations	4
MEM16004B	Perform internal/external customer service	2
MEM16005A	Operate as a team member to conduct manufacturing, engineering or related activities	2
MEM18001C	Use hand tools	2
MEM18002B	Use power tools/hand held operations	2
MEM18003C	Use tools for precision work	4
MEM18004B	Maintain and overhaul mechanical equipment	4
MEM18005B	Perform fault diagnosis, installation and removal of bearings	4
MEM18006C	Repair and fit engineering components	6
MEM18007B	Maintain and repair mechanical drives and mechanical transmission assemblies	4
MEM18008B	Balance equipment	2

MEM18009B	Perform levelling and alignment of machines and engineering components	4
MEM18012B	Perform installation and removal of mechanical seals	2
MEM18013B	Perform gland packing	2
MEM18014B	Manufacture press tools and gauges	8
MEM18015B	Maintain tools and dies	4
MEM18018C	Maintain pneumatic system components	4
MEM18020B	Maintain hydraulic system components	4
MEM18024B	Maintain engine cooling systems	2
MEM18025B	Service combustion engines	2
MEM18026C	Test compression ignition fuel systems	4
MEM18027C	Overhaul engine fuel system components	8
MEM18028B	Maintain engine lubrication systems	2
MEM18029B	Tune diesel engines	4
MEM18030B	Diagnose and rectify low voltage electrical systems	8
MEM18031B	Diagnose and rectify low voltage starting systems	2
MEM18032B	Maintain induction/exhaust systems	4
MEM18033B	Perform engine bottom-end overhaul	4
MEM18034B	Perform engine top-end overhaul	8
MEM18035B	Diagnose and rectify braking systems	6
MEM18037B	Diagnose and rectify low voltage charging systems	2
MEM18038B	Maintain wheels and tyres	2
MEM18039B	Diagnose and rectify track type undercarriage	4
MEM18040B	Maintain suspension systems	4
MEM18041B	Maintain steering systems	4
MEM18042C	Diagnose and rectify manual transmissions	4
MEM18043C	Diagnose and rectify automatic transmissions	8
MEM18044C	Diagnose and rectify drive line and final drives	4
MEM18045B	Fault find/repair electrical equipment/components up to 250 volts single phase supply	4

MEM18046B	Fault find/repair electrical equipment/components up to 1000 volts a.c./1500 volts d.c.	10
MEM18047B	Diagnose and maintain electronic controlling systems on mobile plant	4
MEM18048B	Fault find and repair/rectify basic electrical circuits	12
MEM18052B	Maintain fluid power systems for mobile plant	4
MEM18055B	Dismantle, replace and assemble engineering components	3
MEM18057B	Maintain/service analog/digital electronic equipment	6
MEM18063B	Terminate signal and data cables	4
MEM18064B	Maintain instrumentation system components	6
MEM18071B	Connect/disconnect fluid conveying system components	2
MEM18072B	Manufacture fluid conveying conductor assemblies	4
MEM18084A	Commission and decommission split air conditioning systems	4
MEM18085A	Install, service and repair domestic air conditioning and refrigeration appliances	6
MEM18086B	Test, recover, evacuate and charge refrigeration systems	4
MEM18087B	Service and repair domestic and light commercial refrigeration and air conditioning equipment	6
MEM18088B	Maintain and repair commercial air conditioning systems and components	4
MEM18089B	Maintain and repair central air handling systems	6
MEM18090B	Maintain and repair industrial refrigeration systems and components	6
MEM18094B	Service and repair commercial refrigeration	6
MEM18095A	Maintain and repair cooling towers/evaporative condensers and associated equipment	4
MEM18096A	Maintain, repair/replace and adjust refrigerant flow controls and associated equipment	6

MEM18097A	Manufacture cavity dies	8
MEM19001B	Perform jewellery metal casting	6
MEM19002B	Prepare jewellery illustrations	4
MEM19003B	Handle gem materials	2
MEM19004B	Handle and examine gemstone materials	6
MEM19005B	Produce three-dimensional precision items	8
MEM19006B	Replace watch batteries	1
MEM19007B	Perform gemstone setting	6
MEM19009B	Perform investment procedures for lost wax casting process	1
MEM19010B	Produce rubber moulds for lost wax casting process	2
MEM19011B	Perform wax injection of moulds for lost wax casting process	2
MEM19012B	Produce jewellery wax model	4
MEM19014B	Perform hand engraving	4
MEM19015B	Perform jewellery enamelling	4
MEM19016B	Construct jewellery components	4
MEM19017B	Fabricate jewellery items	6
MEM19020B	Fault-find and maintain micro-mechanisms	4
MEM19021B	Diagnose and service micro-mechanisms	6
MEM20001A	Produce keys	4
MEM20002A	Assemble and test lock mechanisms	6
MEM20003A	Install and upgrade locks and hardware	4
MEM20004A	Gain entry	4
MEM20005A	Install and maintain door control devices/systems	2
MEM20006A	Maintain and service mechanical locking devices	6
MEM20007A	Plan and prepare a masterkey system	4
MEM20009A	Gain entry and reinstate fire and security containers	4
MEM20010A	Gain entry and reinstate automotive locking systems	4
MEM20014A	Perform a site security survey	2
MEM21001A	Replace watch batteries, capacitors and bands	2
MEM21002A	Perform watch movement exchange *	2
MEM21003A	Perform watch case servicing, repair and refurbishment *	4
MEM21004A	Clean watch and clock components	2

MEM21005A	Diagnose faults in quartz watches *	2
MEM21006A	Service quartz watches *	4
MEM21007A	Service complex quartz watches	4
MEM21008A	Service mechanical watches	4
MEM21009A	Inspect, diagnose, adjust and repair mechanical watches	4
MEM21010A	Service watch power generating systems	2
MEM21011A	Service calendar and other dial indication mechanisms for watches	4
MEM21012A	Service and repair mechanical watch oscillating systems	4
MEM21013A	Service, test and adjust watch escapements	4
MEM21014A	Service mechanical chronograph watches	6
MEM21015A	Perform precision watch timing and adjustment	6
MEM21016A	Install and set up clocks	2
MEM21017A	Service and repair clock timepieces	6
MEM24001B	Perform basic penetrant testing	2
MEM24003B	Perform basic magnetic particle testing	2
MEM24005B	Perform basic eddy current testing	2
MEM24007B	Perform ultrasonic thickness testing	2
MEM24009B	Perform basic radiographic testing	2
MEM25001B	Apply fibre-reinforced materials	2
MEM25002B	Form and integrate fibre-reinforced structures	4
MEM25003B	Set up marine vessel structures	4
MEM25004B	Fair and shape surfaces	2
MEM25005B	Construct and assemble marine vessel timber components	8
MEM25006B	Undertake marine sheathing operations	2
MEM25007B	Maintain marine vessel surfaces	4
MEM25009B	Form timber shapes using hot processes	2
MEM25010B	Perform fitout procedures	4
MEM25011B	Install marine systems	8
MEM25012B	Install and test operations of marine auxiliary systems	6
MEM25014B	Perform marine slipping operations	2
MEM25015A	Assemble and install equipment and accessories/ancillaries	2
MEM50002B	Work safely on marine craft	1

MEM50003B	Follow work procedures to maintain the marine environment	1
MEM50004B	Maintain quality of environment by following marina codes	1
MEM50009B	Safely operate a mechanically powered recreational boat	2
MSAENV472B	Implement and monitor environmentally sustainable work practices	4
PMBPROD291B	Operate resin infusion moulding equipment	2
PMBPROD294B	Operate resin transfer moulding equipment	2
PMBPROD298B	Operate equipment using pre-pregs material	2
PMBPROD391B	Produce composites using resin infusion	4
PMBPROD394B	Produce composites using resin transfer moulding	4
PMBPROD398B	Produce composites using pre-pregs	4
PRSTS202A	Install security equipment/system	4
PRSTS302A	Program security equipment/system	2
PRSTS303A	Test installed security equipment/system	2
PRSTS304A	Commission/decommission security equipment/system	2
PRSTS305A	Identify and diagnose electronic security equipment/ system fault	2
PRSTS307A	Maintain and service security equipment/system	4
PRSTS317A	Provide estimate and quote	4
PRSTS319A	Modify and repair security equipment/system	4
TLILIC0012A	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	1
TLILIC2001A	Licence to operate a forklift truck	0

MEM50105 - Diploma of Engineering - Advanced Trade (Release 5)

Packaging Rules

The minimum requirements for achievement of the Diploma of Engineering - Advanced Trade are:

- completion of all of the Core units of competency listed below, and
- completion of Specialisation units from the Group A list below to a maximum value of 100 points, and
- completion of units up to the value of 12 points from the Group B list below and
- completion of units from the Group C list below to bring the total value of units from Groups A, B and C to at least 117 points.

Points associated with prerequisites count towards the total (refer to units and prerequisites listing in Appendix 2 in this Training Package).

Appropriate elective units to the value of 26 points may be chosen from other endorsed Training Packages and accredited courses where those units are available for inclusion at Diploma. Note that the elective units listed below include all of the units that are approved for selection from the MEM Training Package for use in this qualification. This meets the NQC requirement that one sixth of the total units must be able to be selected from other qualifications in the same Training Package.

Registered Training Organisations must seek a determination from Manufacturing Skills Australia in respect of the allocation of points values for units of competency drawn from other Training Packages or accredited courses.

Only select units that would be suitable for occupational outcomes in a manufacturing, engineering or related environment.

Additional qualification descriptors

The following additional descriptors are approved for use with this qualification: Refrigeration and Air-conditioning; Casting and Moulding; CNC programming; Fluid Power; Heavy Fabrication; Instrumentation; Maintenance; Marine Electronics; Mechatronics; Patternmaking; Robotics; Toolmaking; Welding, Watch and Clock Service and Repair.

Core units of competency

- select **all** of the units from this list.

Unit code	Unit title
MEM12023A	Perform engineering measurements
MEM12024A	Perform computations
MEM12025A	Use graphical techniques and perform simple statistical computations
MEM13014A	Apply principles of occupational health and safety in the work environment
MEM14004A	Plan to undertake a routine task

MEM14005A	Plan a complete activity	
MEM15002A	Apply quality systems	
MEM15024A	Apply quality procedures	
MEM16006A	Organise and communicate information	
MEM16007A	Work with others in a manufacturing, engineering or related environment	
MEM16008A	Interact with computing technology	
MEM16009A	Research and analyse engineering information	
MEM16011A	Communicate with individuals and small groups	
MEM16012A	Interpret technical specifications and manuals	
MEM16014A	Report technical information	
MEM17003A	Assist in the provision of on the job training	
MEM30012A	Apply mathematical techniques in a manufacturing, engineering or related	
MSAENV272B	Participate in environmentally sustainable work practices	

Elective units of competency

Group A - Specialisation units

- select units from this list to a maximum value of 100 points

Unit code	Unit title	P
MEM03001B	Perform manual production assembly	4
MEM03002B	Perform precision assembly	4
MEM03003B	Perform sheet and plate assembly	4
MEM03004B	Perform electronic/electrical assembly (production)	8
MEM03005B	Rework and repair (electrical/electronic production)	8
MEM03006B	Set assembly stations	2
MEM04001B	Operate melting furnaces	4
MEM04002B	Perform gravity die casting	2
MEM04003B	Operate pressure die casting machine	4
MEM04004B	Prepare and mix sand for metal moulding	4
MEM04005C	Produce moulds and cores by hand (jobbing)	16
MEM04006B	Operate sand moulding and core making machines	8
MEM04007B	Pour molten metal	4
MEM04008B	Fettle and trim metal castings/forgings	4
MEM04010B	Develop and manufacture wood patterns	20
MEM04011B	Produce polymer patterns	8
MEM04012B	Assemble plated patterns	8
MEM04013B	Develop and manufacture polystyrene patterns	2
MEM04014B	Develop and manufacture production patterns	8
MEM04015B	Develop and manufacture vacuum forming moulds and associated equipment	6
MEM04016C	Develop and manufacture precision models	6
MEM04017B	Develop and manufacture gear, conveyor screw and propeller patterns	4
MEM04018B	Perform general woodworking machine operations	4
MEM04019B	Perform refractory installation and repair	4

MEM05001B	Perform manual soldering/desoldering electrical/electronic components	4
MEM05002B	Perform high reliability soldering and desoldering	4
MEM05003B	Perform soft soldering	2
MEM05004C	Perform routine oxy acetylene welding	2
MEM05005B	Carry out mechanical cutting	2
MEM05006B	Perform brazing and/or silver soldering	2
MEM05007C	Perform manual heating and thermal cutting	2
MEM05008C	Perform advanced manual thermal cutting, gouging and shaping	2
MEM05009C	Perform automated thermal cutting	2
MEM05010C	Apply fabrication, forming and shaping techniques	8
MEM05011D	Assemble fabricated components	8
MEM05012C	Perform routine manual metal arc welding	2
MEM05013C	Perform manual production welding	2
MEM05014C	Monitor quality of production welding/fabrications	2
MEM05015D	Weld using manual metal arc welding process	4
MEM05016C	Perform advanced welding using manual metal arc welding process	4
MEM05017D	Weld using gas metal arc welding process	4
MEM05018C	Perform advanced welding using gas metal arc welding process	4
MEM05019D	Weld using gas tungsten arc welding process	4
MEM05020C	Perform advanced welding using gas tungsten arc welding process	4
MEM05022C	Perform advanced welding using oxy acetylene welding process	6
MEM05023C	Weld using submerged arc welding process	4
MEM05036C	Repair/replace/modify fabrications	4
MEM05037C	Perform geometric development	6
MEM05038B	Perform advanced geometric development cylindrical/rectangular	2
MEM05039B	Perform advanced geometric development conical	2
MEM05040B	Perform advanced geometric development transitions	4
MEM05041B	Weld using powder flame spraying	4
MEM05047B	Weld using flux core arc welding process	4
MEM05048B	Perform advanced welding using flux core arc welding process	4
MEM05049B	Perform routine gas tungsten arc welding	2
MEM05050B	Perform routine gas metal arc welding	2
MEM05051A	Select welding processes	2
MEM05052A	Apply safe welding practices	4
MEM06001B	Perform hand forging	4
MEM06002B	Perform hammer forging	4
MEM06003C	Carry out heat treatment	6
MEM06004B	Select heat treatment processes and test finished product	6
MEM06005B	Perform drop and upset forging	4
MEM06006C	Repair springs	4
MEM06007B	Perform basic incidental heat/quenching, tempering and annealing	2

MEM06008A	Hammer forge complex shapes	4
MEM06009A	Hand forge complex shapes	4
MEM07001B	Perform operational maintenance of machines/equipment	2
MEM07002B	Perform precision shaping/planing/slotting operations	4
MEM07003B	Perform machine setting (routine)	4
MEM07004B	Perform machine setting (complex)	8
MEM07005C	Perform general machining	8
MEM07006C	Perform lathe operations	4
MEM07007C	Perform milling operations	4
MEM07008D	Perform grinding operations	4
MEM07009B	Perform precision jig boring operations	4
MEM07010B	Perform tool and cutter grinding operations	4
MEM07011B	Perform complex milling operations	4
MEM07012B	Perform complex grinding operations	4
MEM07013B	Perform machining operations using horizontal and/or vertical boring machines	4
MEM07014B	Perform electro-discharge (EDM) machining operations	4
MEM07015B	Set computer controlled machines/processes	2
MEM07021B	Perform complex lathe operations	4
MEM07024B	Operate and monitor machine/process	4
MEM07025B	Perform advanced machine/process operation	6
MEM07026B	Perform advanced plastic processing	6
MEM07027B	Perform advanced press operations	6
MEM07028B	Operate computer controlled machines/processes	2
MEM07029B	Perform routine sharpening/maintenance of production tools and cutters	4
MEM07030C	Perform metal spinning lathe operations (basic)	8
MEM07031C	Perform metal spinning lathe operations (complex)	4
MEM07032B	Use workshop machines for basic operations	2
MEM07033B	Operate and monitor basic boiler	6
MEM07034A	Operate and monitor intermediate class boiler	4
MEM07040A	Set multistage integrated processes	6
MEM08001B	Perform wire, jig and barrel load/unload work	4
MEM08002C	Pre-treat work for subsequent surface coating	4
MEM08003C	Perform electroplating operations	6
MEM08004B	Finish work using wet, dry and vapour deposition methods	4
MEM08005B	Prepare and produce specialised coatings	4
MEM08006B	Produce clear and/or coloured and/or sealed anodised films on aluminium	2
MEM08007B	Control surface finish production and finished product quality	4
MEM08008B	Operate and control surface finishing waste treatment process	3
MEM08009C	Make up solutions	2
MEM08010B	Manually finish/polish materials	6
MEM08011B	Prepare surfaces using solvents and/or mechanical means	2
MEM08012B	Prepare surfaces by abrasive blasting (basic)	4
MEM08013B	Prepare surfaces by abrasive blasting (advanced)	4

MEM08014B	Apply protective coatings (basic)	4
MEM08015B	Apply protective coatings (advanced)	4
MEM08016B	Control blast coating by-products, materials and emissions	1
MEM08018B	Electroplate engineering coatings	6
MEM08019B	Electroplate protective finishes	6
MEM08020B	Electroplate decorative finishes	6
MEM09002B	Interpret technical drawing	4
MEM09003B	Prepare basic engineering drawing	8
MEM09005B	Perform basic engineering detail drafting	8
MEM09011B	Apply basic engineering design concepts	6
MEM09021B	Interpret and produce curved 3-dimensional shapes	4
MEM09022A	Create 2D code files using computer aided manufacturing system	4
MEM10001C	Erect structures	4
MEM10002B	Terminate and connect electrical wiring	3
MEM10003B	Install and test electrical wiring and circuits up to 1000 volts a.c. and 1500 volts d.c.	12
MEM10004B	Enter and change programmable controller operational parameters	2
MEM10005B	Commission programmable controller programs	4
MEM10006B	Install machine/plant	4
MEM10009B	Install refrigeration and air conditioning plant and equipment	4
MEM10010B	Install pipework and pipework assemblies	4
MEM10011B	Terminate and connect specialist cables	3
MEM10013A	Install split air conditioning systems and associated pipework	6
MEM11001C	Erect/dismantle scaffolding and equipment	4
MEM11002C	Erect/dismantle complex scaffolding and equipment	4
MEM11003B	Coordinate erection/dismantling of complex scaffolding/equipment	4
MEM11004B	Undertake dogging	4
MEM11005B	Pick and process order	4
MEM11006B	Perform production packaging	2
MEM11007B	Administer inventory procedures	4
MEM11008B	Package materials (stores and warehouse)	2
MEM11009B	Handle/move bulk fluids/gases	4
MEM11010B	Operate mobile load shifting equipment	4
MEM11011B	Undertake manual handling	2
MEM11012B	Purchase materials	6
MEM11013B	Undertake warehouse receival process	4
MEM11014B	Undertake warehouse dispatch process	4
MEM11015B	Manage warehouse inventory system	6
MEM11016B	Order materials	2
MEM11017B	Organise and lead stocktakes	4
MEM11018B	Organise and maintain warehouse stock receival and/or dispatch system	6
MEM11019B	Undertake tool store procedures	4

MEM11020B	Perform advanced warehouse computer operations	4
MEM11021B	Perform advanced operation of load shifting equipment	2
MEM11022B	Operate fixed/moveable load shifting equipment	4
MEM12001B	Use comparison and basic measuring devices	2
MEM12002B	Perform electrical/electronic measurement	2
MEM12006C	Mark off/out (general engineering)	4
MEM12007D	Mark off/out structural fabrications and shapes	4
MEM12019B	Measure components using coordinate measuring machine	4
MEM12020B	Set and operate coordinate measuring machine	2
MEM12021B	Program coordinate measuring machine	4
MEM12022B	Program coordinate measuring machine (advanced)	2
MEM13001B	Perform emergency first aid	1
MEM13002B	Undertake occupational health and safety activities in the workplace	3
MEM13003B	Work safely with industrial chemicals and materials	2
MEM13004B	Work safely with molten metals/glass	2
MEM13006B	Collect and evaluate occupational health and safety data for an enterprise or section of an enterprise	4
MEM13007B	Maintain water treatment systems for cooling towers	2
MEM13010A	Supervise occupational health and safety in an industrial work environment.	4
MEM13013B	Work safely with ionizing radiation	4
MEM15001B	Perform basic statistical quality control	2
MEM15003B	Use improvement processes in team activities	4
MEM15004B	Perform inspection	2
MEM15005B	Select and control inspection processes and procedures	4
MEM16002C	Conduct formal interviews and negotiations	4
MEM16004B	Perform internal/external customer service	2
MEM16005A	Operate as a team member to conduct manufacturing, engineering or related activities	2
MEM18001C	Use hand tools	2
MEM18002B	Use power tools/hand held operations	2
MEM18003C	Use tools for precision work	4
MEM18004B	Maintain and overhaul mechanical equipment	4
MEM18005B	Perform fault diagnosis, installation and removal of bearings	4
MEM18006C	Repair and fit engineering components	6
MEM18007B	Maintain and repair mechanical drives and mechanical transmission assemblies	4
MEM18008B	Balance equipment	2
MEM18009B	Perform levelling and alignment of machines and engineering components	4
MEM18012B	Perform installation and removal of mechanical seals	2
MEM18013B	Perform gland packing	2
MEM18014B	Manufacture press tools and gauges	8
MEM18015B	Maintain tools and dies	4
MEM18018C	Maintain pneumatic system components	4

