



Australian Government

UEP40422 Certificate IV in ESI Generation Maintenance (Fabrication)

Release 2

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Modification History

Release 2. This is the second release of this qualification in the UEP Electricity Supply Industry - Generation Sector Training Package. With the following changes:

- Minor change to Packaging Rules.
- Superseded units updated

Release 1. This is the first release of this qualification in the UEP Electricity Supply Industry - Generation Sector Training Package.

Qualification Description

This qualification covers the skills and knowledge required to complete power generation work functions in the electrical supply industry. Functions include installation, fabrication, repair and maintenance of industrial pressure vessels and associated pipework, coded welding, welding supervision, general fabrication and the observation of safe working practices. It also includes the supervision of others and the coordination of work activities.

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

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

A total **1280 weighting points** comprising:

- **760 core weighting points**; plus
- **520 elective weighting points from the general elective units** listed below.

Choose a total of 520 weighting point from the general elective units list below of which:

- between 0 and 220 weighting points can be taken from Group A
- between 0 and 400 weighting points can be selected from Group B
- between 120 and 520 weighting points may be taken from Group C, you may select all your elective units from this group.

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 UEP Electricity Supply

Industry - Generation Sector Training Package Companion Volume Implementation Guide (CVIG), if not listed weighting points will be 10 points unless directed from the ESI Generation 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 that 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
MEM05007 Perform manual heating and thermal cutting	20
⊥ MEM09002 Interpret technical drawing	
⊥ MEM11011 Undertake Manual Handling	
⊥ MEM12023 Perform engineering measurements	
⊥ MEM13015 Work safely and effectively in manufacturing and engineering	
⊥ MEM16006 Organise and communicate information	
MEM05012 Perform routine manual metal arc welding	20
⊥ MEM11011 Undertake Manual Handling	
⊥ MEM13015 Work safely and effectively in manufacturing and engineering	
⊥ MEM16006 Organise and communicate information	
MEM05015 Weld using manual metal arc welding process	40
⊥ 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	
⊥ 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	

MEM05016	Perform advanced welding using manual metal arc welding process	40
	└ MEM05007 Perform manual heating and thermal cutting	
	└ MEM05012 Perform routine manual metal arc welding	
	└ MEM05015 Weld using manual metal arc welding process	
	└ MEM05051 Select welding processes	
	└ MEM05052 Apply safe welding practices	
	└ MEM09002 Interpret technical drawing	
	└ MEM11011 Undertake Manual Handling	
	└ MEM12023 Perform engineering measurements	
	└ MEM12024 Perform Computations	
	└ 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	
MEM05017	Weld using gas metal arc welding process	40
	└ MEM05050 Perform routine gas 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	
	└ 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	
MEM05018	Perform advanced welding using gas metal arc welding process	40
	└ MEM05007 Perform manual heating and thermal cutting	

	└ MEM05017 Weld using gas metal arc welding process	
	└ MEM05050 Perform routine gas 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	
	└ 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	
MEM05024	Perform welding supervision	120
	└ MEM05026 Apply welding principles	
	└ MEM09002 Interpret technical drawing	
	└ MEM11011 Undertake Manual Handling	
	└ MEM12023 Perform engineering measurements	
	└ MEM12024 Perform Computations	
	└ MEM13015 Work safely and effectively in manufacturing and engineering	
	└ MEM14006 Plan work activities	
	└ MEM16006 Organise and communicate information	
MEM05026	Apply welding principles	40
	└ MEM11011 Undertake Manual Handling	
	└ MEM12023 Perform engineering measurements	
	└ MEM12024 Perform Computations	
	└ MEM13015 Work safely and effectively in manufacturing and engineering	
	└ MEM14006 Plan work activities	
	└ MEM16006 Organise and communicate information	
MEM05050	Perform routine gas metal arc welding	20

	<ul style="list-style-type: none"> └ MEM11011 Undertake Manual Handling └ MEM13015 Work safely and effectively in manufacturing and engineering └ MEM16006 Organise and communicate information 	
MEM05051	Select welding processes	20
	<ul style="list-style-type: none"> └ MEM13015 Work safely and effectively in manufacturing and engineering └ MEM16006 Organise and communicate information 	
MEM05052	Apply safe welding practices	40
	<ul style="list-style-type: none"> └ MEM13015 Work safely and effectively in manufacturing and engineering └ MEM16006 Organise and communicate information 	
MEM09002	Interpret technical drawing	40
	<ul style="list-style-type: none"> └ MEM12023 Perform engineering measurements └ MEM12024 Perform Computations └ MEM13015 Work safely and effectively in manufacturing and engineering └ MEM16006 Organise and communicate information 	
MEM12023	Perform engineering measurements	50
	<ul style="list-style-type: none"> └ MEM13015 Work safely and effectively in manufacturing and engineering └ MEM16006 Organise and communicate information 	
MEM18001	Use hand tools	20
	<ul style="list-style-type: none"> └ MEM11011 Undertake Manual Handling └ MEM13015 Work safely and effectively in manufacturing and engineering └ MEM16006 Organise and communicate information 	
MEM18002	Use power tools/hand held operations	20
	<ul style="list-style-type: none"> └ MEM11011 Undertake Manual Handling └ MEM13015 Work safely and effectively in manufacturing and engineering └ MEM16006 Organise and communicate information 	
UEECD0007	Apply work health and safety regulations, codes and practices in the workplace	20

UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
UEPMNT302	Install and maintain industrial pipe work	40
	└ MEM09002 Interpret technical drawing	
	└ MEM12023 Perform engineering measurements	
	└ MEM18001 Use hand tools	
	└ MEM18002 Use power tools/hand held operations	
	└ MEM18003 Use tools for precision work	
	└ MEM18006 Repair and fit engineering components	
	└ MEM18055 Dismantle, replace and assemble engineering components	
UEPOPS003	Apply quality systems to work	20
UEPOPS021	Control permit to work operations	20
UEPOPS047	Maintain quality systems within the team	20
	└ UEPOPS003 Apply quality systems to work	
UEPOPS061	