MEM18020B	Maintain hydraulic system components	4
MEM18024B	Maintain engine cooling systems	2
MEM18025B	Service combustion engines	2
MEM18026C	Test compression ignition fuel systems	4
MEM18027C	Overhaul engine fuel system components	8
MEM18028B	Maintain engine lubrication systems	2
MEM18029B	Tune diesel engines	4
MEM18030B	Diagnose and rectify low voltage electrical systems	8
MEM18031B	Diagnose and rectify low voltage starting systems	2
MEM18032B	Maintain induction/exhaust systems	4
MEM18033B	Perform engine bottom-end overhaul	4
MEM18034B	Perform engine top-end overhaul	8
MEM18035B	Diagnose and rectify braking systems	6
MEM18037B	Diagnose and rectify low voltage charging systems	2
MEM18038B	Maintain wheels and tyres	2
MEM18039B	Diagnose and rectify track type undercarriage	4
MEM18040B	Maintain suspension systems	4
MEM18041B	Maintain steering systems	4
MEM18042C	Diagnose and rectify manual transmissions	4
MEM18043C	Diagnose and rectify automatic transmissions	8
MEM18044C	Diagnose and rectify drive line and final drives	4
MEM18045B	Fault find/repair electrical equipment/components up to 250 volts single phase supply	4
MEM18046B	Fault find/repair electrical equipment/components up to 1000 volts a.c./1500 volts d.c.	10
MEM18047B	Diagnose and maintain electronic controlling systems on mobile plant	4
MEM18048B	Fault find and repair/rectify basic electrical circuits	12
MEM18052B	Maintain fluid power systems for mobile plant	4
MEM18055B	Dismantle, replace and assemble engineering components	3
MEM18057B	Maintain/service analog/digital electronic equipment	6
MEM18063B	Terminate signal and data cables	4
MEM18064B	Maintain instrumentation system components	6
MEM18071B	Connect/disconnect fluid conveying system components	2
MEM18072B	Manufacture fluid conveying conductor assemblies	4
MEM18084A	Commission and decommission split air conditioning systems	4
MEM18085A	Install, service and repair domestic air conditioning and refrigeration appliances	6
MEM18086B	Test, recover, evacuate and charge refrigeration systems	4
MEM18087B	Service and repair domestic and light commercial refrigeration and air conditioning equipment	6
MEM18088B	Maintain and repair commercial air conditioning systems and components	4
MEM18089B	Maintain and repair central air handling systems	6
MEM18090B	Maintain and repair industrial refrigeration systems and components	6

MEM18094B	Service and repair commercial refrigeration	6
MEM18095A	Maintain and repair cooling towers/evaporative condensers and associated equipment	4
MEM18096A	Maintain, repair/replace and adjust refrigerant flow controls and associated equipment	6
MEM18097A	Manufacture cavity dies	8
MEM18098A	Prepare to perform work associated with fuel system installation and servicing*	2
MEM19001B	Perform jewellery metal casting	6
MEM19002B	Prepare jewellery illustrations	4
MEM19003B	Handle gem materials	2
MEM19004B	Handle and examine gemstone materials	6
MEM19005B	Produce three-dimensional precision items	8
MEM19006B	Replace watch batteries	1
MEM19007B	Perform gemstone setting	6
MEM19009B	Perform investment procedures for lost wax casting process	1
MEM19010B	Produce rubber moulds for lost wax casting process	2
MEM19011B	Perform wax injection of moulds for lost wax casting process	2
MEM19012B	Produce jewellery wax model	4
MEM19014B	Perform hand engraving	4
MEM19015B	Perform jewellery enamelling	4
MEM19016B	Construct jewellery components	4
MEM19017B	Fabricate jewellery items	6
MEM19020B	Fault-find and maintain micro-mechanisms	4
MEM19021B	Diagnose and service micro-mechanisms	6
MEM20001A	Produce keys	4
MEM20002A	Assemble and test lock mechanisms	6
MEM20003A	Install and upgrade locks and hardware	4
MEM20004A	Gain entry	4
MEM20005A	Install and maintain door control devices/systems	2
MEM20006A	Maintain and service mechanical locking devices	6
MEM20007A	Plan and prepare a masterkey system	4
MEM20009A	Gain entry and reinstate fire and security containers	4
MEM20010A	Gain entry and reinstate automotive locking systems	4
MEM20014A	Perform a site security survey	2
MEM21001A	Replace watch batteries, capacitors and bands	2
MEM21002A	Perform watch movement exchange *	2
MEM21003A	Perform watch case servicing, repair and refurbishment *	4
MEM21004A	Clean watch and clock components	2
MEM21005A	Diagnose faults in quartz watches *	2
MEM21006A	Service quartz watches *	4
MEM21007A	Service complex quartz watches	4
MEM21008A	Service mechanical watches	4
MEM21009A	Inspect, diagnose, adjust and repair mechanical watches	4
MEM21010A	Service watch power generating systems	2

MEM21011A	Service calendar and other dial indication mechanisms for watches	4
MEM21012A	Service and repair mechanical watch oscillating systems	4
MEM21013A	Service, test and adjust watch escapements	4
MEM21014A	Service mechanical chronograph watches	6
MEM21015A	Perform precision watch timing and adjustment	6
MEM21016A	Install and set up clocks	2
MEM21017A	Service and repair clock timepieces	6
MEM24001B	Perform basic penetrant testing	2
MEM24003B	Perform basic magnetic particle testing	2
MEM24005B	Perform basic eddy current testing	2
MEM24007B	Perform ultrasonic thickness testing	2
MEM24009B	Perform basic radiographic testing	2
MEM25001B	Apply fibre-reinforced materials	2
MEM25002B	Form and integrate fibre-reinforced structures	4
MEM25003B	Set up marine vessel structures	4
MEM25004B	Fair and shape surfaces	2
MEM25005B	Construct and assemble marine vessel timber components	8
MEM25006B	Undertake marine sheathing operations	2
MEM25007B	Maintain marine vessel surfaces	4
MEM25009B	Form timber shapes using hot processes	2
MEM25010B	Perform fitout procedures	4
MEM25011B	Install marine systems	8
MEM25012B	Install and test operations of marine auxiliary systems	6
MEM25014B	Perform marine slipping operations	2
MEM25015A	Assemble and install equipment and accessories/ancillaries	2
MEM50002B	Work safely on marine craft	1
MEM50003B	Follow work procedures to maintain the marine environment	1
MEM50004B	Maintain quality of environment by following marina codes	1
MEM50009B	Safely operate a mechanically powered recreational boat	2
AURVTN2002	Carry out panel repairs	4
BSBOHS502A	Participate in the management of the OHS information and data systems	2
BSBOHS601A	Develop a systematic approach to managing OHS	4
BSBOHS602A	Develop OHS information and data analysis and reporting and recording processes	2
BSBOHS603A	Analyse and evaluate OHS risk	4
ICTTC136B	Install, maintain and modify customer premises communications cabling: ACA Restricted Rule	6
ICTTC137B	Install, maintain and modify customer premises communications cabling: ACA Open Rule	6
MEA405A	Repair/modify aircraft composite material structure/components	4
PMBPROD291B	Operate resin infusion moulding equipment	2
PMBPROD294B	Operate resin transfer moulding equipment	2
PMBPROD298B	Operate equipment using pre-pregs material	2
PMBPROD391B	Produce composites using resin infusion	4

PMBPROD394B	Produce composites using resin transfer moulding	4
PMBPROD398B	Produce composites using pre-pregs	4
PRSTS202A	Install security equipment/system	4
PRSTS302A	Program security equipment/system	2
PRSTS303A	Test installed security equipment/system	2
PRSTS304A	Commission/decommission security equipment/system	2
PRSTS305A	Identify and diagnose electronic security equipment/system fault	2
PRSTS307A	Maintain and service security equipment/system	4
PRSTS317A	Provide estimate and quote	4
PRSTS319A	Modify and repair security equipment/system	4
TLILIC0012A	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	1
TLILIC2001A	Licence to operate a forklift truck	0

Group B - Specialisation units (optional)

- Units up to the value of 12 points may be selected from this list.

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Unit code	Unit title	P
MEM05026C	Apply welding principles	4
MEM05042B	Perform welds to code standards using flux core arc welding process	6
MEM05043B	Perform welds to code standards using gas metal arc welding process	6
MEM05044B	Perform welds to code standards using gas tungsten arc welding process	6
MEM05045B	Perform pipe welds to code standards using manual metal arc welding process	6
MEM05046B	Perform welds to code standards using manual metal arc welding process	6
MEM05053A	Set and edit computer controlled thermal cutting machines	4
MEM05054A	Write basic NC/CNC programs for thermal cutting machines	4
MEM07016C	Set and edit computer controlled machines/processes	4
MEM07018C	Write basic NC/CNC programs	4
MEM07019C	Program NC/CNC machining centre	2
MEM07020C	Program multiple spindle and/or multiple axis NC/CNC machining centre	2
MEM07022C	Program CNC wire cut machines	2
MEM12003B	Perform precision mechanical measurement	2
MEM12004B	Perform precision electrical/electronic measurement	4
MEM18011C	Shut down and isolate machines/equipment	2
MEM18049C	Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.	3
MEM18050C	Disconnect/reconnect fixed wired equipment over 1000 volts a.c./1500 volts d.c.	3

MEM18054B	Fault find, test and calibrate instrumentation systems and equipment	8
MEM18056B	Diagnose and repair analog equipment and components	10
MEM18062B	Install, maintain and calibrate instrumentation sensors, transmitters and final control elements	8
MEM18065B	Diagnose and repair digital equipment and components	10
MEM18092B	Maintain and repair commercial and/or industrial refrigeration and/or air conditioning controls	6

Group C - Specialisation units

- Select units from this list to bring the total value of the Specialisation units chosen from Groups A, B and C to 117 points, including any prerequisites.

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Unit code	Unit title	P
MEM05024B	Perform welding supervision	12
MEM05025C	Perform welding/fabrication inspection	12
MEM07023C	Program and set up CNC manufacturing cell	6
MEM07039A	Write programs for industrial robots	4
MEM09004B	Perform electrical/electronic detail drafting	8
MEM09006B	Perform advanced engineering detail drafting	4
MEM09007B	Perform advanced mechanical detail drafting	4
MEM09008B	Perform advanced structural detail drafting	4
MEM09009C	Create 2D drawings using computer aided design system	8
MEM09010C	Create 3D models using computer aided design system	4
MEM09023A	Create 3D code files using computer aided manufacturing system	6
MEM10007C	Modify control systems	6
MEM10008B	Undertake commissioning procedures for plant and/or equipment	4
MEM12005B	Calibrate measuring equipment	6
MEM14001B	Schedule material deliveries	8
MEM14002B	Undertake basic process planning	8
MEM14003B	Undertake basic production scheduling	8
MEM15007B	Conduct product and/or process capability studies	6
MEM15008B	Perform advanced statistical quality control	2
MEM15010B	Perform laboratory procedures	8
MEM15011B	Exercise external quality assurance	6
MEM15012B	Maintain/supervise application of quality procedures	4
MEM15015B	Examine trading practices	5
MEM15016B	Inspect pre-packed articles	8
MEM15017B	Use and maintain reference standards	3
MEM15018B	Investigate consumer complaints	6
MEM15019B	Conduct a field inspection	12
MEM15020C	Perform verification/certification or in-service inspection	12

MEM15021C	Conduct audits of servicing licensees and public weighbridge licensees	4
MEM15022B	Verify reference standards	8
MEM16001B	Give formal presentations and take part in meetings	2
MEM16003B	Provide advanced customer service	2
MEM16010A	Write reports	2
MEM16013A	Operate in a self-directed team	2
MEM17001B	Assist in development and deliver training in the workplace	2
MEM17002B	Conduct workplace assessment	2
MEM18010C	Perform equipment condition monitoring and recording	4
MEM18016B	Analyse plant and equipment condition monitoring results	4
MEM18017C	Modify mechanical systems and equipment	8
MEM18019B	Maintain pneumatic systems	4
MEM18021B	Maintain hydraulic systems	4
MEM18022B	Maintain fluid power controls	8
MEM18023B	Modify fluid power system operation	8
MEM18051B	Fault find and repair/rectify complex electrical circuits	6
MEM18053B	Modify fluid power control systems	6
MEM18058C	Modify electronic equipment	4
MEM18059B	Modify electronic systems	4
MEM18060B	Maintain, repair control instrumentation single and multiple loop control systems	8
MEM18061B	Maintain/calibrate complex control systems	8
MEM18066B	Diagnose and repair microprocessor-based equipment	6
MEM18067B	Tune control loops multi controller or multi element systems	6
MEM18069B	Maintain, repair instrumentation process control analysers	6
MEM18070C	Modify complex electrical circuits and systems	6
MEM18073A	Perform advanced equipment testing and diagnostics on mobile plant and equipment	8
MEM18091B	Maintain and repair multi stage, cascade and/or ultra-cold industrial refrigeration systems	4
MEM18093B	Maintain and repair integrated industrial refrigeration and/or large air handling system controls	8
MEM19008B	Prepare jewellery designs	6
MEM19013B	Produce jewellery metal masters	4
MEM19018B	Repair jewellery items	6
MEM19022B	Perform precision micro-mechanism diagnosis and servicing	6
MEM20008A	Develop and implement a masterkey system	6
MEM20011A	Service and repair fire and security containers	6
MEM20012A	Service and repair mechanical automotive locking systems	4
MEM20013A	Service automotive transponder systems	2
MEM21018A	Service clock escapements and oscillating systems	4
MEM21019A	Service and repair clock striking mechanisms	4
MEM21020A	Service and repair clock chiming mechanisms	6
MEM21021A	Restore clockwork mechanisms	6
MEM21022A	Manufacture watch and clock components	6

MEM21023A	Plan, set up and operate horological workshop or service centre	4
MEM24002B	Perform penetrant testing	4
MEM24004B	Perform magnetic particle testing	4
MEM24006B	Perform eddy current testing	6
MEM24008B	Perform ultrasonic testing	6
MEM24010B	Perform radiographic testing	6
MEM24011B	Establish non-destructive tests	12
MEM24012C	Apply metallurgy principles	4
MEM25008B	Repair marine vessel surfaces and structures	4
MEM25013B	Produce three-dimensional plugs/moulds	12
MEM30025A	Analyse a simple electrical circuit	4
MSAENV472B	Implement and monitor environmentally sustainable work practices	4

The minimum requirements for this qualification can also be met by holders of one of the following qualifications or equivalent subject to the completion of the Core units of competency as specified for this Diploma as well as additional Specialisation units of competency drawn from Specialisation units Group A to a maximum value of 24 points and Specialisation units in Group B and Group C (units to a maximum of 12 points may be selected from Group B) to bring the total value of additional units to at least 44 points (note that additional units are those units not included in the Certificate III qualification already held):

- MEM30105 Certificate III in Engineering - Production Systems
- MEM30205 Certificate III in Engineering - Mechanical Trade
- MEM30305 Certificate III in Engineering - Fabrication Trade
- MEM30405 Certificate III in Engineering - Electrical/Electronic Trade
- MEM30605 Certificate III in Jewellery Manufacture
- MEM30705 Certificate III in Marine Craft Construction
- MEM30805 Certificate III in Locksmithing
- MEM31010 Certificate III in Watch and Clock Service and Repair.
- AUR30305 Certificate III in Marine

In addition to the above, the minimum requirements for this qualification can also be met by holders of the MEM40105 Certificate IV in Engineering subject to the completion of the Mandatory units of competency as specified above as well as additional Specialisation units drawn from Specialisation units Group A to bring the total value of additional units to at least 8 points. Where higher level Core units (i.e. those required beyond Certificate IV) were included in the Certificate IV as Specialisation units then additional Specialisation units from Group C to the same points value will also be need to be completed.

UEESS00110 - Sustainable - Installer of Grid Connected Photovoltaic Systems (Release 2)

Skill Set Requirements

UEENEEG171A Install, set up and commission interval metering

UEENEEK125A Solve basic problems in photovoltaic energy apparatus and systems

UEENEEK148A Install, configure and commission LV grid connected photovoltaic power systems

UEESS00100 - Sustainable - Designer of Grid Connected Photovoltaic Systems (Release 2)

Skill Set Requirements

UEENEEE103A Solve problems in ELV single path circuits

UEENEEE104A Solve problems in d.c. circuits

UEENEEE105A Fix and secure electrotechnology equipment

UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

UEENEEE108A Lay wiring_cabling and terminate accessories for extra-low voltage (ELV) circuits

UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work

UEENEEK125A Solve basic problems in photovoltaic energy apparatus and systems

UEENEEK135A Design grid connected photovoltaic power supply systems

UEESS00101 - Sustainable - Designer-Installer of Grid Connected Photovoltaic Systems (Release 2)

Skill Set Requirements

UEENEEG171A Install, set up and commission interval metering

UEENEEK125A Solve basic problems in photovoltaic energy apparatus and systems

UEENEEK135A Design grid connected photovoltaic power supply systems

UEENEEK148A Install, configure and commission LV grid connected photovoltaic power systems

UEESS00159 - Sustainable - Designer of Grid Connected Photovoltaic Systems Skill Set (Release 1)

Skill Set Requirements

The following **units** of competency must be attained.	
UEECD0007	Apply work health and safety regulations, codes and practices in the workplace
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications
UEERE0011	Design grid-connected photovoltaic power supply systems
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems
AND	
UEECD0043	Solve problems in direct current circuits
OR	
UEECD0044	Solve problems in multiple path circuits
UEECD0046	Solve problems in single path circuits

UEE21911 - Certificate II in Electronics (Release 3)

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 120 points in accordance with the Elective Competency Standard Units table below.

. Core Competency Standard Units All Core competency standard units to be achieved		Weighting Points
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
UEENEEE104A	Solve problems in d.c. circuits	80
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work	20
UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40
UEENEEK142A	Apply environmentally and sustainable procedures in the energy sector	20
Total points in core		240
Elective Competency Standard Units Complete Elective units to achieve a total of weighting of 120 points from the following groups:		
Group	Minimum points	Maximum points
A Imported or Non-Technical Competency Standard Units Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 2. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	0	60
B Qualification Elective Units You may select all your elective units from this Group	60	120

Group A Imported and Common Elective Units		Weighting Points
You may complete units to a maximum weighting of 60		
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
UEENEEC010B	Deliver a service to customers	20
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 2. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework	Up to 60 Points
Group B Qualification Elective Units		Weighting Points
Complete units to a minimum weighting of 60 You may select all your elective units from this Group		
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
UEENEEB101A	Operate and maintain amateur radio communication stations	40
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEED102A	Assemble, set-up and test computing devices	80
UEENEED143A	Install and configure a client computer operating system and software	40
UEENEED146A	Set up and configure basic local area network (LAN)	40
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
UEENEEE122A	Carry out preparatory energy sector work activities	60

UEENEEE123A	Solve basic problems electronic and digital equipment and circuits	80
UEENEEE141A	Use of routine equipment/plant/technologies in an energy sector environment	40
UEENEEE146A	Identify effects of energy on machinery and materials in an energy sector environment	120
UEENEEE179A	Identify and select components, accessories and materials for energy sector work activities	20
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
UEENEEH101A	Repair basic computer equipment faults by replacement of modules/sub-assemblies	40
UEENEEH104A	Set up and test residential video/audio equipment	40
UEENEEH108A	Assemble and install reception antennae and signal distribution equipment	60
UEENEEH128A	Install and test microwave antennae and waveguides	60
UEENEEH161A	Install fire detection and warning system apparatus	40
UEENEEH169A	Solve problems in basic electronic circuits	100
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20

UEE10120 - Certificate I in ElectroComms Skills (Release 1)

Packaging Rules

<table>
<tr><td colspan="3">A total of 180 weighting points comprising:

120 core weighting points listed below; plus

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

Choose a total of 60 weighting points elective units from the list below, of which between 0 and 30 weighting points can be taken from Group A; and between 30 and 60 weighting points must be taken from Group B.

Up to 30 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.</td></tr>
<tr><td>Core units</td><td></td><td>Weighting Points</td></tr>
<tr><td>ICTICT203</td><td>Operate application software packages</td><td>20</td></tr>
<tr><td>UEECD0007</td><td>Apply work health and safety regulations, codes and practices in the workplace</td><td>20</td></tr>
<tr><td>UEECD0009</td><td>Carry out routine work activities in an energy sector environment*</td><td>40</td></tr>
<tr><td>UEECD0021</td><td>Identify and select components, accessories and materials for energy sector work activities*</td><td>20</td></tr>
<tr><td>UEERE0001</td><td>Apply environmentally and sustainable procedures in the energy sector</td><td>20</td></tr>
<tr><td>Group A: Imported and common elective units.</td><td></td><td>Weighting Points</td></tr>
<tr><td>BSBCUS201</td><td>Deliver a service to customers</td><td>20</td></tr>
<tr><td>UEECO0002</td><td>Maintain documentation</td><td>20</td></tr>
<tr><td>UEECO0016</td><td>Receive and store materials and equipment for electrotechnology work</td><td>20</td></tr>
<tr><td>UEECO0017</td><td>Source and purchase material/parts for installation or service jobs</td><td>20</td></tr>
<tr><td>Group B: Qualification elective units.</td><td></td><td>Weighting Points</td></tr>
</table>

UEECD0019	Fabricate, assemble and dismantle utilities industry components*	40
UEECD0020	Fix and secure electrotechnology equipment*	20
UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	20
UEECD0042	Solve problems in ELV single path circuits*	40
UEEEC0046	Operate and maintain amateur radio communication stations*	40

UEE30811 - Certificate III in Electrotechnology Electrician (Release 4)

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 140 points in accordance with the Elective Competency Standard Units table below.

Core Competency Standard Units All Core competency standard units to be achieved		Weighting Points
UEENEEC020B	Participate in electrical work and competency development activities	60
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	40
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits	40
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations	60

UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	40
UEENEEG109A	Develop and connect electrical control circuits	80
UEENEEK142A	Apply environmentally and sustainable procedures in the energy sector	20
Total points in core		920

Elective Competency Standard Units

Complete Elective units to achieve a total of weighting of 140 points from the following groups:

Group		Minimum points	Maximum points
A	Imported and Common Elective Units Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 3. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	0	60
B	Qualification Elective Units You may select all your elective units from this Group	80	140

Group A Imported and Common Elective Units You may complete units to a maximum weighting of 60		Weighting Points
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
UEENEEC010B	Deliver a service to customers	20
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	20
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
CPCCOHS1001A	Work safely in the construction industry	10
HLTAID001	Provide cardiopulmonary resuscitation	10
HLTAID003	Provide first aid	10
	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 3. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	Up to 60 points

	Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework	
Group B Qualification Elective Units Complete units to a minimum weighting of 80 You may select all your elective units from this Group		Weighting Points
UEENEEA110A	Assemble, mount and connect control gear and switchgear	40
UEENEEA112A	Fabricate and assemble bus bars	40
UEENEEA113A	Mount and wire control panel equipment	40
UEENEED104A	Use engineering applications software on personal computers	40
UEENEEE121A	Plan an integrated cabling installation system	40
UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services	120
UEENEEF104A	Install and modify performance data communication copper cabling	40
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
UEENEEG126A	Install and maintain field power and distribution systems with a low voltage demand up to 200 A per phase	40
UEENEEG129A	Overhaul and repair major switchgear and controlgear	60
UEENEEG150A	Wind electrical coils	40
UEENEEG151A	Place and connect electrical coils	40
UEENEEG152A	Rewind single phase machines	40
UEENEEG153A	Rewind three phase low voltage induction machines	60
UEENEEG154A	Rewind LV direct current machines	60
UEENEEG157A	Conduct electrical tests on LV electrical machines	40
UEENEEG159A	Conduct mechanical tests on electrical machines and components	40
UEENEEG164A	Repair and maintain mechanical components of electrical machines	40

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	20
UEENEEG171A	Install, set up and commission interval metering	20
UEENEEG181A	Provide advice on effective and energy efficient lighting products	20
UEENEEG182A	Supply effective and efficient lighting products for domestic and small commercial applications	40
UEENEEG183A	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect	20
UEENEEG189A	Install and maintain emergency lighting systems	40
UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40
UEENEEH111A	Troubleshoot single phase input d.c. power supplies	40
UEENEEH150A	Assemble and set up basic security systems	80
UEENEEI140A	Plan the electrical installation of integrated systems	20
UEENEEI141A	Develop electrical integrated systems	20
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
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
UEENEEJ102A	Prepare and connect refrigerant tubing and fittings	30
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
UEENEEJ172A	Recover, pressure test, evacuate, charge and leak test refrigerants split systems	60
UEENEEK125A	Solve basic problems in photovoltaic energy apparatus and systems	20
UEENEEK148A	Install, configure and commission LV grid connected photovoltaic power systems	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
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
UEENEEM076A	Use and maintain the integrity of a portable gas detection device	20
UEENEEM077A	Install and maintain the integrity of fixed gas detection equipment	20
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20
UEENEEN102A	Assemble and wire internal electrical rail signalling equipment	30
UEENEEN103A	Install and maintain rail track circuit leads and bonds	30
UEENEEN104A	Test copper rail signalling cables	20
UEENEEN121A	Repair rail signalling power and control cables	40
UETTDRIS43A	Perform low voltage field switching operation to a given schedule	50
UETTDRIS44A	Perform HV field switching operation to a given schedule	50

UETTDRIS47A	Sample, test, filter and reinstate insulating oil	40
UETTDRIS67A	Solve problems in energy supply network equipment	80
UETTDRIS68A	Solve problems in energy supply network protection equipment and systems	40
UETTDRSB23A	Install and maintain substation direct current systems	30
UETTDRSB29A	Maintain capacitor bank equipment for voltage regulation	40
UETTDRSB39A	Perform power system substation switching operation to a given schedule	50

UEE32211 - Certificate III in Air-conditioning and Refrigeration (Release 6)

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 60 points in accordance with the Elective Competency Standard Units table below.

Core Competency Standard Units		Weighting points
All Core competency standard units to be achieved		
UEENEEC025B	Participate in refrigeration and air conditioning work and competency development activities	60
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	30
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	50
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	50
UEENEEJ170A	Diagnose and rectify faults in air conditioning and refrigeration control systems	70
UEENEEJ194A	Solve problems in low voltage refrigeration circuits	40
UEENEEK142A	Apply environmentally and sustainable procedures in the energy sector	20
UEENEEP012A	Disconnect / reconnect composite appliances connected to low voltage installation wiring	60
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
Total points in core		1000

Elective Competency Standard Units

Complete Elective units to achieve a total of weighting of 60 points from the following groups:

Group		Minimum points	Maximum points
A	Imported and Common Elective Units Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 3. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	0	30
B	Qualification Elective Units You may select all your elective units from this Group	30	60

Group A Imported and Common Elective Units You may complete units to a maximum weighting of 30		Weighting Points
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
UEENEEC010B	Deliver a service to customers	20
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	20
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
CPCCOHS1001A	Work safely in the construction industry	10

CPCPCM2043A	Carry out WHS requirements	40
CPCPMS3035A	Install and test ducting systems	10
HLTAID001	Provide cardiopulmonary resuscitation	10
HLTAID003	Provide first aid	10
	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 3. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework	Up to 30 points
Group B Qualification Elective Units Complete units to a minimum weighting of 30 You may select all your elective units from this Group		Weighting Points
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
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
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
UEENEEJ171A	Resolve problems in refrigerated beverage vending cabinets	20
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 refrigeration systems, components and associated equipment	20
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
UEENEEJ182A	Repair and service secondary refrigeration systems	20
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
UEENEEJ188A	Repair and service self contained carbon dioxide refrigeration and heat pump systems	20
UEENEEJ196A	Operate Ammonia Refrigeration Plant	40

UEE33011 - Certificate III in Electrical Fitting (Release 4)

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 240 points in accordance with the Elective Competency Standard Units table below.

Core Competency Standard Units		Weighting
All Core competency standard units to be achieved		Points
UEENEEC020B	Participate in electrical work and competency development activities	60
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
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits	40
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	40
UEENEEG109A	Develop and connect electrical control circuits	80
UEENEEG199A	Conduct compliance and functional verification of electrical apparatus and existing circuits	40
UEENEEK142A	Apply environmentally and sustainable procedures in the energy sector	20

Total points in core		820
Elective Competency Standard Units Complete Elective units to achieve a total of weighting of 240 points from the following groups:		
Group	Minimum points	Maximum points
A Imported and Common Elective Units Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 3. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	0	60
B Qualification Elective Units You may select all your elective units from this Group	180	240

Group A Imported and Common Elective Units You may complete units to a maximum weighting of 60		Weighting Points
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
UEENEEC010B	Deliver a service to customers	20
UEENEED101A	Use basic computer applications relevant to a workplace	20
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	20
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
CPCCOHS1001A	Work safely in the construction industry	10
HLTAID001	Provide cardiopulmonary resuscitation	10
HLTAID003	Provide first aid	10
	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 3. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework	Up to 60 points
Group B Qualification Elective Units		Weighting Points

Complete units to a minimum weighting of 180 You may select all your elective units from this Group		
UEENEEA110A	Assemble, mount and connect control gear and switchgear	40
UEENEEA112A	Fabricate and assemble bus bars	60
UEENEEA113A	Mount and wire control panel equipment	40
UEENEED104A	Use engineering applications software on personal computers	40
UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services	120
UEENEEF104A	Install and modify performance data communication copper cabling	40
UEENEEF115A	Assemble and connect telecommunication frames and cabinets	60
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
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
UEENEEG129A	Overhaul and repair major switchgear and controlgear	60
UEENEEG150A	Wind electrical coils	40
UEENEEG151A	Place and connect electrical coils	40
UEENEEG152A	Rewind single phase machines	40
UEENEEG153A	Rewind three phase low voltage induction machines	60
UEENEEG154A	Rewind LV direct current machines	60
UEENEEG157A	Conduct electrical tests on LV electrical machines	40
UEENEEG159A	Conduct mechanical tests on electrical machines and components	40
UEENEEG164A	Repair and maintain mechanical components of electrical machines	40
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	20
UEENEEG181A	Provide advice on effective and energy efficient lighting products	20
UEENEEG182A	Supply effective and efficient lighting products for domestic and small commercial applications	40
UEENEEG183A	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect	20

UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40
UEENEEH111A	Troubleshoot single phase input d.c. power supplies	40
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
UEENEEI107A	Install instrumentation and control cabling and tubing	20
UEENEEI108A	Install instrumentation and control apparatus and associated equipment	20
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
UEENEEJ102A	Prepare and connect refrigerant tubing and fittings	30
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
UEENEEJ108A	Recover, pressure test, evacuate, charge and leak test refrigerants	60
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	50
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
UEENEEJ162A	Recover, pressure test, evacuate, charge and leak test refrigerants - appliances	50
UEENEEJ170A	Diagnose and rectify faults in air conditioning and refrigeration control systems	70
UEENEEJ173A	Service and repair microwave ovens	40

UEENEEJ194A	Solve problems in low voltage refrigeration circuits	40
UEENEEJ195A	Establish the basic operating conditions of vapour compression systems - appliances	50
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
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	40
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
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
UEENEEM076A	Use and maintain the integrity of a portable gas detection device	20
UEENEEM077A	Install and maintain the integrity of fixed gas detection equipment	20
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20
UEENEEN102A	Assemble and wire internal electrical rail signalling equipment	30
UEENEEN104A	Test copper rail signalling cables	20

UEENEEN121A	Repair rail signalling power and control cables	40
UEENEEP010A	Disconnect - reconnect appliances connected to low voltage installation wiring	60
UEENEEP011A	Disconnect - reconnect neon signs connected to low voltage installation wiring	60
UEENEEP014A	Disconnect - reconnect water heaters connected to low voltage installation wiring	60
UEENEEP016A	Locate and rectify faults in low voltage appliances using set procedures	20
UEENEEP019A	Locate and rectify faults in low voltage water heaters 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	HV Flexible Cables and Plugs	40
UETTDRIS43A	Perform low voltage field switching operation to a given schedule	50
UETTDRIS44A	Perform HV field switching operation to a given schedule	40
UETTDRIS47A	Sample, test, filter and reinstate insulating oil	40
UETTDRIS67A	Solve problems in energy supply network equipment	80
UETTDRIS68A	Solve problems in energy supply network protection equipment and systems	40
UETTDRSB29A	Maintain capacitor bank equipment for voltage regulation	40
UETTDRSB39A	Perform power system substation switching operation to a given schedule	50

UEE32020 - Certificate III in Renewable Energy - ELV (Release 1)

Packaging Rules

A total of **1060 weighting points** comprising:

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

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

Choose a total of 360 **weighting points** elective units from the list below, of which between 0 and 170 **weighting points** can be taken from Group A; and between 190 and 360 **weighting points** can be taken from Group B; or all electives units of 360 **weighting points** can be taken from Group B.

Up to 170 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 that 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
UEECD0016	Document and apply measures to control WHS risks associated with electrotechnology work*	20
UEECD0019	Fabricate, assemble and dismantle utilities industry components*	40
UEECD0020	Fix and secure electrotechnology equipment*	20
UEECD0025	Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits*	40
UEECD0043	Solve problems in direct current circuits*	80
UEECD0045	Solve problems in multiple path extra-low voltage (ELV) a.c. circuits*	40
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications*	40
UEECO0007	Participate in electronics and communications work and competency development activities	60

UEEEL0019	Solve problems in direct current (d.c.) machines*	30
UEEEL0021	Solve problems in magnetic and electromagnetic devices*	30
UEERE0001	Apply environmentally and sustainable procedures in the energy sector	20
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems*	20
UEERE0025	Carry out basic repairs to renewable energy (RE) apparatus*	80
UEERE0034	Diagnose and rectify faults in renewable energy (RE) control systems*	60
UEERE0046	Solve problems in stand-alone renewable energy (RE) systems*	60
UEERE0048	Verify compliance and functionality of an extra-low voltage renewable energy installation*	40
Group A: Imported and common elective units.		Weighting Points
BSBCUS201	Deliver a service to customers	20
CPCCWHS1001	Prepare to work safely in the construction industry	10
HLTAID001	Provide cardiopulmonary resuscitation	10
HLTAID003	Provide first aid	10
ICTICT203	Operate application software packages	20
UEECD0011	Comply with scheduled and preventative maintenance program processes	20
UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	20
UEECO0002	Maintain documentation	20
UEECO0015	Provide quotations for installation or service jobs	20
UEECO0017	Source and purchase material/parts for installation or service jobs	20
Group B: Qualification elective units.		Weighting Points
UEERE0006	Conduct periodic maintenance of remote area power supply battery banks*	40
UEERE0007	Conduct periodic maintenance of remote area power supply generator sets*	40
UEERE0008	Conduct periodic maintenance of remote area power supply photovoltaic arrays*	40
UEERE0009	Conduct periodic maintenance of remote area power supply wind generators*	40
UEERE0017	Maintain and repair facilities associated with remote area essential service operations*	120
UEERE0018	Maintain and repair remote area power generation facilities*	120
UEERE0019	Maintain safety and tidiness of remote area power supply systems*	20
UEERE0023	Work safely with remote area power supply systems*	20

UEERE0024	Attend to breakdowns in remote area power supplies (RAPS)*	20
UEERE0026	Conduct checks in the demand side use of remote area power supplies (RAPS)*	40
UEERE0035	Install ELV stand-alone photovoltaic power systems*	60
UEERE0036	Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications*	20
UEERE0039	Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW*	20
UEERE0041	Maintain operation of remote area power generation plant*	120
UEERE0043	Plan periodic maintenance schedules of remote area power supplies (RAPS)*	40
UEERE0045	Solve basic problems in micro-hydro systems*	20
UEERE0047	Solve problems in wind energy conversion systems (WECS) rated up to 10 kW*	60
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
UEERL0003	Conduct in-service safety testing of electrical cord connected equipment and cord assemblies*	20

UEE30820 - Certificate III in Electrotechnology Electrician (Release 1)

Packaging Rules

A total of **1,110 weighting points** comprising:

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

120 general elective weighting points.

General elective weighting points are to be selected from the Group A general elective units listed below, or **up to 40 general elective weighting points**, may be selected, with appropriate contextualisation, from any relevant nationally endorsed Training Package or accredited course, provided that 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.

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
HLTAID001	Provide cardiopulmonary resuscitation	10
UEECD0007	Apply work health and safety regulations, codes and practices in the workplace	20
UEECD0016	Document and apply measures to control WHS risks associated with electrotechnology work*	20
UEECD0019	Fabricate, assemble and dismantle utilities industry components*	40
UEECD0020	Fix and secure electrotechnology equipment*	20
UEECD0044	Solve problems in multiple path circuits*	40
UEECD0046	Solve problems in single path circuits*	40
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications*	40
UEECO0023	Participate in electrical work and competency development activities	60
UEEEL0003	Arrange circuits, control and protection for electrical installations*	40
UEEEL0005	Develop and connect electrical control circuits*	80
UEEEL0008	Evaluate and modify low voltage heating equipment and controls*	20
UEEEL0009	Evaluate and modify low voltage lighting circuits, equipment and controls*	20

UEEEL0010	Evaluate and modify low voltage socket outlets circuits*	20
UEEEL0012	Install low voltage wiring, appliances, switchgear and associated accessories*	40
UEEEL0014	Isolate, test and troubleshoot low voltage electrical circuits*	60
UEEEL0018	Select wiring systems and select cables for low voltage electrical installations*	60
UEEEL0019	Solve problems in direct current (d.c.) machines*	30
UEEEL0020	Solve problems in low voltage a.c. circuits*	80
UEEEL0021	Solve problems in magnetic and electromagnetic devices*	30
UEEEL0023	Terminate cables, cords and accessories for low voltage circuits*	40
UEEEL0024	Test and connect alternating current (a.c.) rotating machines*	50
UEEEL0025	Test and connect transformers*	30
UEEEL0039	Design, install and verify compliance and functionality of general electrical installations*	40
UEEEL0047	Identify, shut down and restart systems with alternate supplies*	20
UEERE0001	Apply environmentally and sustainable procedures in the energy sector	20
UETTDRRF06	Perform rescue from a live LV panel*	20
Group A General elective units		Weighting Points
UEEAS0007	Assemble, mount and connect control gear and switchgear*	40
UEEAS0008	Fabricate and assemble bus bars*	40
UEEAS0009	Mount and wire control panel equipment*	40
UEECD0028	Plan an integrated cabling installation system*	40
UEECD0050	Use and maintain the integrity of a portable gas detection device*	20
UEECS0033	Use engineering applications software on personal computers	40
UEEDV0005	Install and maintain cabling for multiple access to telecommunication services*	80
UEEDV0008	Install, modify and verify coaxial and structured communication copper cabling*	40
UEEEC0003	Assemble and set up basic security systems*	80
UEEEC0060	Repairs basic electronic apparatus faults by replacement of components*	40
UEEEC0075	Troubleshoot single phase input d.c power supplies*	40
UEEEL0004	Carry out basic repairs to electrical components and equipment*	40
UEEEL0013	Install, set up and commission interval metering*	20

UEEEL0016	Provide advice on effective and energy efficient lighting products	20
UEEEL0017	Repair and maintain mechanical components of electrical machines*	40
UEEEL0022	Supply effective and efficient lighting products for domestic and small commercial applications*	40
UEEEL0026	Align and install traction lift equipment*	20
UEEEL0033	Conduct electrical tests on LV electrical machines*	40
UEEEL0034	Conduct mechanical tests on electrical machines and components*	40
UEEEL0045	Diagnose and rectify faults in traction lift systems*	80
UEEEL0046	Find and repair faults in LV d.c. electrical apparatus and circuits*	60
UEEEL0048	Install and maintain emergency lighting systems*	40
UEEEL0049	Install and maintain emergency safety systems*	60
UEEEL0052	Maintain and service traction lift systems and equipment*	40
UEEEL0053	Maintain operation of electrical marine equipment and systems*	60
UEEEL0054	Maintain operation of electrical mining equipment and systems*	60
UEEEL0055	Overhaul and repair major switchgear and control gear*	60
UEEEL0056	Place and connect electrical coils*	40
UEEEL0061	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect*	20
UEEEL0066	Rewind LV direct current machines*	60
UEEEL0067	Rewind single phase machines*	40
UEEEL0068	Rewind three phase low voltage induction machines*	60
UEEEL0069	Select and arrange equipment for special LV electrical installations*	60
UEEEL0074	Wind electrical coils*	40
UEEHA0001	Conduct detailed inspection of electrical installations for hazardous areas*	40
UEEHA0002	Conduct visual and close inspection of electrical installations for hazardous areas*	40
UEEHA0003	Determine the explosion-protection requirements to meet a specified classified hazardous area*	40
UEEHA0004	Enter a classified hazardous area to undertake work related to electrical equipment	40
UEEHA0005	Install explosion-protected equipment and associated apparatus and wiring systems*	60
UEEHA0006	Maintain equipment associated with hazardous areas*	60
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices*	20
UEEIC0011	Develop electrical integrated systems*	20

UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEEIC0015	Develop, enter and verify word and analogue control programs for programmable logic controllers*	60
UEEIC0024	Plan the electrical installation of integrated systems*	20
UEEIC0038	Solve problems in density/level measurement components and systems*	40
UEEIC0039	Solve problems in flow measurement components and systems*	40
UEEIC0041	Solve problems in pressure measurement components and systems*	40
UEEIC0043	Solve problems in temperature measurement components and systems*	40
UEEIC0047	Use instrumentation drawings, specifications, standards and equipment manuals*	40
UEERA0035	Establish the basic operating conditions of air conditioning systems*	20
UEERA0036	Establish the basic operating conditions of vapour compression systems*	60
UEERA0049	Install and start up single head split air conditioning and water heating heat pump systems*	70
UEERA0059	Prepare and connect refrigerant tubing and fittings*	40
UEERA0064	Recover, pressure test, evacuate, charge and leak test refrigerants - split systems*	60
UEERE0016	Install, configure and commission LV grid-connected photovoltaic power systems*	40
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems*	20
UEERS0001	Assemble and wire internal electrical rail signalling equipment*	30
UEERS0011	Install and maintain rail track circuit leads and bonds*	30
UEERS0017	Repair rail signalling power and control cables*	40
UEERS0019	Test copper rail signalling cables*	20
UETTDRIS43	Perform low voltage field switching operation to a given schedule*	50
UETTDRIS44	Perform HV field switching operation to a given schedule*	40
UETTDRIS47	Sample, test, filter and reinstate insulating oil*	40
UETTDRIS67	Solve problems in energy supply network equipment*	80
UETTDRIS68	Solve problems in energy supply network protection equipment and systems*	40
UETTDRSB23	Install and maintain substation direct current systems*	30
UETTDRSB29	Maintain capacitor bank equipment for voltage regulation*	40
UETTDRSB39	Perform power system substation switching operation to a given schedule*	50

UEE30920 - Certificate III in Electronics and Communications (Release 1)

Packaging Rules

A total of **1060 weighting points** comprising:

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

380 elective weighting points from the elective units listed below.

Up to 180 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
UEECD0016	Document and apply measures to control WHS risks associated with electrotechnology work*	20
UEECD0019	Fabricate, assemble and dismantle utilities industry components*	40
UEECD0043	Solve problems in direct current circuits*	80
UEECO0007	Participate in electronics and communications work and competency development activities	60
UEEEC0028	Fault find and repair complex power supplies*	40
UEEEC0060	Repairs basic electronic apparatus faults by replacement of components*	40
UEEEC0063	Solve fundamental electronic communications system problems*	40
UEEEC0066	Troubleshoot amplifiers in an electronic apparatus*	80
UEEEC0067	Troubleshoot basic amplifier circuits*	40
UEEEC0069	Troubleshoot digital sub-systems*	80
UEEEC0074	Troubleshoot resonance circuits in an electronic apparatus*	80
UEEEC0075	Troubleshoot single phase input d.c power supplies*	40

UEERE0001	Apply environmentally and sustainable procedures in the energy sector	20
Group A: Imported and common elective units.		Weighting Points
BSBCUS201	Deliver a service to customers	20
HLTAID003	Provide first aid	10
ICTICT203	Operate application software packages	20
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
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
UEECD0011	Comply with scheduled and preventative maintenance program processes	20
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
UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	20
UEECD0040	Solve basic problems electronic and digital equipment and circuits*	80
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications*	40
UEECO0002	Maintain documentation	20
UEECO0015	Provide quotations for installation or service jobs	20
UEECO0017	Source and purchase material/parts for installation or service jobs	20
UEEEC0046	Operate and maintain amateur radio communication stations*	40
UEECS0003	Assemble, set up and test computing devices*	80
UEECS0018	Develop web pages for engineering applications	40
UEECS0020	Evaluate and modify object-oriented code programs	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
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
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
UEEEC0061	Set up and adjust commercial radio frequency (RF) transmission and reception systems*	60
UEEEC0062	Set up and test residential video/audio equipment*	40
UEEEC0064	Solve oscillator problems*	40
UEEEC0065	Solve problems in basic electronic circuits*	100
UEEEC0068	Troubleshoot communication 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
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
UEEIC0012	Develop structured programs to control external devices*	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
UEERL0004	Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring*	60
UEERL0005	Locate and rectify faults in low voltage (LV) electrical equipment using set procedures*	20

UEG30120 - Certificate III in Gas Supply Industry Operations (Release 2)

Packaging Rules

A total of 960 weighting points comprising:

300 core weighting points listed below; plus

660 elective weighting points from the elective units listed below.

Choose a minimum of 660 **weighting points** elective units from the list below, of which between 0 and 160 **weighting points** can be taken from Group A, between 0 and 180 **weighting points** can be taken from Group B, between 0 and 130 **weighting points** can be taken from Group D; or **elective units** between 330 and 660 **weighting points** can be taken from Group C.

Up to 160 weighting points of the 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 UEG CVIG, if not listed weighting points will be 10 points unless directed from the Gas Industry Reference Committee (IRC). The general elective units must contribute to the vocational outcomes of the qualification.

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

Where a prerequisite unit is attached to a unit, it is identified by this symbol ⌐.

Core units		Weighting Points
BSBLDR301	Support effective workplace relationships	40
BSBPEF301	Organise personal work priorities	40
BSBWHS311	Assist with maintaining workplace safety	40
BSBXTW301	Work in a team	40
UEGNSG005	Prepare to work in the gas industry	20
UEGNSG132	Carry out basic work activities in a gas industry work environment	60
UEGNSG133	Comply with environmental policies and procedures in the utilities industry	40
UEGNSG141	Apply workplace health and safety regulations, codes and practices in the gas supply industry	20
Group A: Imported and common elective units		**Weighting Points**
AVIW0006	Perform infrastructure inspections using remote operated systems	60
BSBHRM413	Support the learning and development of teams and individuals	40
BSBOPS301	Maintain business resources	40
BSBOPS402	Coordinate business operational plans	40
BSBSTR301	Contribute to continuous improvement	40
BSBSTR401	Promote innovation in team environments	40

BSBWHS308	Participate in WHS hazard identification, risk assessment and risk control processes	50
CPCCLDG3001	Licence to perform dogging	30
CPCCLRG3001	Licence to perform rigging basic level └CPCCLDG3001 Licence to perform dogging	40
CPCCLRG3002	Licence to perform rigging intermediate level └CPCCLRG3001 Licence to perform rigging basic level	40
CPCCWHS1001	Prepare to work safely in the construction industry	10
CPPFES2005A	Demonstrate first attack firefighting equipment	15
HLTAID009	Provide cardiopulmonary resuscitation	10
HLTAID011	Provide First Aid	10
HLTAID013	Provide First Aid in remote or isolated site	10
HLTWHS005	Conduct manual tasks safely	20
ICTICT214	Operate application software packages	20
MEM05004	Perform routine oxy fuel gas welding └MEM11011 Undertake manual handling └MEM13015 Work safely and effectively in manufacturing and engineering └MEM16006 Organise and communicate information	20
MEM05012	Perform routine manual metal arc welding └MEM11011 Undertake manual handling └MEM13015 Work safely and effectively in manufacturing and engineering └MEM16006 Organise and communicate information	20
MEM05015	Weld using manual metal arc welding process └MEM05012 Perform routine manual metal arc welding └MEM05051 Select welding processes └MEM05052 Apply safe welding practices └MEM09002 Interpret technical drawing └MEM11011 Undertake manual handling └MEM12023 Perform engineering measurements └MEM12024 Perform computations	40

	∟MEM13015 Work safely and effectively in manufacturing and engineering	
	∟MEM14006 Plan work activities	
	∟MEM16006 Organise and communicate information	
	∟MEM18001 Use hand tools	
	∟MEM18002 Use power tools/hand held operations	
MSMPER200	Work in accordance with an issued permit	20
MSMPER201	Monitor and control work permits	20
MSMPER202	Observe permit work	20
MSMPER300	Issue work permits ∟MSMWHS201 Conduct hazard analysis	20
MSMPER400	Coordinate permit process ∟MSMPER300 Issue work permits	30
MSMPMC400	Carry out stock control	20
MSMSUP200	Achieve work outcomes	30
MSMSUP210	Process and record information	30
MSMSUP240	Undertake minor maintenance	30
MSMSUP303	Identify equipment faults	40
MSMSUP390	Use structured problem-solving tools	40
MSMWHS110	Follow emergency response procedures	20
MSMWHS205	Control minor incidents	30
MSMWHS216	Operate breathing apparatus	20
MSMWHS217	Gas test atmospheres	30
MSS402061	Use SCADA systems in operations	30
MSS402080	Undertake root cause analysis	50
PMAOMIR210	Control evacuation to muster point	20
PMAOMIR346	Assess and secure an incident site	30
PMAOPS223	Operate and monitor valve systems	40
PMAOPS315	Operate and troubleshoot process control systems	60
PMAOPS317	Undertake ship transfer operations	40
PMAOPS338	Communicate and monitor pipeline activities	40
PMASUP311	Operate communications hub	40
PMAWHS211	Prepare equipment for emergency response	20
PMAWHS310	Investigate incidents	30
PMAWHS311	Lead emergency teams	20
PMBWELD301	Butt weld polyethylene plastic pipelines	20
PMBWELD302	Electrofusion weld polyethylene pipelines	20
RIICCM205E	Carry out manual excavation	10
RIICCM206D	Support plant operations	10
RIICCM207D	Spread and compact materials manually	10
RIICCM208D	Carry out basic levelling	10
RIICCM210D	Install trench support	15

RIICRC208D	Lay pipes	40
RIIHAN309F	Conduct telescopic materials handler operations	80
RIIMPO304E	Conduct wheel loader operations	40
RIIMPO308F	Conduct tracked dozer operations	40
RIIMPO309F	Conduct wheeled dozer operations	40
RIIMPO318F	Conduct civil construction skid steer loader operations	70
RIIMPO319E	Conduct backhoe/loader operations	50
RIIMPO320F	Conduct civil construction excavator operations	80
RIISAM201E	Handle resources and infrastructure materials and safely dispose of nontoxic materials	15
RIIWHS202E	Enter and work in confined spaces	30
RIIWHS204E	Work safely at heights	20
RIIWHS205E	Control traffic with stop-slow bat	10
RIIWHS302E	Implement traffic management plans	20
RIIWMG203D	Drain and dewater civil construction site	20
TLIB0002	Carry out vehicle inspection	20
TLIC0003	Operate LP gas tanker └TLILIC0001 Licence to transport dangerous goods by road	40
TLIC2002	Drive light rigid vehicle	40
TLIC2025	Operate four wheel drive vehicle	40
TLIC3003	Drive medium rigid vehicle	40
TLIC3004	Drive heavy rigid vehicle	40
TLIC3005	Drive heavy combination vehicle	40
TLID2003	Handle dangerous goods/hazardous substances	40
TLID2010	Operate a forklift	40
TLID2016	Load and unload explosives/dangerous goods	30
TLID3015	Identify and label explosives/dangerous goods	20
TLID3023	Use specialised liquid bulk gas transfer equipment	40
TLID3027	Prepare for transport of dangerous goods	50
TLID3033	Operate a vehicle-mounted loading crane	40
TLID3036	Lift and move load using a mobile crane	40
TLIF2006	Apply accident-emergency procedures	20
TLIF2010	Apply fatigue management strategies	30
TLIF2012	Apply safe procedures when handling/transporting dangerous goods or explosives	30
TLILIC0001	Licence to transport dangerous goods by road	50
TLILIC0002	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	40
TLILIC0003	Licence to operate a forklift truck	40
TLILIC0008	Licence to operate a non-slewing mobile crane (greater than 3 tonnes capacity)	60
TLILIC0010	Licence to operate a slewing mobile crane (up to 20 tonnes)	70
TLILIC0013	Licence to operate a slewing mobile crane (up to 60 tonnes)	70

TLILIC2014	Licence to drive a light rigid vehicle	40
TLILIC2015	Licence to drive a medium rigid vehicle	40
TLILIC2016	Licence to drive a heavy rigid vehicle	50
TLILIC3017	Licence to drive a heavy combination vehicle	60
TLILIC3018	Licence to drive a multi-combination vehicle	60
UEECO0002	Maintain documentation	20
Group B: General elective units		**Weighting Points**
UEECD0007	Apply work health and safety regulations, codes and practices in the workplace	20
UEECD0019	Fabricate, assemble and dismantle utilities industry components ∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	40
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications ∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	40
UEGNSG004	Locate, prove and protect utility assets	60
UEGNSG006	Use a portable gas detector to locate escape	40
UEGNSG134	Establish a utilities infrastructure work site	60
UEGNSG136	Carry out transmission pipeline construction work activities	60
UEGNSG140	Apply environmental policies and procedures in the utilities industry	20
UEGNSG203	Evaluate and extinguish gas fire	20
UEGNSG219	Conduct excavations in the utilities industry	60
UEGNSG221	First on site response to gas pipeline emergencies ∟ CPPFES2005A Demonstrate first attack firefighting equipment ∟ HLTAID003 Provide first aid ∟ UEGNSG141 Apply workplace health and safety regulations, codes and practices in the gas supply industry	90
UEGNSG224	Construct and lay copper and stainless steel gas distribution pipelines	60
UEGNSG226	Assist with the construction, laying and connection of gas distribution services to mains	40
UEGNSG227	Assist with the construction and laying of gas distribution mains	40
UEGNSG330	Coat metallic pipelines	80
UEGNSG331	Establish right of way access for transmission pipeline construction	60

UEGNSG333	Work in proximity of transmission pipeline construction plant and equipment	40
UEGNSG342	Maintain pipeline easements	40
UEGNSG615	Fill LPG cylinders	80
UEGNSG616	Refurbish gas cylinders	80
UEGNSG705	Disconnect and reconnect small capacity gas meters	40
UEGNSG708	Pressure test residential and small commercial gas installations	40
UEGNSG711	Process meter reading information using appropriate technology	40
UEGNSG712	Read and record meter readings	40
UEGNSG714	Relight Type A gas appliances	60
UEGNSG804	Maintain single stage and single run gas flow and pressure control and measuring devices	80
UEPOPS203	Operate and monitor communications system	20
UEPOPS205	Conduct minor mechanical maintenance	30
UETTDREL14	Working safely near live electrical apparatus as a non-electrical worker	40
Group C: General elective units		Weighting Points
UEECD0050	Use and maintain the integrity of a portable gas detection device ∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	20
UEGNSG101	Undertake gas leak surveys	60
UEGNSG135	Monitor and control gas odourisation	100
UEGNSG137	Operate and maintain gas station water bath heaters	60
UEGNSG138	Install and commission stationary gas fuelled turbine engines ∟ CPCCWHS1001 Prepare to work safely in the construction industry ∟ HLTAID001 Provide cardiopulmonary resuscitation	60
UEGNSG139	Repair and maintain stationary gas fuelled turbine engines	60
UEGNSG142	Conduct isolations under the permit to work system for gas industry work sites ∟MSMWHS217 Gas test atmospheres	80
UEGNSG200	Conduct butt fusion of large diameter polyethylene gas pipeline systems	20
UEGNSG201	Conduct distribution pipeline emergency repair ∟UEGNSG225 Perform routine maintenance on distribution pipeline facilities and equipment	100
UEGNSG202	Conduct emergency site control on gas distribution assets	100

UEGNSG212	Construct, lay and connect a gas distribution service to a plastic main	60
UEGNSG213	Construct, lay and connect a gas distribution service to a steel main	60
UEGNSG216	Commission or decommission gas distribution pipelines	100
UEGNSG217	Launch and recover PIGs in a gas distribution pipeline	100
UEGNSG218	Carry out surveillance on gas distribution assets	90
UEGNSG220	Construct and lay polyethylene gas distribution mains	60
UEGNSG222	Construct and lay nylon or PVC gas distribution mains	60
UEGNSG223	Construct and lay steel gas distribution pipelines	60
UEGNSG225	Perform routine maintenance on distribution pipeline facilities and equipment	100
UEGNSG228	Construct and lay large copper gas distribution pipelines ∟UEGNSG134 Establish a utilities infrastructure work site	60
UEGNSG229	Prepare simple drawings of as laid gas mains and services	40
UEGNSG344	Commission or decommission gas transmission pipelines	120
UEGNSG346	Launch and recover PIGs in gas transmission pipelines	100
UEGNSG347	Perform routine maintenance on transmission pipeline facilities and equipment	110
UEGNSG348	Supervise the operation of plant and equipment for the construction of gas transmission pipelines	60
UEGNSG349	Carry out surveillance of gas transmission pipelines	110
UEGNSG350	First response to a gas facility event ∟ CPPFES2005A Demonstrate first attack firefighting equipment ∟ HLTAID003 Provide first aid ∟ UEGNSG141 Apply workplace health and safety regulations, codes and practices in the gas supply industry	60
UEGNSG352	Check and report on gas station conditions	40
UEGNSG353	Carry out aerial surveillance of gas transmission pipelines	60
UEGNSG354	Control excavations in the vicinity of gas transmission pipelines ∟UEGNSG004 Locate, prove and protect utility assets	60
UEGNSG355	Monitor and report on cathodic protection systems	60
UEGNSG356	Monitor and operate flow control, pressure measuring and regulating devices for gas transmission ∟UEGNSG006 Use a portable gas detector to locate escape	100

UEGNSG411	Maintain cathodic protection systems	100
UEGNSG412	Install cathodic protection systems	110
UEGNSG506	Respond to gas infrastructure emergencies	80
UEGNSG507	Remotely monitor and operate gas transmission flow and pressure measuring and regulating devices ∟MSS402061 Use SCADA systems in operations	90
UEGNSG614	Load, unload, exchange and connect LPG cylinders	80
UEGNSG617	Monitor and control the transfer of bulk LPG	100
UEGNSG618	Process liquefied petroleum gas (LPG)	100
UEGNSG619	Perform scheduled maintenance on gas processing or storage facilities and equipment	110
UEGNSG620	Organise the repair of faults in LPG processing or storage facilities and equipment	80
UEGNSG621	Control bulk storage of LPG	110
UEGNSG622	Assess the operational capability of gas safety equipment on a delivery vehicle	40
UEGNSG706	Test new residential and small commercial gas installations	60
UEGNSG713	Investigate billing exceptions-conditions	60
UEGNSG805	Maintain multi-stage and multi-run gas flow and pressure measuring and regulating devices ∟UEGNSG006 Use a portable gas detector to locate escape ∟UEGNSG804 Maintain single stage and single run gas flow and pressure control and measuring devices	80
UEGNSG807	Install gas flow, measuring and pressure regulating devices ∟UEGNSG006 Use a portable gas detector to locate escape	80
UEGNSG811	Monitor and operate complex flow control, measuring and regulating devices for gas distribution	110
UEPMNT367	Install and commission stationary gas fuelled reciprocating engines ∟ CPCCWHS1001 Prepare to work safely in the construction industry ∟ HLTAID001 Provide cardiopulmonary resuscitation	60
UEPMNT368	Repair and maintain stationary gas fuelled reciprocating engines ∟ CPCCWHS1001 Prepare to work safely in the construction industry ∟ HLTAID001 Provide cardiopulmonary resuscitation	60
UEPOPS317	Operate and monitor fixed fire protection systems	30
UEPOPS336	Manage, operate and monitor a gas turbine unit	60
UEPOPS347	Operate and monitor supervisory, control and data acquisition systems	40

Group D: General elective units		Weighting Points
UEGNSG106	Coordinate repair of pipeline, facilities and equipment	110
UEGNSG108	Operate and monitor pipeline control systems	60
UEGNSG109	Control field pipeline operations	60
UEGNSG110	Supervise technical operations for gas distribution or transmission	60
UEGNSG131	Compile a gas industry technical report	20
UEGNSG204	Coordinate and conduct gas distribution pipeline repair and modifications	110
UEGNSG207	Coordinate construction, laying and testing of gas distribution pipelines	110
UEGNSG210	Supervise and monitor contract staff for work on distribution pipelines	120
UEGNSG302	Conduct transmission pipeline emergency repair	120
UEGNSG305	Coordinate gas transmission pipeline repairs and modifications	110
UEGNSG310	Supervise and monitor contract work	60
UEGNSG314	Liaise with third party and the community to maintain pipeline integrity and community safety	40
UEGNSG325	Coordinate the operation of relevant plant and equipment for transmission pipeline construction	80
UEGNSG326	Coordinate and monitor staff and contractors	60
UEGNSG327	Coordinate transmission pipeline construction operations	60
UEGNSG501	Communicate with gas industry stakeholders to meet operational requirements	110
UEGNSG503	Monitor and control field activities	110
UEGNSG504	Monitor and control gas infrastructure using Control Centre systems	110
UEGNSG505	Operate and monitor gas infrastructure to meet nominated demand ∟MSS402061 Use SCADA systems in operations	120
UEGNSG806	Maintain SCADA controlled flow and pressure equipment and electronic gas measurement equipment ∟UEGNSG006 Use a portable gas detector to locate escape	100

UEE40511 - Certificate IV in Electrical - Air-conditioning Split Systems (Release 4)

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 160 points in accordance with the Elective Competency Standard Units table below.

Note: UEENEEG105A - Those holding an Unrestricted Electricians Licence or equivalent issued in an Australian State or Territory meets the requirements of this unit and its pre-requisite requirements.

Core Competency Standard Units All Core competency standard units to be achieved		Weighting Points
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
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	40
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits	40
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations	60
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	40
UEENEEG109A	Develop and connect electrical control circuits	80
UEENEEJ102A	Prepare and connect refrigerant tubing and fittings	30
UEENEEJ105A	Position, assemble and start up single head split air conditioning and water heating heat pump systems	70
UEENEEJ172A	Recover, pressure test, evacuate, charge and leak test refrigerants - split systems	60
UEENEEK145A	Implement and monitor energy sector environmental and sustainable policies and procedures	20
Total points in core		1120

Elective Competency Standard Units

Complete Elective units to achieve a total of weighting of 160 points from the following groups:

Group		Minimum points	Maximum points
A	Imported and Common Elective Units Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 4. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	0	80
B	Qualification Elective Units	0	80
C	Qualification Elective Units You may select all your elective units from this Group	80	160

Group A Imported and Common Elective Units You may complete units to a maximum weighting of 80		Weighting Points
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
UEENEEC010B	Deliver a service to customers	20
UEENEED101A	Use computer applications relevant to a workplace	20

UEENEEE009B	Comply with scheduled and preventative maintenance program processes	20
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
CPCCOHS1001A	Work safely in the construction industry	10
HLTAID001	Provide cardiopulmonary resuscitation	10
	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 4. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework	Up to 80 points
Group B Qualification Elective Units You may complete units to a maximum weighting of 80		Weighting Points
UEENEED104A	Use engineering applications software on personal computers	40
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
UEENEEJ103A	Establish the basic operating conditions of vapour compression systems	60
UEENEEJ104A	Establish the basic operating conditions of air conditioning systems	20
UEENEEJ174A	Apply safety awareness and legal requirements for hydrocarbon refrigerants	10
Group C Qualification Elective Units You must complete units to a minimum weighting of 80 You may select all your elective units from this Group		Weighting Points
UEENEEE114A	Supervise and coordinate energy sector work activities	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
UEENEEJ192A	Analyse the psychrometric performance of HVAC/R systems	50
UEENEEJ193A	Analyse the thermodynamic performance of HVAC/R systems	40

UEE40711 - Certificate IV in Electronics and Communications (Release 4)

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 560 points in accordance with the Elective Competency Standard Units table below.

Core Competency Standard Units		Weighting Points
All Core competency standard units to be achieved		
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
UEENEEE104A	Solve problems in d.c. circuits	80
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
UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40
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
UEENEEH138A	Fault find and repair complex power supplies	40
UEENEEH139A	Troubleshoot basic amplifier circuits	40
UEENEEH146A	Solve fundamental electronic communications system problems	40
UEENEEK145A	Implement and monitor energy sector environmental and sustainable policies and procedures	20
Total points in core		720
Elective Competency Standard Units		
Complete Elective units to achieve a total of weighting of 560 points from the following groups:		

Group		Minimum points	Maximum points
A	Imported and Common Elective Units Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 4. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	0	220
B	Qualification Elective Units	0	360
C	Qualification Elective Units You may select all your elective units from this Group	200	560

Group A Imported and Common Elective Units You may complete units to a maximum weighting of 220		Weighting Points
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
UEENEEC010B	Deliver a service to customers	20
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	20
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
ICTTEN3056A	Install telecommunications network equipment	40
MSS402001A	Apply competitive systems and practices	20
MSS402020A	Apply quick changeover procedures	20
MSS402021A	Apply Just in Time procedures	20
MSS402040A	Apply 5S procedures	20
MSS402080A	Undertake root cause analysis	20
MSS402081A	Contribute to the application of a proactive maintenance strategy	20
	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 4. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework	Up to 220 points

Group B Qualification Elective Units		Weighting Points
You may complete units to a maximum weighting of 360		
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
UEENEEB101A	Operate and maintain amateur radio communication stations	40
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
UEENEED130A	Select, install, configure and test multimedia components	40
UEENEED143A	Install and configure a client computer operating system and software	40
UEENEED146A	Set up and configure basic local area network (LAN)	80
UEENEED153A	Set up, configure and test biometric devices	40
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
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
UEENEEE179A	Identify and select components, accessories and materials for energy sector work activities	20
UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services	120
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	40
UEENEEF109A	Install and connect data and voice communication equipment	40
UEENEEF110A	Select and arrange data and voice equipment for local area networks	40
UEENEEF111A	Test, report and rectify faults in data and voice installations	40
UEENEEF114A	Set up and configure basic data communication systems	40
UEENEEH101A	Repair basic computer equipment faults by replacement of modules/sub-assemblies	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
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
UEENEEH142A	Solve oscillator problems	40
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
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
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
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
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
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
Group C Qualification Elective Units You must complete units to a minimum weighting of 200 You may select all your elective units from this Group		Weighting Points
UEENEEC004B	Prepare specifications for the supply of materials and equipment for electrotechnology projects	40
UEENEEC005B	Estimate electrotechnology projects	40
UEENEED103A	Evaluate and modify object oriented code programs	40
UEENEED154A	Analyse and implement biometric measuring techniques and applications	120
UEENEEE110A	Develop and implement energy sector maintenance programs	60
UEENEEE114A	Supervise and coordinate energy sector work activities	40
UEENEEH129A	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
UEENEEH140A	Fault find and repair sonar apparatus and systems	120
UEENEEH153A	Program and test large security systems	120
UEENEEH157A	Develop basic plans for integrating security systems	40
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
UEENEEH186A	Commission satellite and microwave communication systems	40
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
UEENEEI155A	Develop structured programs to control external devices	40

UEE41511 - Certificate IV in Video and Audio Systems (Release 4)

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 440 points in accordance with the Elective Competency Standard Units table below.

Core Competency Standard Units		Weighting Points
All Core competency standard units to be achieved		
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
UEENEEE104A	Solve problems in d.c. circuits	80
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
UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40
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
UEENEEH119A	Repair predictable faults in television receivers	120
UEENEEH138A	Fault find and repair complex power supplies	40
UEENEEH139A	Troubleshoot basic amplifier circuits	40
UEENEEH146A	Solve fundamental electronic communications system problems	40
UEENEEK145A	Implement and monitor energy sector environmental and sustainable policies and procedures	20
Total points in core		840
Elective Competency Standard Units		

Complete Elective units to achieve a total of weighting of 440 points from the following groups:		
Group	Minimum points	Maximum points
A Imported and Common Elective Units Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 4. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	0	220
B Qualification Elective Units	0	220
C Qualification Elective Units You may select all your elective units from this Group	220	440

Group A Imported and Common Elective Units You may complete units to a maximum weighting of 220		Weighting Points
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
UEENEEC010B	Deliver a service to customers	20
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	20
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 4. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework	Up to 220 points

Group B Qualification Elective Units You may complete units to a maximum weighting of 220		Weighting Points
UEENEEA101A	Assemble electronic components	40
UEENEEA106A	Use lead-free soldering techniques	40
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
UEENEED130A	Select, install, configure and test multimedia components	40
UEENEED143A	Install and configure a client computer operating system and software	40
UEENEED146A	Set up and configure basic local area network (LAN)	80
UEENEED153A	Set up, configure and test biometric devices	40
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
UEENEEE121A	Plan an integrated cabling installation system	40
UEENEEE123A	Solve basic problems electronic and digital equipment and circuits	80
UEENEEE179A	Identify and select components, accessories and materials for energy sector work activities	20
UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services	120
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	40
UEENEEF109A	Install and connect data and voice communication equipment	40
UEENEEF110A	Select and arrange data and voice equipment for local area networks	40
UEENEEF111A	Test, report and rectify faults in data and voice installations	40
UEENEEF114A	Set up and configure basic data communication systems	40
UEENEEH101A	Repair basic computer equipment faults by replacement of modules/sub-assemblies	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
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
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
UEENEEH142A	Solve oscillator problems	40
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
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
UEENEEH166A	Troubleshoot microcontroller based hardware systems	40
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
UEENEEH187A	Solve problems in electronic musical equipment circuits	40
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20
Group C Qualification Elective Units You must complete units to a minimum weighting of 220		Weighting Points

You may select all your elective units from this Group		
UEENEEC004B	Prepare specifications for the supply of materials and equipment for electrotechnology projects	40
UEENEEC005B	Estimate electrotechnology projects	40
UEENEED103A	Evaluate and modify object oriented code programs	40
UEENEED154A	Analyse and implement biometric measuring techniques and applications	120
UEENEEE114A	Supervise and coordinate energy sector work activities	40
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
UEENEEH153A	Program and test large security systems	120
UEENEEH157A	Develop basic plans for integrating security systems	40
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
UEENEEI155A	Develop structured programs to control external devices	40

UEE41920 - Certificate IV in Electrical - Renewable Energy (Release 1)

Packaging Rules

A total of **440 weighting points** comprising:

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

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

Choose a total of 160 **weighting points** elective units from the list below, of which between 0 and 50 **weighting points** can be taken from Group A; between 0 and 120 **weighting points** can be taken from Group B; and between 40 and 160 **weighting points** can be taken from Group C (or all 160 elective **weighting points** can be taken from Group C).

Up to 50 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 that 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
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
UEECD0027	Participate in development and follow a personal competency development plan	20
UEERE0015	Implement and monitor energy sector environmental and sustainable policies and procedures	20
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems*	20
UEERE0025	Carry out basic repairs to renewable energy (RE) apparatus*	80
UEERE0034	Diagnose and rectify faults in renewable energy (RE) control systems*	60
Group A: Imported and common elective units		Weighting Points
BSBCUS201	Deliver a service to customers	20
CPCCWHS1001	Prepare to work safely in the construction industry	10

HLTAID001	Provide cardiopulmonary resuscitation	10	
ICTICT203	Operate application software packages	20	
UEECD0011	Comply with scheduled and preventative maintenance program processes	20	
UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	20	
UEECO0002	Maintain documentation	20	
UEECO0015	Provide quotations for installation or service jobs	20	
UEECO0017	Source and purchase material/parts for installation or service jobs	20	
Group B: Qualification elective units.		Weighting Points	
UEECS0033	Use engineering applications software on personal computers	40	
UEEEL0013	Install, set up and commission interval metering*	20	
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices*	20	
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60	
UEERE0016	Install, configure and commission LV grid-connected photovoltaic power systems*	40	
UEERE0019	Maintain safety and tidiness of remote area power supply systems*	20	
UEERE0023	Work safely with remote area power supply systems*	20	
UEERE0035	Install ELV stand-alone photovoltaic power systems*	60	
UEERE0036	Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications*	20	
UEERE0037	Install, configure and commission LV micro-hydro systems rated up to 6.4 kW*	20	
UEERE0038	Install, configure and commission LV wind energy conversion systems rated up to 10 kW*	40	
UEERE0039	Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW*	20	
UEERE0045	Solve basic problems in micro-hydro systems*	20	
UEERE0046	Solve problems in stand-alone renewable energy (RE) systems*	60	
UEERE0047	Solve problems in wind energy conversion systems (WECS) rated up to 10 kW*	60	
UEERE4001	Install, maintain and fault find battery storage systems for grid-connected photovoltaic systems*	60	
UEERE5001	Design battery storage systems for grid-connected photovoltaic systems*	80	
Group C: Qualification elective units		Weighting Points	
UEEEL0050	Install and replace low voltage current transformer metering*	20	
UEERE0003	Assess energy loads and uses for energy efficiency in commercial facilities*	40	

UEERE0004	Assess energy loads and uses for energy efficiency in industrial properties and enterprises*	40
UEERE0005	Assess energy loads and uses for energy efficiency in residential, office and retail premises*	40
UEERE0011	Design grid-connected photovoltaic power supply systems*	60
UEERE0014	Develop strategies to address sustainability issues for electrical installations*	20
UEERE0027	Coordinate maintenance of renewable energy (RE) apparatus and systems*	20

UEE40620 - Certificate IV in Electrotechnology - Systems Electrician (Release 1)

Packaging Rules

A total of **440 weighting points** comprising:

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

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

Choose a total of 320 **weighting points** elective units from the list below, of which between 0 and 100 **weighting points** can be taken from Group A; between 0 and 100 **weighting points** can be taken from Group B; and between 220 and 320 **weighting points** can be taken from Group C (**or all 320 elective weighting points** can be taken from Group C).

Up to 100 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
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
UEECD0027	Participate in development and follow a personal competency development plan	20
UEERE0015	Implement and monitor energy sector environmental and sustainable policies and procedures	20
Group A: Imported and common elective units		Weighting Points
BSBCUS201	Deliver a service to customers	20
CPCCWHS1001	Prepare to work safely in the construction industry	10
HLTAID001	Provide cardiopulmonary resuscitation	10
ICTICT203	Operate application software packages	20
UEECD0011	Comply with scheduled and preventative maintenance program processes	20

UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	20
UEECO0002	Maintain documentation	20
UEECO0015	Provide quotations for installation or service jobs	20
UEECO0017	Source and purchase material/parts for installation or service jobs	20
Group B: General elective units		Weighting Points
UEEAS0007	Assemble, mount and connect control gear and switchgear*	40
UEEAS0008	Fabricate and assemble bus bars*	40
UEEAS0009	Mount and wire control panel equipment*	40
UEECD0028	Plan an integrated cabling installation system*	40
UEECD0050	Use and maintain the integrity of a portable gas detection device*	20
UEECS0033	Use engineering applications software on personal computers	40
UEEDV0005	Install and maintain cabling for multiple access to telecommunication services*	80
UEEDV0008	Install, modify and verify coaxial and structured communication copper cabling*	40
UEEEC0003	Assemble and set up basic security systems*	80
UEEEC0060	Repairs basic electronic apparatus faults by replacement of components*	40
UEEEC0075	Troubleshoot single phase input d.c power supplies*	40
UEEEL0004	Carry out basic repairs to electrical components and equipment*	40
UEEEL0013	Install, set up and commission interval metering*	20
UEEEL0016	Provide advice on effective and energy efficient lighting products	20
UEEEL0017	Repair and maintain mechanical components of electrical machines*	40
UEEEL0022	Supply effective and efficient lighting products for domestic and small commercial applications*	40
UEEEL0026	Align and install traction lift equipment*	20
UEEEL0033	Conduct electrical tests on LV electrical machines*	40
UEEEL0034	Conduct mechanical tests on electrical machines and components*	40
UEEEL0045	Diagnose and rectify faults in traction lift systems*	80
UEEEL0046	Find and repair faults in LV d.c. electrical apparatus and circuits*	60
UEEEL0048	Install and maintain emergency lighting systems*	40
UEEEL0049	Install and maintain emergency safety systems*	60
UEEEL0052	Maintain and service traction lift systems and equipment*	40
UEEEL0053	Maintain operation of electrical marine equipment and systems*	60

UEEEL0054	Maintain operation of electrical mining equipment and systems*	60
UEEEL0055	Overhaul and repair major switchgear and control gear*	60
UEEEL0056	Place and connect electrical coils*	40
UEEEL0061	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect*	20
UEEEL0066	Rewind LV direct current machines*	60
UEEEL0067	Rewind single phase machines*	40
UEEEL0068	Rewind three phase low voltage induction machines*	60
UEEEL0069	Select and arrange equipment for special LV electrical installations*	60
UEEEL0074	Wind electrical coils*	40
UEEHA0001	Conduct detailed inspection of electrical installations for hazardous areas*	40
UEEHA0002	Conduct visual and close inspection of electrical installations for hazardous areas*	40
UEEHA0003	Determine the explosion-protection requirements to meet a specified classified hazardous area*	40
UEEHA0004	Enter a classified hazardous area to undertake work related to electrical equipment	40
UEEHA0005	Install explosion-protected equipment and associated apparatus and wiring systems*	60
UEEHA0006	Maintain equipment associated with hazardous areas*	60
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices*	20
UEEIC0011	Develop electrical integrated systems*	20
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEEIC0024	Plan the electrical installation of integrated systems*	20
UEEIC0038	Solve problems in density/level measurement components and systems*	40
UEEIC0039	Solve problems in flow measurement components and systems*	40
UEEIC0041	Solve problems in pressure measurement components and systems*	40
UEEIC0043	Solve problems in temperature measurement components and systems*	40
UEEIC0047	Use instrumentation drawings, specifications, standards and equipment manuals*	40
UEERA0035	Establish the basic operating conditions of air conditioning systems*	20
UEERA0036	Establish the basic operating conditions of vapour compression systems*	60
UEERA0059	Prepare and connect refrigerant tubing and fittings*	40

UEERE0016	Install, configure and commission LV grid-connected photovoltaic power systems*	40
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems*	20
UEERS0001	Assemble and wire internal electrical rail signalling equipment*	30
UEERS0011	Install and maintain rail track circuit leads and bonds*	30
UEERS0017	Repair rail signalling power and control cables*	40
UEERS0019	Test copper rail signalling cables*	20
UETTDRIS43	Perform low voltage field switching operation to a given schedule*	50
UETTDRIS44	Perform HV field switching operation to a given schedule*	40
UETTDRIS47	Sample, test, filter and reinstate insulating oil*	40
UETTDRIS67	Solve problems in energy supply network equipment*	80
UETTDRIS68	Solve problems in energy supply network protection equipment and systems*	40
UETTDRSB23	Install and maintain substation direct current systems*	30
UETTDRSB29	Maintain capacitor bank equipment for voltage regulation*	40
UETTDRSB39	Perform power system substation switching operation to a given schedule*	50
Group C: General elective units		**Weighting Points**
UEECD0063	Write work activity reports	20
UEECO0001	Estimate electrotechnology projects	40
UEEEL0007	Develop detailed electrical drawings*	60
UEEEL0027	Carry out low voltage electrical field testing and report findings*	60
UEEEL0029	Conduct compliance inspection of LV electrical installations with demand exceeding 100 A per phase*	40
UEEEL0030	Conduct compliance inspection of single phase LV electrical installations*	60
UEEEL0031	Conduct compliance inspection of special LV electrical installations*	60
UEEEL0032	Conduct electrical tests on HV electrical machines*	60
UEEEL0036	Design effective and efficient lighting for residential and commercial buildings*	20
UEEEL0040	Develop compliance policies and plans to conduct an electrical contracting business*	80
UEEEL0044	Diagnose and rectify faults in complex lift systems*	40
UEEEL0050	Install and replace low voltage current transformer metering*	20
UEEEL0051	Investigate and report on electrical incidents and causes*	60
UEEEL0057	Plan electrical installations with a low voltage demand up to 400 A per phase*	40

UEEEL0059	Plan low voltage switchboard and control panel layouts*	40
UEEEL0060	Prepare quotations for the supply of effective and efficient lighting products for lighting projects*	20
UEEEL0063	Provide photometric data for illumination system design	60
UEEEL0064	Rewind HV three phase induction machines rated for voltages above 3.3 kV*	60
UEEEL0065	Rewind HV three phase induction machines rated for voltages to 3.3 kV*	60
UEEEL0070	Select effective and efficient light sources and luminaries for given locations and designs*	60
UEEEL0071	Select low voltage power factor correction equipment*	40
UEEEL0072	Set up and place LV electrical apparatus and associated circuits into service*	40
UEEEL0073	Verify compliance and functionality of special LV electrical installations*	40
UEEIC0009	Develop an electrical integrated system interface for access through a touch screen*	20
UEEIC0012	Develop structured programs to control external devices*	40
UEEIC0014	Develop, enter and verify programs in supervisory control and data acquisition systems*	60
UEEIC0015	Develop, enter and verify word and analogue control programs for programmable logic controllers*	60
UEEIC0018	Diagnose and rectify faults in digital controls systems*	60
UEEIC0020	Fault find and repair analogue circuits and components in electronic control systems*	60
UEEIC0026	Provide solutions to fluid circuit operations*	60
UEEIC0027	Provide solutions to pneumatic-hydraulic system operations*	80
UEEIC0028	Provide solutions to problems in industrial control systems*	60
UEEIC0034	Set up industrial field control devices*	60
UEEIC0040	Solve problems in polyphase electronic power control circuits*	60
UEEIC0042	Solve problems in single phase electronic power control circuits*	60
UEERE0003	Assess energy loads and uses for energy efficiency in commercial facilities*	40
UEERE0004	Assess energy loads and uses for energy efficiency in industrial properties and enterprises*	40
UEERE0005	Assess energy loads and uses for energy efficiency in residential, office and retail premises*	40
UEERE0011	Design grid-connected photovoltaic power supply systems*	60

UEERE0014	Develop strategies to address sustainability issues for electrical installations*	20

UEE41620 - Certificate IV in Renewable Energy (Release 1)

Packaging Rules

A total of **1280 weighting points** comprising:

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

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

Choose a total of 540 **weighting points** elective units from the list below, of which between 0 and 160 **weighting points** can be taken from Group A; between 0 and 320 **weighting points** can be taken from Group B; and between 220 and 380 **weighting points** can be taken from Group C.

Up to 220 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 that 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
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0016	Document and apply measures to control WHS risks associated with electrotechnology work*	20
UEECD0019	Fabricate, assemble and dismantle utilities industry components*	40
UEECD0020	Fix and secure electrotechnology equipment*	20
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
UEECD0025	Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits*	40
UEECD0027	Participate in development and follow a personal competency development plan	20
UEECD0043	Solve problems in direct current circuits*	80

UEECD0045	Solve problems in multiple path extra-low voltage (ELV) a.c. circuits*	40
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications*	40
UEEEL0019	Solve problems in direct current (d.c.) machines*	30
UEEEL0021	Solve problems in magnetic and electromagnetic devices*	30
UEERE0015	Implement and monitor energy sector environmental and sustainable policies and procedures	20
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems*	20
UEERE0025	Carry out basic repairs to renewable energy (RE) apparatus*	80
UEERE0034	Diagnose and rectify faults in renewable energy (RE) control systems*	60
UEERE0046	Solve problems in stand-alone renewable energy (RE) systems*	60
UEERE0048	Verify compliance and functionality of an extra-low voltage renewable energy installation*	40
Group A: Imported and common elective units.		**Weighting Points**
BSBCUS201	Deliver a service to customers	20
CPCCWHS1001	Prepare to work safely in the construction industry	10
HLTAID001	Provide cardiopulmonary resuscitation	10
ICTICT203	Operate application software packages	20
UEECD0011	Comply with scheduled and preventative maintenance program processes	20
UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	20
UEECO0002	Maintain documentation	20
UEECO0015	Provide quotations for installation or service jobs	20
UEECO0017	Source and purchase material/parts for installation or service jobs	20
Group B: Qualification elective units.		**Weighting Points**
UEECD0030	Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software*	60
UEECD0031	Prepare engineering drawings using manual drafting and CAD for electrotechnology applications*	60
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEERE0017	Maintain and repair facilities associated with remote area essential service operations*	120
UEERE0024	Attend to breakdowns in remote area power supplies (RAPS)*	20
UEERE0026	Conduct checks in the demand side use of remote area power supplies (RAPS)*	40
UEERE0035	Install ELV stand-alone photovoltaic power systems*	60

UEERE0036	Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications*	20
UEERE0039	Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW*	20
UEERE0041	Maintain operation of remote area power generation plant*	120
UEERE0043	Plan periodic maintenance schedules of remote area power supplies (RAPS)*	40
UEERE0045	Solve basic problems in micro-hydro systems*	20
UEERE0047	Solve problems in wind energy conversion systems (WECS) rated up to 10 kW*	60
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
UEERL0003	Conduct in-service safety testing of electrical cord connected equipment and cord assemblies*	20
Group C: Qualification elective units.		Weighting Points
UEECD0032	Produce detailed electrotechnology/utilities drawings using CAD equipment and software*	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
UEEIC0014	Develop, enter and verify programs in supervisory control and data acquisition systems*	60
UEEIC0015	Develop, enter and verify word and analogue control programs for programmable logic controllers*	60
UEERE0011	Design grid-connected photovoltaic power supply systems*	60
UEERE0027	Coordinate maintenance of renewable energy (RE) apparatus and systems*	20

UEE42020 - Certificate IV in Electrical - Photovoltaic systems (Release 1)

Packaging Rules

A total of **440 weighting points** comprising:

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

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

Choose a total of 180 **weighting points** elective units from the list below, of which between 0 and 90 **weighting points** can be taken from Group A; between 0 and 90 **weighting points** can be taken from Group B; and between 90 and 180 **weighting points** can be taken from Group C (or all electives units of 180 **weighting points** can be taken from Group C).

Up to 90 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 that 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
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
UEECD0027	Participate in development and follow a personal competency development plan	20
UEEEL0013	Install, set up and commission interval metering*	20
UEERE0011	Design grid-connected photovoltaic power supply systems*	60
UEERE0015	Implement and monitor energy sector environmental and sustainable policies and procedures	20
UEERE0016	Install, configure and commission LV grid-connected photovoltaic power systems*	40
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems*	20
Group A: Imported and common elective units		Weighting Points
BSBCUS201	Deliver a service to customers	20

CPCCWHS1001	Prepare to work safely in the construction industry	10
HLTAID001	Provide cardiopulmonary resuscitation	10
ICTICT203	Operate application software packages	20
UEECD0011	Comply with scheduled and preventative maintenance program processes	20
UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	20
UEECO0002	Maintain documentation	20
UEECO0015	Provide quotations for installation or service jobs	20
UEECO0017	Source and purchase material/parts for installation or service jobs	20
Group B: Qualification elective units		**Weighting Points**
UEECD0030	Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software*	60
UEECD0031	Prepare engineering drawings using manual drafting and CAD for electrotechnology applications*	60
UEECS0033	Use engineering applications software on personal computers	40
UEEEL0069	Select and arrange equipment for special LV electrical installations*	60
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices*	20
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEERE0025	Carry out basic repairs to renewable energy (RE) apparatus*	80
UEERE0034	Diagnose and rectify faults in renewable energy (RE) control systems*	60
UEERE0035	Install ELV stand-alone photovoltaic power systems*	60
UEERE0036	Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications*	20
UEERE0037	Install, configure and commission LV micro-hydro systems rated up to 6.4 kW*	20
UEERE0038	Install, configure and commission LV wind energy conversion systems rated up to 10 kW*	40
UEERE0039	Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW*	20
UEERE0045	Solve basic problems in micro-hydro systems*	20
UEERE0046	Solve problems in stand-alone renewable energy (RE) systems*	60
UEERE0047	Solve problems in wind energy conversion systems (WECS) rated up to 10 kW*	60
UEERE4001	Install, maintain and fault find battery storage systems for grid-connected photovoltaic systems*	60
Group C: Qualification elective units		**Weighting Points**

UEECD0032	Produce detailed electrotechnology/utilities drawings using CAD equipment and software*	60
UEECO0001	Estimate electrotechnology projects	40
UEECO0013	Prepare specifications for the supply of materials and equipment for electrotechnology projects	40
UEEEL0007	Develop detailed electrical drawings*	60
UEEEL0029	Conduct compliance inspection of LV electrical installations with demand exceeding 100 A per phase*	40
UEEEL0030	Conduct compliance inspection of single phase LV electrical installations*	60
UEEEL0031	Conduct compliance inspection of special LV electrical installations*	60
UEEEL0040	Develop compliance policies and plans to conduct an electrical contracting business*	80
UEEEL0050	Install and replace low voltage current transformer metering*	20
UEEEL0051	Investigate and report on electrical incidents and causes*	60
UEEEL0057	Plan electrical installations with a low voltage demand up to 400 A per phase*	40
UEEEL0073	Verify compliance and functionality of special LV electrical installations*	40
UEEIC0014	Develop, enter and verify programs in supervisory control and data acquisition systems*	60
UEEIC0015	Develop, enter and verify word and analogue control programs for programmable logic controllers*	60
UEERE0014	Develop strategies to address sustainability issues for electrical installations*	20

UEE50511 - Diploma of Electronics and Communications Engineering
(Release 4)

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 1460 points in accordance with the Elective Competency Standard Units table below.

Core Competency Standard Units		Weighting Points
All Core competency standard units to be achieved		
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
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
UEENEEH167A	Commission electronics and communications systems	20
UEENEEH168A	Modify - redesign of electronics and communications systems	20
UEENEEK145A	Implement and monitor energy sector environmental and sustainable policies and procedures	20
Total points in core		140
Elective Competency Standard Units Complete Elective units to achieve a total of weighting of 1460 points from the following groups:		
Group	Minimum points	Maximum points
A	Imported and Common Elective Units Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 5. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	0	270

B	Qualification Elective Units	0	920
C	Qualification Elective Units	260	580
D	Qualification Elective Units	280	1200

Group A Imported and Common Elective Units You may complete units to a maximum weighting of 270		Weighting Points
BSBINM501A	Manage an information or knowledge management system	50
BSBINN502A	Build and sustain an innovative work environment	50
BSBMGT502B	Manage people performance	70
BSBMGT516C	Facilitate continuous improvement	60
BSBWOR502B	Ensure team effectiveness	60
ICTTEN3056A	Install telecommunications network equipment	40
MSS402001A	Apply competitive systems and practices	20
MSS402020A	Apply quick changeover procedures	20
MSS402021A	Apply Just in Time procedures	20
MSS402040A	Apply 5S procedures	20
MSS402080A	Undertake root cause analysis	20
MSS402081A	Contribute to the application of a proactive maintenance strategy	20
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
UEENEEC010B	Deliver a service to customers	20
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEEE009B	Comply with scheduled and preventative maintenance program processes	20
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 5. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework	Up to 270 points

Group B Qualification Elective Units You may complete units to a maximum weighting of 920		Weighting Points
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
UEENEEB101A	Operate and maintain amateur radio communication stations	40
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
UEENEED130A	Select, install, configure and test multimedia components	40
UEENEED143A	Install and configure a client computer operating system and software	40
UEENEED146A	Set up and configure basic local area network (LAN)	80
UEENEED153A	Set up, configure and test biometric devices	40
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
UEENEEE108A	Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) 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
UEENEEE179A	Identify and select components, accessories and materials for energy sector work activities	20
UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services	120
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	40
UEENEEF109A	Install and connect data and voice communication equipment	40

UEENEEF110A	Select and arrange data and voice equipment for local area networks	40
UEENEEF111A	Test, report and rectify faults in data and voice installations	40
UEENEEF114A	Set up and configure basic data communication systems	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
UEENEEH138A	Fault find and repair complex power supplies	40
UEENEEH139A	Troubleshoot basic amplifier circuits	40
UEENEEH142A	Solve oscillator problems	40
UEENEEH146A	Solve fundamental electronic communications system problems	40

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
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
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
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
UEENEEH187A	Solve problems in electronic musical equipment circuits	40
UEENEEI101A	Use instrumentation drawings, specification, standards and equipment manuals	40
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20
UEENEEI117A	Calibrate, adjust and test measuring instruments	40
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
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
Group C Qualification Elective Units Complete units to a minimum weighting of 260 and a maximum weighting of 580		Weighting Points
UEENEEC004B	Prepare specifications for the supply of materials and equipment for electrotechnology projects	40
UEENEEC005B	Estimate electrotechnology projects	40
UEENEED103A	Evaluate and modify object oriented code programs	40
UEENEED110A	Set up, create and implement content for a web server	120
UEENEED154A	Analyse and implement biometric measuring techniques and applications	120

UEENEEE110A	Develop and implement energy sector maintenance programs	60
UEENEEE114A	Supervise and coordinate energy sector work activities	40
UEENEEE118A	Establish, maintain and evaluate energy sector OHS systems	60
UEENEEE124A	Compile and produce an energy sector detailed report	60
UEENEEH129A	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
UEENEEH140A	Fault find and repair sonar apparatus and systems	120
UEENEEH153A	Program and test large security systems	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
UEENEEH186A	Commission satellite and microwave communication systems	40
UEENEEI155A	Develop structured programs to control external devices	40
UEENEEI157A	Configure and maintain industrial control system networks	60
Group D Qualification Elective Units

You must complete units to a minimum weighting of 280 and to a maximum of 1200 points | | Weighting Points |
UEENEEC006B	Prepare tender submissions for electrotechnology projects	60
UEENEED147A	Develop energy sector directory services	80
UEENEED150A	Develop industrial control programs for microcomputer equipped devices	60
UEENEED151A	Provide programming solution for computer systems engineering problems	60

UEENEED155A	Develop and validate biometric equipment/systems installation	120
UEENEEE015B	Develop design briefs for electrotechnology projects	40
UEENEEE125A	Provide engineering solutions for problems in complex multiple path circuits	60
UEENEEE126A	Provide solutions to basic engineering computational problems	60
UEENEEE160A	Provide engineering solutions for uses of materials and thermodynamic effects	80
UEENEEE163A	Analyse materials for suitability in electrical equipment	80
UEENEEE072B	Write specifications for electronics and communications engineering projects	40
UEENEEH145A	Develop engineering solutions to analogue electronic problems	80
UEENEEH148A	Design and develop advanced digital systems	40
UEENEEH149A	Develop engineering solutions to audio electronic problems	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
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
UEENEEH188A	Design and develop electronics - computer systems projects	40
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
UEENEEI153A	Design and configure Human-Machine Interface (HMI) networks	60
UEENEEI156A	Develop and test code for microcontroller devices	60
UEENEEE161A	Analyse static and dynamic parameters of electrical equipment	80
UEENEED111A	Develop, implement and test object oriented code	140
UEENEEH189A	Provide Gate Array solutions for complex electronics systems	60

UEE50420 - Diploma of Electrical Engineering (Release 1)

Packaging Rules

A total of **760 weighting points** comprising:

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

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

Choose a total of 600 **weighting points** elective units from the list below, of which between 0 and 270 **weighting points** can be taken from Group A; between 0 and 100 **weighting points** can be taken from Group B; between 0 and 240 **weighting points** can be taken from Group C; and between 260 and 600 **weighting points** can be taken from Group D (or all elective units between 0 and 600 **weighting points** must can be taken from Group D).

Up to 270 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
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
UEECD0027	Participate in development and follow a personal competency development plan	20
UEECD0060	Write specifications for electrotechnology engineering 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
BSBCUS201	Deliver a service to customers	20
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
ICTICT203	Operate application software packages	20

UEECD0011	Comply with scheduled and preventative maintenance program processes	20
UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	20
UEECO0002	Maintain documentation	20
UEECO0015	Provide quotations for installation or service jobs	20
UEECO0017	Source and purchase material/parts for installation or service jobs	20
Group B: General elective units		**Weighting Points**
UEEAS0007	Assemble, mount and connect control gear and switchgear*	40
UEEAS0008	Fabricate and assemble bus bars*	40
UEEAS0009	Mount and wire control panel equipment*	40
UEECD0028	Plan an integrated cabling installation system*	40
UEECS0033	Use engineering applications software on personal computers	40
UEEDV0005	Install and maintain cabling for multiple access to telecommunication services*	80
UEEDV0008	Install, modify and verify coaxial and structured communication copper cabling*	40
UEEEC0003	Assemble and set up basic security systems*	80
UEEEC0060	Repairs basic electronic apparatus faults by replacement of components*	40
UEEEC0075	Troubleshoot single phase input d.c power supplies*	40
UEEEL0004	Carry out basic repairs to electrical components and equipment*	40
UEEEL0013	Install, set up and commission interval metering*	20
UEEEL0016	Provide advice on effective and energy efficient lighting products	20
UEEEL0017	Repair and maintain mechanical components of electrical machines*	40
UEEEL0022	Supply effective and efficient lighting products for domestic and small commercial applications*	40
UEEEL0026	Align and install traction lift equipment*	20
UEEEL0033	Conduct electrical tests on LV electrical machines*	40
UEEEL0034	Conduct mechanical tests on electrical machines and components*	40
UEEEL0045	Diagnose and rectify faults in traction lift systems*	80
UEEEL0046	Find and repair faults in LV d.c. electrical apparatus and circuits*	60
UEEEL0048	Install and maintain emergency lighting systems*	40
UEEEL0049	Install and maintain emergency safety systems*	60
UEEEL0052	Maintain and service traction lift systems and equipment*	40
UEEEL0053	Maintain operation of electrical marine equipment and systems*	60

UEEEL0054	Maintain operation of electrical mining equipment and systems*	60
UEEEL0055	Overhaul and repair major switchgear and control gear*	60
UEEEL0056	Place and connect electrical coils*	40
UEEEL0061	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect*	20
UEEEL0066	Rewind LV direct current machines*	60
UEEEL0067	Rewind single phase machines*	40
UEEEL0068	Rewind three phase low voltage induction machines*	60
UEEEL0069	Select and arrange equipment for special LV electrical installations*	60
UEEEL0074	Wind electrical coils*	40
UEEHA0001	Conduct detailed inspection of electrical installations for hazardous areas*	40
UEEHA0003	Determine the explosion-protection requirements to meet a specified classified hazardous area*	40
UEEHA0004	Enter a classified hazardous area to undertake work related to electrical equipment	40
UEEHA0005	Install explosion-protected equipment and associated apparatus and wiring systems*	60
UEEHA0006	Maintain equipment associated with hazardous areas*	60
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices*	20
UEEIC0011	Develop electrical integrated systems*	20
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEEIC0024	Plan the electrical installation of integrated systems*	20
UEEIC0038	Solve problems in density/level measurement components and systems*	40
UEEIC0039	Solve problems in flow measurement components and systems*	40
UEEIC0041	Solve problems in pressure measurement components and systems*	40
UEEIC0043	Solve problems in temperature measurement components and systems*	40
UEEIC0047	Use instrumentation drawings, specifications, standards and equipment manuals*	40
UEERA0035	Establish the basic operating conditions of air conditioning systems*	20
UEERA0036	Establish the basic operating conditions of vapour compression systems*	60
UEERA0059	Prepare and connect refrigerant tubing and fittings*	40
UEERE0016	Install, configure and commission LV grid-connected photovoltaic power systems*	40

UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems*	20
UETTDRIS44	Perform HV field switching operation to a given schedule*	40
UETTDRIS67	Solve problems in energy supply network equipment*	80
UETTDRIS68	Solve problems in energy supply network protection equipment and systems*	40
Group C: General elective units		Weighting Points
UEECO0001	Estimate electrotechnology projects	40
UEEEL0007	Develop detailed electrical drawings*	60
UEEEL0027	Carry out low voltage electrical field testing and report findings*	60
UEEEL0029	Conduct compliance inspection of LV electrical installations with demand exceeding 100 A per phase*	40
UEEEL0030	Conduct compliance inspection of single phase LV electrical installations*	60
UEEEL0031	Conduct compliance inspection of special LV electrical installations*	60
UEEEL0032	Conduct electrical tests on HV electrical machines*	60
UEEEL0036	Design effective and efficient lighting for residential and commercial buildings*	20
UEEEL0040	Develop compliance policies and plans to conduct an electrical contracting business*	80
UEEEL0044	Diagnose and rectify faults in complex lift systems*	40
UEEEL0050	Install and replace low voltage current transformer metering*	20
UEEEL0051	Investigate and report on electrical incidents and causes*	60
UEEEL0057	Plan electrical installations with a low voltage demand up to 400 A per phase*	40
UEEEL0059	Plan low voltage switchboard and control panel layouts*	40
UEEEL0060	Prepare quotations for the supply of effective and efficient lighting products for lighting projects*	20
UEEEL0063	Provide photometric data for illumination system design	60
UEEEL0064	Rewind HV three phase induction machines rated for voltages above 3.3 kV*	60
UEEEL0065	Rewind HV three phase induction machines rated for voltages to 3.3 kV*	60
UEEEL0070	Select effective and efficient light sources and luminaries for given locations and designs*	60
UEEEL0071	Select low voltage power factor correction equipment*	40
UEEEL0072	Set up and place LV electrical apparatus and associated circuits into service*	40

UEEEL0073	Verify compliance and functionality of special LV electrical installations*	40
UEEIC0009	Develop an electrical integrated system interface for access through a touch screen*	20
UEEIC0012	Develop structured programs to control external devices*	40
UEEIC0014	Develop, enter and verify programs in supervisory control and data acquisition systems*	60
UEEIC0015	Develop, enter and verify word and analogue control programs for programmable logic controllers*	60
UEEIC0018	Diagnose and rectify faults in digital controls systems*	60
UEEIC0020	Fault find and repair analogue circuits and components in electronic control systems*	60
UEEIC0026	Provide solutions to fluid circuit operations*	60
UEEIC0027	Provide solutions to pneumatic-hydraulic system operations*	80
UEEIC0028	Provide solutions to problems in industrial control systems*	60
UEEIC0034	Set up industrial field control devices*	60
UEEIC0040	Solve problems in polyphase electronic power control circuits*	60
UEEIC0042	Solve problems in single phase electronic power control circuits*	60
UEERE0003	Assess energy loads and uses for energy efficiency in commercial facilities*	40
UEERE0004	Assess energy loads and uses for energy efficiency in industrial properties and enterprises*	40
UEERE0005	Assess energy loads and uses for energy efficiency in residential, office and retail premises*	40
UEERE0011	Design grid-connected photovoltaic power supply systems*	60
UEERE0014	Develop strategies to address sustainability issues for electrical installations*	20
Group D: General elective units		Weighting Points
UEECD0013	Develop and implement energy sector maintenance programs	60
UEECD0036	Provide engineering solutions for problems in complex multiple path circuits	60
UEECD0039	Provide solutions to basic engineering computational problems*	60
UEECO0014	Prepare tender submissions for electrotechnology projects*	60
UEEEL0006	Develop detailed and complex drawings for electrical systems using CAD systems*	60
UEEEL0011	Evaluate performance of low voltage electrical apparatus*	40

UEEEL0035	Design effective and efficient lighting for public, open and sports areas*	20
UEEEL0037	Design electrical installations with a low voltage demand greater than 400 A per phase*	40
UEEEL0062	Provide engineering solutions to problems in complex polyphase power circuits*	60
UEEIC0001	Analyse complex electronic circuits controlling fluids	80
UEEIC0005	Configure and maintain industrial control system networks*	60
UEEIC0010	Develop and test code for microcontroller devices	60
UEEIC0016	Diagnose and rectify faults in a.c. motor drive systems*	60
UEEIC0017	Diagnose and rectify faults in d.c. motor drive systems*	60
UEEIC0019	Diagnose and rectify faults in servo drive systems*	60
UEERE0029	Design micro-hydro systems rated to 6.4 kW*	60
UEERE0030	Design renewable energy (RE) heating systems*	120
UEERE0032	Design wind energy conversion systems (WECS) rated to 10 kW*	60
UETTDRIS69	Diagnose and rectify faults in energy supply apparatus*	60
UETTDRIS70	Diagnose and rectify faults in electrical energy distribution systems*	60
UETTDRIS71	Diagnose and rectify faults in electrical energy supply transmission systems*	60
UETTDRIS72	Diagnose and rectify faults in distributed generation systems*	60

UEE50720 - Diploma of Renewable Energy Engineering (Release 1)

Packaging Rules

A total of **760 weighting points** comprising:

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

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

Choose a total of 520 **weighting points** elective units from the list below, of which between 0 and 260 **weighting points** can be taken from Group A; between 0 and 100 **weighting points** must be taken from Group B; between 0 and 240 **weighting points** must be taken from Group C; and between 260 and 340 **weighting points** must be taken from Group D.

Up to 260 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 that 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
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
UEECD0027	Participate in development and follow a personal competency development plan	20
UEECD0062	Write specifications for renewable energy engineering projects	40
UEERE0013	Develop strategies to address environmental and sustainability issues in the energy sector	20
UEERE0025	Carry out basic repairs to renewable energy (RE) apparatus*	80
Group A: Imported and common elective units		**Weighting Points**
BSBCUS201	Deliver a service to customers	20
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
ICTICT203	Operate application software packages	20
UEECD0011	Comply with scheduled and preventative maintenance program processes	20
UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	20
UEECO0002	Maintain documentation	20
UEECO0015	Provide quotations for installation or service jobs	20
UEECO0017	Source and purchase material/parts for installation or service jobs	20
Group B: Qualification elective units		Weighting Points
UEECS0033	Use engineering applications software on personal computers	40
UEEEC0060	Repairs basic electronic apparatus faults by replacement of components*	40
UEEEC0075	Troubleshoot single phase input d.c power supplies*	40
UEEEL0013	Install, set up and commission interval metering*	20
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices*	20
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEERE0016	Install, configure and commission LV grid-connected photovoltaic power systems*	40
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems*	20
UEERE0034	Diagnose and rectify faults in renewable energy (RE) control systems*	60
UEERE0035	Install ELV stand-alone photovoltaic power systems*	60
UEERE0036	Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications*	20
UEERE0037	Install, configure and commission LV micro-hydro systems rated up to 6.4 kW*	20
UEERE0038	Install, configure and commission LV wind energy conversion systems rated up to 10 kW*	40
UEERE0039	Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW*	20
UEERE0045	Solve basic problems in micro-hydro systems*	20
UEERE0046	Solve problems in stand-alone renewable energy (RE) systems*	60
UEERE0047	Solve problems in wind energy conversion systems (WECS) rated up to 10 kW*	60
UEERE5001	Design battery storage systems for grid-connected photovoltaic systems*	80
Group C: Qualification elective units		Weighting Points

UEECO0001	Estimate electrotechnology projects	40
UEECO0013	Prepare specifications for the supply of materials and equipment for electrotechnology projects	40
UEEEL0040	Develop compliance policies and plans to conduct an electrical contracting business*	80
UEERE0003	Assess energy loads and uses for energy efficiency in commercial facilities*	40
UEERE0004	Assess energy loads and uses for energy efficiency in industrial properties and enterprises*	40
UEERE0005	Assess energy loads and uses for energy efficiency in residential, office and retail premises*	40
UEERE0011	Design grid-connected photovoltaic power supply systems*	60
UEERE0014	Develop strategies to address sustainability issues for electrical installations*	20
UEERE0015	Implement and monitor energy sector environmental and sustainable policies and procedures	20
Group D: Qualification elective units		Weighting Points
UEECO0014	Prepare tender submissions for electrotechnology projects*	60
UEEEL0011	Evaluate performance of low voltage electrical apparatus*	40
UEERE0029	Design micro-hydro systems rated to 6.4 kW*	60
UEERE0030	Design renewable energy (RE) heating systems*	120
UEERE0032	Design wind energy conversion systems (WECS) rated to 10 kW*	60

UEE63011 - Advanced Diploma of Electrical Systems Engineering (Release 4)

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 580 points in accordance with the Elective Competency Standard Units table below.

Note: UEENEEG199A - Those holding an Unrestricted Electrical Fitter Licence or equivalent issued in an Australian State or Territory meet the requirements of this unit and its pre-requisite requirements.

Core Competency Standard Units		Weighting Points
All Core competency standard units to be achieved		
UEENEED104A	Use engineering applications software on personal computers	40
UEENEEE006B	Apply methods to maintain currency of industry developments	20
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	120
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

UEENEEE125A	Provide engineering solutions for problems in complex multiple path circuits	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
UEENEEG102A	Solve problems in low voltage a.c. circuits	80
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits	40
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	40
UEENEEG109A	Develop and connect electrical control circuits	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
UEENEEG199A	Conduct compliance and functional verification of electrical apparatus and existing circuits	40
UEENEEK132A	Develop strategies to address environmental and sustainability issues in the energy sector	20
Total points in core		1580

Elective Competency Standard Units			
Complete Elective units to achieve a total of weighting of 580 points from the following groups:			
Group		Minimum points	Maximum points
A	Imported and Common Elective Units Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 6. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	0	220
B	Qualification Elective Units	0	160
C	Qualification Elective Units	0	160
D	Qualification Elective Units	0	160

E	Qualification Elective Units	200	580
	You may select the majority of your elective units from this Group		

Group A Imported and Common Electives Units		Weighting Points
You may complete units to a maximum weighting of 220		
BSBMGT502B	Manage people performance	70
BSBINM501A	Manage an information or knowledge management system	50
BSBMGT516C	Facilitate continuous improvement	60
BSBINN502A	Build and sustain an innovative work environment	50
BSBWOR502B	Ensure team effectiveness	60
	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 6. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework	Up to 220 points

Group B Qualification Elective Units		Weighting Points
You may complete units to a maximum weighting of 160		
UEENEEA110A	Assemble, mount and connect control gear and switchgear	40
UEENEEA112A	Fabricate and assemble bus bars	40
UEENEEA113A	Mount and wire control panel equipment	40
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations	60
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
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
UEENEEG129A	Overhaul and repair major switchgear and controlgear	60
UEENEEG150A	Wind electrical coils	40
UEENEEG151A	Place and connect electrical coils	40

UEENEEG152A	Rewind single phase machines	40
UEENEEG153A	Rewind three phase low voltage induction machines	60
UEENEEG154A	Rewind LV direct current machines	60
UEENEEG157A	Conduct electrical tests on LV electrical machines	40
UEENEEG159A	Conduct mechanical tests on electrical machines and components	40
UEENEEG164A	Repair and maintain mechanical components of electrical machines	40
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	20
UEENEEG171A	Install, set up and commission interval metering	20
UEENEEG181A	Provide advice on effective and energy efficient lighting products	20
UEENEEG182A	Supply effective and efficient lighting products for domestic and small commercial applications	40
UEENEEG183A	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect	20
UEENEEG189A	Install and maintain emergency lighting systems	40
UEENEEH102A	Repairs basic electronic apparatus faults by replacement of components	40
UEENEEH111A	Troubleshoot single phase input d.c. power supplies	40
UEENEEH150A	Assemble and set up basic security systems	80
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
UEENEEI116A	Assemble, enter and verify operating instructions in microprocessor equipped devices	20
UEENEEI138A	Provide solutions to extra low voltage (ELV) electro-pneumatic control systems and drives	60
UEENEEI140A	Plan the electrical installation of integrated systems	20
UEENEEI141A	Develop electrical integrated systems	20
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
UEENEEJ102A	Prepare and connect refrigerant tubing and fittings	30
UEENEEJ103A	Establish the basic operating conditions of vapour compression systems	60

UEENEEJ104A	Establish the basic operating conditions of air conditioning systems	20
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
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
UEENEEM038A	Conduct testing of hazardous areas installations coal mining	40
UEENEEM080A	Report on the integrity of explosion-protected equipment in a hazardous area	20
UETTDRIS43A	Perform low voltage field switching operation to a given schedule.	50
UETTDRIS44A	Perform HV field switching operation to a given schedule	40
UETTDRIS47A	Sample, test, filter and reinstate insulating oil	40
UETTDRIS67A	Solve problems in energy supply network equipment	80
UETTDRIS68A	Solve problems in energy supply network protection equipment and systems	40
UETTDRSB29A	Maintain capacitor bank equipment for voltage regulation	40
UETTDRSB39A	Perform power system substation switching operation to a given schedule	50
Group C Qualification Elective Units You may complete units to a maximum weighting of 160		Weighting Points
UEENEEC005B	Estimate electrotechnology projects	40
UEENEEG125A	Plan electrical installations with a low voltage demand up to 400 A per phase	40
UEENEEG128A	Plan low voltage switchboard and control panel layouts	40
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
UEENEEG158A	Conduct electrical tests on HV electrical machines	60
UEENEEG162A	Set up and place LV electrical apparatus and associated circuits into service	40
UEENEEG168A	Diagnose and rectify faults in complex lift systems	40
UEENEEG172A	Investigate and report on electrical incidents and causes	60
UEENEEG175A	Develop compliance policies and plans to conduct a electrical contracting business	80
UEENEEG179A	Develop detailed electrical drawings	60
UEENEEG184A	Provide photometric data for illumination system design	60

UEENEEG185A	Select effective and efficient light sources and luminaries for given locations and designs	60
UEENEEG186A	Design effective and efficient lighting for residential and commercial buildings	20
UEENEEG188A	Prepare quotations for the supply of effective and efficient lighting products for lighting projects	20
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
UEENEEI125A	Provide solutions to fluid circuit operations	60
UEENEEI126A	Provide solutions to pneumatic-hydraulic system operations	80
UEENEEI139A	Diagnose and rectify faults in digital controls systems	60
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
UEENEEI148A	Solve problems in single phase electronic power control circuits	60
UEENEEI149A	Solve problems in polyphase electronic power control circuits	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
UEENEEI155A	Develop structured programs to control external devices	40
UEENEEM039A	Conduct testing of hazardous areas installations - gas atmospheres	40
UEENEEM042A	Conduct visual inspection of hazardous areas installations	40
UEENEEM044A	Conduct detailed inspection of hazardous areas installations gas atmospheres	40
UEENEEM047A	Develop and manage maintenance programs for hazardous areas electrical equipment coal mining	20
UEENEEM078A	Manage compliance of hazardous areas	20
Group D Qualification Elective Units You may complete units to a maximum weighting of 160		Weighting Points
UEENEEC006B	Prepare tender submissions for electrotechnology projects	60
UEENEEE110A	Develop and implement energy sector maintenance programs	60
UEENEEG127A	Design electrical installations with a low voltage demand greater than 400 A per phase	40

UEENEEG131A	Evaluate performance of low voltage electrical apparatus	40
UEENEEG180A	Develop detailed and complex drawings for electrical systems using CAD systems	60
UEENEEG187A	Design effective and efficient lighting for public, open and sports areas	20
UEENEEI127A	Analyse complex electronic circuits controlling fluids	80
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
UEENEEI156A	Develop and test code for microcontroller devices	60
UEENEEI157A	Configure and maintain industrial control system networks	60
UEENEEK129A	Design renewable energy (RE) heating systems	120
UEENEEK131A	Design wind energy conversion systems (WECS) rated to 10 kW	60
UEENEEK138A	Design micro-hydro systems rated to 6.4 kW	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
UEENEEM054A	Plan electrical installations for hazardous areas gas atmospheres	20
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
UETTDRIS69A	Diagnose and rectify faults in energy supply apparatus	60
UETTDRIS70A	Diagnose and rectify faults in electrical energy distribution systems	60
UETTDRIS71A	Diagnose and rectify faults in electrical energy supply transmission systems	60
UETTDRIS72A	Diagnose and rectify faults in distributed Generation systems	60
Group E Qualification Elective Units You must complete units to a minimum weighting of 200 You may select all your elective units from this Group		Weighting Points

UEENEEC007B	Manage contract variations	40
UEENEEE127A	Use advanced computational processes to provide solutions to energy sector engineering problems	80
UEENEEE128A	Develop engineering solutions to photonic system problems	80
UEENEEE160A	Provide engineering solutions for uses of materials and thermodynamic effects	80
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
UEENEEE078B	Contribute to risk management in electrotechnology systems	20
UEENEEG130A	Design switchboards rated for high fault levels (greater than 400 A)	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
UEENEEG160A	Evaluate performance of LV electrical machines	40
UEENEEG161A	Design and develop modifications to LV electrical machines	60
UEENEEH147A	Assess electronic apparatus compliance	60
UEENEEH184A	Modify digital signal processing (DSP) based sub-systems	80
UEENEEH185A	Design signal-conditioning subsystems	80
UEENEEH188A	Design and develop electronics - computer systems projects	40
UEENEEI123A	Design electronic control systems	60
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
UEENEEI153A	Design and configure Human-Machine Interface (HMI) networks	60
UEENEEI154A	Design and use advanced programming tools PC networks and HMI Interfacing	120
UEENEEK133A	Design hybrid renewable power systems	80
UEENEEK139A	Design stand-alone renewable energy (RE) systems	40
UEENEEK140A	Develop engineering solutions to renewable energy (RE) problems	60

UEENEEK146A	Design energy management controls for electrical installations in buildings	80
UEENEEK151A	Develop effective engineering strategies for energy reduction in buildings	60
UEENEEM052A	Classify hazardous areas gas atmospheres	40
UEENEEM053A	Classify hazardous areas dust atmospheres	40
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
UEENEEM075A	Design explosion-protected electrical systems Coal mining	20
UEENEEM079A	Design of gas detection systems	20
UETTDRIS73A	Develop engineering solutions for energy supply power transformer problems	60
UETTDRIS74A	Develop engineering solutions for energy supply system protection problems	60

UEE62011 - Advanced Diploma of Engineering Technology - Renewable Energy (Release 4)

Packaging Rules

Completion requirements

The requirements for granting this qualification will be met when competency is demonstrated and achieved for:

- All the Core competency standard units, defined in the Core Competency Standard Units table below and
- A combination of Elective competency standard units to achieve a total weighting of 900 points in accordance with the Elective Competency Standard Units table below.

Core Competency Standard Units		Weighting Points
All Core competency standard units to be achieved		
UEENEED104A	Use engineering applications software on personal computers	40
UEENEEE015B	Develop design briefs for electrotechnology projects	40
UEENEEE074B	Write specifications for renewable energy 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
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
UEENEEE108A	Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits	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 circuits	60
UEENEEE126A	Provide solutions to basic engineering computational problems	60

UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work	20
UEENEEG101A	Solve problems in electromagnetic devices and related circuits	60
UEENEEG102A	Solve problems in low voltage a.c. circuits	80
UEENEEG149A	Provide engineering solutions to problems in complex polyphase power circuits	60
UEENEEK121A	Manage renewable energy (RE) projects	40
UEENEEK122A	Plan renewable energy (RE) projects	60
UEENEEK123A	Carry out basic repairs to renewable energy apparatus	80
UEENEEK125A	Solve basic problems in photovoltaic energy apparatus and systems	20
UEENEEK127A	Diagnose and rectify faults in renewable energy control systems	60
UEENEEK128A	Solve problems in stand-alone renewable energy systems	60
UEENEEK132A	Develop strategies to address environmental and sustainability issues in the energy sector	20
Total points in core		1260

Elective Competency Standard Units

Complete Elective units to achieve a total of weighting of 900 points from the following groups:

Group		Minimum points	Maximum points
A	Imported and Common Elective Units Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 6. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points.	0	360
B	Qualification Elective Units	0	240
C	Qualification Elective Units	0	220
D	Qualification Elective Units	0	220
E	Qualification Elective Units You may select all your elective units from this Group	280	320

Group A – Imported and Common Elective Units You may complete units to a maximum weighting of 360		Weighting Points
BSBINM501A	Manage an information or knowledge management system	50
BSBINN502A	Build and sustain an innovative work environment	50
BSBMGT502B	Manage people performance	70
BSBMGT516C	Facilitate continuous improvement	60
BSBWOR502B	Ensure team effectiveness	60

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
UEENEEC010B	Deliver a service to customers	20
UEENEED101A	Use computer applications relevant to a workplace	20
UEENEEE020B	Provide basic instruction in the use of electrotechnology apparatus	20
	Imported units from other training packages and/or state accredited courses can be added to this group, but they must be selected from qualifications where the unit is first packaged at AQF level 6. If units have not being assigned a weighting by the relevant EE-Oz Industry Technical Advisory Committee, their weighting will be 10 points. Note: For further information see Application of the NQC Flexibility Formula, UEE11 Electrotechnology Training Package, Version 1, Volume 1 Qualification Framework	Up to 360 points
Group B – Qualification Elective Units You may complete units to a maximum weighting of 240		Weighting Points
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
UEENEEI150A	Develop, enter and verify discrete control programs for programmable controllers	60
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
UEENEEK117A	Maintain and repair facilities associated with remote area essential service operations	120
UEENEEK120A	Maintain operation of remote area power generation plant	120
UEENEEK124A	Solve basic problems in micro hydro systems	20
UEENEEK130A	Solve problems in wind energy conversion systems rated up to 10 kW	60
UEENEEK134A	Install ELV stand-alone photovoltaic power systems	60
UEENEEK137A	Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW	20
UEENEEK143A	Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications	20

UEENEEK149A	Verify compliance and functionality of a extra low voltage renewable energy installation	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
Group C – Qualification Elective Units You may complete units to a maximum weighting of 220		Weighting Points
UEENEEC004B	Prepare specifications for the supply of materials and equipment for electrotechnology projects	40
UEENEEC005B	Estimate electrotechnology projects	40
UEENEEE114A	Supervise and coordinate energy sector work activities	40
UEENEEE192A	Produce detailed electrotechnology /utilities drawings using computer aided design equipment and software	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
UEENEEK110A	Coordinate maintenance of renewable energy (RE) apparatus and systems	20
UEENEEK135A	Design grid connected photovoltaic power supply systems	60
Group D – Qualification Elective Units You may complete units to a maximum weighting of 220		Weighting Points
UEENEEG180A	Develop detailed and complex drawings for electrical systems using CAD systems	60
UEENEEK129A	Design renewable energy (RE) heating systems	120
UEENEEK131A	Design wind energy conversion systems (WECS) rated to 10 kW	60
UEENEEK138A	Design micro-hydro systems rated to 6.4 kW	60
Group E – Qualification Elective Units You must complete units to a minimum weighting of 280 to a maximum of 320		Weighting Points
UEENEEK133A	Design hybrid renewable power systems	80
UEENEEK139A	Design stand-alone renewable energy (RE) systems	40
UEENEEK140A	Develop engineering solutions to renewable energy (RE) problems	60
UEENEEK146A	Design energy management controls for electrical installations in buildings	80
UEENEEK151A	Develop effective engineering strategies for energy reduction in buildings	60

UEE60920 - Advanced Diploma of Renewable Energy Engineering (Release 1)

Packaging Rules

A total of **1320 weighting points** comprising:

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

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

Choose a total of 340 **weighting points** elective units from the list below, of which between 0 and 170 **weighting points** can be taken from Group A; between 0 and 60 **weighting points** can be taken from Group B; between 0 and 100 **weighting points** can be taken from Group C; between 0 and 60 **weighting points** can be taken from Group D; and between 160 and 340 **weighting points** can be taken from Group E (or all elective units of 340 weighting points can be taken from Group E).

Up to 170 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 that 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
UEECD0003	Apply industry and community standards to engineering activities	20
UEECD0004	Apply material science to solving electrotechnology engineering problems	60
UEECD0005	Apply physics to solving electrotechnology engineering problems	60
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0014	Develop design briefs for electrotechnology projects	40
UEECD0017	Establish and follow a competency development plan in an electrotechnology engineering discipline	120
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
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
UEECD0056	Apply methods to maintain currency of industry developments	20
UEECD0062	Write specifications for renewable energy engineering projects	40
UEECS0033	Use engineering applications software on personal computers	40
UEEEL0062	Provide engineering solutions to problems in complex polyphase power circuits*	60
UEERE0013	Develop strategies to address environmental and sustainability issues in the energy sector	20
UEERE0025	Carry out basic repairs to renewable energy (RE) apparatus*	80
UEERE0042	Manage renewable energy (RE) projects	40
UEERE0044	Plan renewable energy (RE) projects	60
UEERE0046	Solve problems in stand-alone renewable energy (RE) systems*	60
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
Group B: Qualification elective units		**Weighting Points**
UEECD0030	Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software*	60
UEECD0031	Prepare engineering drawings using manual drafting and CAD for electrotechnology applications*	60
UEEEC0060	Repairs basic electronic apparatus faults by replacement of components*	40
UEEEC0075	Troubleshoot single phase input d.c power supplies*	40
UEEEL0013	Install, set up and commission interval metering*	20
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices*	20
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEERE0016	Install, configure and commission LV grid-connected photovoltaic power systems*	40
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems*	20
UEERE0034	Diagnose and rectify faults in renewable energy (RE) control systems*	60

UEERE0035	Install ELV stand-alone photovoltaic power systems*	60
UEERE0036	Install small wind energy conversion systems rated up to 10 kW for ELV stand-alone applications*	20
UEERE0037	Install, configure and commission LV micro-hydro systems rated up to 6.4 kW*	20
UEERE0038	Install, configure and commission LV wind energy conversion systems rated up to 10 kW*	40
UEERE0039	Install, set up and maintain ELV micro-hydro systems rated up to 6.4 kW*	20
UEERE0045	Solve basic problems in micro-hydro systems*	20
UEERE0047	Solve problems in wind energy conversion systems (WECS) rated up to 10 kW*	60
Group C: Qualification elective units		**Weighting Points**
UEECD0032	Produce detailed electrotechnology/utilities drawings using CAD equipment and software*	60
UEECO0001	Estimate electrotechnology projects	40
UEEEL0007	Develop detailed electrical drawings*	60
UEEEL0027	Carry out low voltage electrical field testing and report findings*	60
UEEEL0040	Develop compliance policies and plans to conduct an electrical contracting business*	80
UEEEL0050	Install and replace low voltage current transformer metering*	20
UEEEL0057	Plan electrical installations with a low voltage demand up to 400 A per phase*	40
UEEEL0059	Plan low voltage switchboard and control panel layouts*	40
UEEEL0071	Select low voltage power factor correction equipment*	40
UEEEL0072	Set up and place LV electrical apparatus and associated circuits into service*	40
UEEIC0014	Develop, enter and verify programs in supervisory control and data acquisition systems*	60
UEEIC0015	Develop, enter and verify word and analogue control programs for programmable logic controllers*	60
UEERE0003	Assess energy loads and uses for energy efficiency in commercial facilities*	40
UEERE0004	Assess energy loads and uses for energy efficiency in industrial properties and enterprises*	40
UEERE0005	Assess energy loads and uses for energy efficiency in residential, office and retail premises*	40
UEERE0011	Design grid-connected photovoltaic power supply systems*	60
UEERE0014	Develop strategies to address sustainability issues for electrical installations*	20
Group D: Qualification elective units		**Weighting Points**

UEECD0013	Develop and implement energy sector maintenance programs	60
UEECO0014	Prepare tender submissions for electrotechnology projects*	60
UEEEL0006	Develop detailed and complex drawings for electrical systems using CAD systems*	60
UEEEL0035	Design effective and efficient lighting for public, open and sports areas*	20
UEEEL0037	Design electrical installations with a low voltage demand greater than 400 A per phase*	40
UEEIC0010	Develop and test code for microcontroller devices	60
UEERE0029	Design micro-hydro systems rated to 6.4 kW*	60
UEERE0030	Design renewable energy (RE) heating systems*	120
UEERE0032	Design wind energy conversion systems (WECS) rated to 10 kW*	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
UEECD0012	Contribute to risk management in electrotechnology systems	20
UEECD0029	Plan electrotechnology projects	60
UEECD0037	Provide engineering solutions for uses of materials and thermodynamic effects	80
UEECD0049	Use advanced computational processes to provide solutions to energy sector engineering problems*	80
UEECD0057	Manage electrotechnology projects	40
UEECO0003	Manage contract variations	40
UEEEL0038	Design switchboards rated for high fault levels (greater than 400 A)*	60
UEERE0010	Design energy management controls for electrical installations in buildings*	80
UEERE0012	Develop effective engineering strategies for energy reduction in buildings*	60
UEERE0028	Design hybrid renewable power systems*	80
UEERE0031	Design stand-alone renewable energy (RE) systems*	40
UEERE0033	Develop engineering solutions to renewable energy (RE) problems*	60

UEE62220 - Advanced Diploma of Electrical - Engineering (Release 1)

Packaging Rules

A total of **1320 weighting points** comprising:

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

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

Choose a total of 480 **weighting points** elective units from the list below, of which between 0 and 220 **weighting points** can be taken from Group A; between 0 and 60 **weighting points** can be taken from Group B; between 0 and 100 **weighting points** can be taken from Group C; between 0 and 60 **weighting points** can be taken from Group D; and between 260 and 480 **weighting points** can be taken from Group E (or all 480 elective weighting points can be taken from Group E).

Up to 220 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
UEECD0003	Apply industry and community standards to engineering activities	20
UEECD0004	Apply material science to solving electrotechnology engineering problems	60
UEECD0005	Apply physics to solving electrotechnology engineering problems	60
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0014	Develop design briefs for electrotechnology projects	40
UEECD0017	Establish and follow a competency development plan in an electrotechnology engineering discipline	120
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
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
UEECD0056	Apply methods to maintain currency of industry developments	20
UEECD0059	Write specifications for electrical engineering projects	40
UEECS0033	Use engineering applications software on personal computers	40
UEEEL0015	Manage large electrical projects*	40
UEEEL0058	Plan large electrical projects*	60
UEEEL0062	Provide engineering solutions to problems in complex polyphase power circuits*	60
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
Group B: General elective units		**Weighting Points**
UEEAS0007	Assemble, mount and connect control gear and switchgear*	40
UEEAS0008	Fabricate and assemble bus bars*	40
UEEAS0009	Mount and wire control panel equipment*	40
UEECD0028	Plan an integrated cabling installation system*	40
UEEDV0005	Install and maintain cabling for multiple access to telecommunication services*	80
UEEDV0008	Install, modify and verify coaxial and structured communication copper cabling*	40
UEEEC0003	Assemble and set up basic security systems*	80
UEEEC0060	Repairs basic electronic apparatus faults by replacement of components*	40
UEEEC0075	Troubleshoot single phase input d.c power supplies*	40
UEEEL0004	Carry out basic repairs to electrical components and equipment*	40
UEEEL0013	Install, set up and commission interval metering*	20
UEEEL0016	Provide advice on effective and energy efficient lighting products	20
UEEEL0017	Repair and maintain mechanical components of electrical machines*	40
UEEEL0022	Supply effective and efficient lighting products for domestic and small commercial applications*	40
UEEEL0026	Align and install traction lift equipment*	20

UEEEL0033	Conduct electrical tests on LV electrical machines*	40
UEEEL0034	Conduct mechanical tests on electrical machines and components*	40
UEEEL0045	Diagnose and rectify faults in traction lift systems*	80
UEEEL0046	Find and repair faults in LV d.c. electrical apparatus and circuits*	60
UEEEL0048	Install and maintain emergency lighting systems*	40
UEEEL0049	Install and maintain emergency safety systems*	60
UEEEL0052	Maintain and service traction lift systems and equipment*	40
UEEEL0053	Maintain operation of electrical marine equipment and systems*	60
UEEEL0054	Maintain operation of electrical mining equipment and systems*	60
UEEEL0055	Overhaul and repair major switchgear and control gear*	60
UEEEL0056	Place and connect electrical coils*	40
UEEEL0061	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect*	20
UEEEL0066	Rewind LV direct current machines*	60
UEEEL0067	Rewind single phase machines*	40
UEEEL0068	Rewind three phase low voltage induction machines*	60
UEEEL0069	Select and arrange equipment for special LV electrical installations*	60
UEEEL0074	Wind electrical coils*	40
UEEHA0001	Conduct detailed inspection of electrical installations for hazardous areas*	40
UEEHA0003	Determine the explosion-protection requirements to meet a specified classified hazardous area*	40
UEEHA0005	Install explosion-protected equipment and associated apparatus and wiring systems*	60
UEEHA0006	Maintain equipment associated with hazardous areas*	60
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices*	20
UEEIC0011	Develop electrical integrated systems*	20
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEEIC0024	Plan the electrical installation of integrated systems*	20
UEEIC0025	Provide solutions to extra-low voltage (ELV) electro-pneumatic control systems and drives*	60
UEEIC0038	Solve problems in density/level measurement components and systems*	40
UEEIC0039	Solve problems in flow measurement components and systems*	40
UEEIC0041	Solve problems in pressure measurement components and systems*	40

UEEIC0043	Solve problems in temperature measurement components and systems*	40
UEEIC0047	Use instrumentation drawings, specifications, standards and equipment manuals*	40
UEERA0035	Establish the basic operating conditions of air conditioning systems*	20
UEERA0036	Establish the basic operating conditions of vapour compression systems*	60
UEERA0059	Prepare and connect refrigerant tubing and fittings*	40
UEERE0001	Apply environmentally and sustainable procedures in the energy sector	20
UEERE0016	Install, configure and commission LV grid-connected photovoltaic power systems*	40
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems*	20
UETTDRIS44	Perform HV field switching operation to a given schedule*	40
UETTDRIS67	Solve problems in energy supply network equipment*	80
UETTDRIS68	Solve problems in energy supply network protection equipment and systems*	40
Group C: General elective units		Weighting Points
UEECD0013	Develop and implement energy sector maintenance programs	60
UEECO0001	Estimate electrotechnology projects	40
UEEEL0007	Develop detailed electrical drawings*	60
UEEEL0027	Carry out low voltage electrical field testing and report findings*	60
UEEEL0029	Conduct compliance inspection of LV electrical installations with demand exceeding 100 A per phase*	40
UEEEL0030	Conduct compliance inspection of single phase LV electrical installations*	60
UEEEL0031	Conduct compliance inspection of special LV electrical installations*	60
UEEEL0032	Conduct electrical tests on HV electrical machines*	60
UEEEL0036	Design effective and efficient lighting for residential and commercial buildings*	20
UEEEL0040	Develop compliance policies and plans to conduct an electrical contracting business*	80
UEEEL0044	Diagnose and rectify faults in complex lift systems*	40
UEEEL0050	Install and replace low voltage current transformer metering*	20
UEEEL0051	Investigate and report on electrical incidents and causes*	60
UEEEL0057	Plan electrical installations with a low voltage demand up to 400 A per phase*	40

UEEEL0059	Plan low voltage switchboard and control panel layouts*	40
UEEEL0060	Prepare quotations for the supply of effective and efficient lighting products for lighting projects*	20
UEEEL0063	Provide photometric data for illumination system design	60
UEEEL0064	Rewind HV three phase induction machines rated for voltages above 3.3 kV*	60
UEEEL0065	Rewind HV three phase induction machines rated for voltages to 3.3 kV*	60
UEEEL0070	Select effective and efficient light sources and luminaries for given locations and designs*	60
UEEEL0071	Select low voltage power factor correction equipment*	40
UEEEL0072	Set up and place LV electrical apparatus and associated circuits into service*	40
UEEEL0073	Verify compliance and functionality of special LV electrical installations*	40
UEEHA0001	Conduct detailed inspection of electrical installations for hazardous areas*	40
UEEHA0002	Conduct visual and close inspection of electrical installations for hazardous areas*	40
UEEHA0003	Determine the explosion-protection requirements to meet a specified classified hazardous area*	40
UEEHA0004	Enter a classified hazardous area to undertake work related to electrical equipment	40
UEEHA0006	Maintain equipment associated with hazardous areas*	60
UEEHA0009	Develop and manage periodic electrical inspection and maintenance programs for hazardous areas*	20
UEEIC0009	Develop an electrical integrated system interface for access through a touch screen*	20
UEEIC0012	Develop structured programs to control external devices*	40
UEEIC0014	Develop, enter and verify programs in supervisory control and data acquisition systems*	60
UEEIC0015	Develop, enter and verify word and analogue control programs for programmable logic controllers*	60
UEEIC0018	Diagnose and rectify faults in digital controls systems*	60
UEEIC0020	Fault find and repair analogue circuits and components in electronic control systems*	60
UEEIC0026	Provide solutions to fluid circuit operations*	60
UEEIC0027	Provide solutions to pneumatic-hydraulic system operations*	80
UEEIC0028	Provide solutions to problems in industrial control systems*	60
UEEIC0034	Set up industrial field control devices*	60

UEEIC0040	Solve problems in polyphase electronic power control circuits*	60
UEEIC0042	Solve problems in single phase electronic power control circuits*	60
UEERE0003	Assess energy loads and uses for energy efficiency in commercial facilities*	40
UEERE0004	Assess energy loads and uses for energy efficiency in industrial properties and enterprises*	40
UEERE0005	Assess energy loads and uses for energy efficiency in residential, office and retail premises*	40
UEERE0011	Design grid-connected photovoltaic power supply systems*	60
UEERE0014	Develop strategies to address sustainability issues for electrical installations*	20
UEERE0015	Implement and monitor energy sector environmental and sustainable policies and procedures	20
Group D: General elective units		Weighting Points
UEECO0014	Prepare tender submissions for electrotechnology projects*	60
UEECS0016	Develop energy sector directory services*	80
UEEEL0011	Evaluate performance of low voltage electrical apparatus*	40
UEEEL0037	Design electrical installations with a low voltage demand greater than 400 A per phase*	40
UEEHA0007	Plan electrical installations for hazardous areas*	20
UEEIC0001	Analyse complex electronic circuits controlling fluids	80
UEEIC0005	Configure and maintain industrial control system networks*	60
UEERE0012	Develop effective engineering strategies for energy reduction in buildings*	60
UETTDRIS69	Diagnose and rectify faults in energy supply apparatus*	60
UETTDRIS70	Diagnose and rectify faults in electrical energy distribution systems*	60
UETTDRIS71	Diagnose and rectify faults in electrical energy supply transmission systems*	60
UETTDRIS72	Diagnose and rectify faults in distributed generation systems*	60
Group E: General elective units		Weighting Points
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

UEECS0017	Develop industrial control programs for microcomputer equipped devices	60
UEECS0027	Provide programming solution for computer systems engineering problems	60
UEEEL0038	Design switchboards rated for high fault levels (greater than 400 A)*	60
UEEEL0043	Develop engineering solutions for induction machine and control problems*	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
UEEIC0016	Diagnose and rectify faults in a.c. motor drive systems*	60
UEEIC0017	Diagnose and rectify faults in d.c. motor drive systems*	60
UEEIC0019	Diagnose and rectify faults in servo drive systems*	60
UETTDRIS73	Develop engineering solutions for energy supply power transformer problems*	60
UETTDRIS74	Develop engineering solutions for energy supply system protection problems*	60

UEE62120 - Advanced Diploma of Engineering Technology - Electrical
(Release 1)

Packaging Rules

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

1460 core weighting points listed below; **plus**

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

Choose a total of 700 **weighting points** elective units from the list below, of which between 0 and 360 **weighting points** can be taken from Group A; between 0 and 160 **weighting points** can be taken from Group B; between 0 and 220 **weighting points** can be taken from Group C; between 0 and 220 **weighting points** can be taken from Group D; and between 200 and 720 **weighting points** can be taken from Group E (or all 720 elective **weighting points** can 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
UEECD0003	Apply industry and community standards to engineering activities	20
UEECD0004	Apply material science to solving electrotechnology engineering problems	60
UEECD0005	Apply physics to solving electrotechnology engineering problems	60
UEECD0007	Apply work health and safety regulations, codes and practices in the workplace	20
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0014	Develop design briefs for electrotechnology projects	40
UEECD0016	Document and apply measures to control WHS risks associated with electrotechnology work*	20

UEECD0017	Establish and follow a competency development plan in an electrotechnology engineering discipline	120
UEECD0019	Fabricate, assemble and dismantle utilities industry components*	40
UEECD0020	Fix and secure electrotechnology equipment*	20
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
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
UEECD0043	Solve problems in direct current circuits*	80
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications*	40
UEECD0059	Write specifications for electrical engineering projects	40
UEECS0033	Use engineering applications software on personal computers	40
UEEEL0003	Arrange circuits, control and protection for electrical installations*	40
UEEEL0008	Evaluate and modify low voltage heating equipment and controls*	20
UEEEL0009	Evaluate and modify low voltage lighting circuits, equipment and controls*	20
UEEEL0010	Evaluate and modify low voltage socket outlets circuits*	20
UEEEL0015	Manage large electrical projects*	40
UEEEL0018	Select wiring systems and select cables for low voltage electrical installations*	60
UEEEL0019	Solve problems in direct current (d.c.) machines*	30
UEEEL0020	Solve problems in low voltage a.c. circuits*	80
UEEEL0021	Solve problems in magnetic and electromagnetic devices*	30
UEEEL0023	Terminate cables, cords and accessories for low voltage circuits*	40
UEEEL0024	Test and connect alternating current (a.c.) rotating machines*	50
UEEEL0025	Test and connect transformers*	30
UEEEL0058	Plan large electrical projects*	60
UEEEL0062	Provide engineering solutions to problems in complex polyphase power circuits*	60
UEERE0013	Develop strategies to address environmental and sustainability issues in the energy sector	20
Group A: Imported and common elective units		Weighting Points
BSBCUS201	Deliver a service to customers	20

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
ICTICT203	Operate application software packages	20
UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	20
UEECO0002	Maintain documentation	20
UEECO0015	Provide quotations for installation or service jobs	20
UEECO0017	Source and purchase material/parts for installation or service jobs	20
Group B: General elective units		Weighting Points
UEECD0020	Fix and secure electrotechnology equipment*	20
UEECD0028	Plan an integrated cabling installation system*	40
UEECD0030	Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software*	60
UEECD0031	Prepare engineering drawings using manual drafting and CAD for electrotechnology applications*	60
UEEDV0005	Install and maintain cabling for multiple access to telecommunication services*	80
UEEDV0008	Install, modify and verify coaxial and structured communication copper cabling*	40
UEEEC0003	Assemble and set up basic security systems*	80
UEEEC0060	Repairs basic electronic apparatus faults by replacement of components*	40
UEEEC0075	Troubleshoot single phase input d.c power supplies*	40
UEEEL0004	Carry out basic repairs to electrical components and equipment*	40
UEEEL0016	Provide advice on effective and energy efficient lighting products	20
UEEEL0022	Supply effective and efficient lighting products for domestic and small commercial applications*	40
UEEEL0061	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect*	20
UEEEL0069	Select and arrange equipment for special LV electrical installations*	60
UEEIC0002	Assemble, enter and verify operating instructions in microprocessor equipped devices*	20
UEEIC0011	Develop electrical integrated systems*	20
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEEIC0024	Plan the electrical installation of integrated systems*	20
UEEIC0025	Provide solutions to extra-low voltage (ELV) electro-pneumatic control systems and drives*	60

UEEIC0047	Use instrumentation drawings, specifications, standards and equipment manuals*	40
UEERE0022	Solve basic problems in photovoltaic energy apparatus and systems*	20
UETTDRIS67	Solve problems in energy supply network equipment*	80
UETTDRIS68	Solve problems in energy supply network protection equipment and systems*	40
Group C: General elective units		**Weighting Points**
UEECO0001	Estimate electrotechnology projects	40
UEEEL0007	Develop detailed electrical drawings*	60
UEEEL0036	Design effective and efficient lighting for residential and commercial buildings*	20
UEEEL0057	Plan electrical installations with a low voltage demand up to 400 A per phase*	40
UEEEL0059	Plan low voltage switchboard and control panel layouts*	40
UEEEL0060	Prepare quotations for the supply of effective and efficient lighting products for lighting projects*	20
UEEEL0063	Provide photometric data for illumination system design	60
UEEEL0070	Select effective and efficient light sources and luminaries for given locations and designs*	60
UEEIC0009	Develop an electrical integrated system interface for access through a touch screen*	20
UEEIC0012	Develop structured programs to control external devices*	40
UEEIC0014	Develop, enter and verify programs in supervisory control and data acquisition systems*	60
UEEIC0015	Develop, enter and verify word and analogue control programs for programmable logic controllers*	60
UEERE0011	Design grid-connected photovoltaic power supply systems*	60
Group D: General elective units		**Weighting Points**
UEECD0013	Develop and implement energy sector maintenance programs	60
UEECO0014	Prepare tender submissions for electrotechnology projects*	60
UEECS0016	Develop energy sector directory services*	80
UEEEL0006	Develop detailed and complex drawings for electrical systems using CAD systems*	60
UEEEL0011	Evaluate performance of low voltage electrical apparatus*	40
UEEEL0035	Design effective and efficient lighting for public, open and sports areas*	20
UEEEL0037	Design electrical installations with a low voltage demand greater than 400 A per phase*	40

UEEIC0005	Configure and maintain industrial control system networks*	60
UEEIC0010	Develop and test code for microcontroller devices	60
UEEIC0016	Diagnose and rectify faults in a.c. motor drive systems*	60
UEEIC0017	Diagnose and rectify faults in d.c. motor drive systems*	60
UEEIC0019	Diagnose and rectify faults in servo drive systems*	60
UEERE0029	Design micro-hydro systems rated to 6.4 kW*	60
UEERE0030	Design renewable energy (RE) heating systems*	120
UEERE0032	Design wind energy conversion systems (WECS) rated to 10 kW*	60
UETTDRIS70	Diagnose and rectify faults in electrical energy distribution systems*	60
UETTDRIS71	Diagnose and rectify faults in electrical energy supply transmission systems*	60
UETTDRIS72	Diagnose and rectify faults in distributed generation systems*	60
Group E: General elective units		Weighting Points
UEECD0001	Analyse materials for suitability in electrical equipment*	80
UEECD0002	Analyse static and dynamic parameters of electrical equipment	80
UEECD0012	Contribute to risk management in electrotechnology systems	20
UEECD0015	Develop engineering solutions to photonic system problems*	80
UEECD0037	Provide engineering solutions for uses of materials and thermodynamic effects	80
UEECD0049	Use advanced computational processes to provide solutions to energy sector engineering problems*	80
UEECO0003	Manage contract variations	40
UEECS0015	Develop energy sector computer network applications infrastructure	80
UEEEC0005	Assess electronic apparatus compliance	60
UEEEC0011	Design and develop electronics/computer systems projects	40
UEEEC0014	Design signal-conditioning sub-systems	80
UEEEC0045	Modify digital signal processing (DSP) based sub-systems	80
UEEEL0038	Design switchboards rated for high fault levels (greater than 400 A)*	60
UEEEL0041	Develop engineering solution for synchronous machine and control problems*	60
UEEEL0042	Develop engineering solutions for d.c. machine and control problems*	60
UEEEL0043	Develop engineering solutions for induction machine and control problems*	60

UEEIC0006	Design and configure human-machine interface (HMI) networks	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
UEERE0010	Design energy management controls for electrical installations in buildings*	80
UEERE0012	Develop effective engineering strategies for energy reduction in buildings*	60
UEERE0028	Design hybrid renewable power systems*	80
UEERE0031	Design stand-alone renewable energy (RE) systems*	40
UEERE0033	Develop engineering solutions to renewable energy (RE) problems*	60
UETTDRIS73	Develop engineering solutions for energy supply power transformer problems*	60
UETTDRIS74	Develop engineering solutions for energy supply system protection problems*	60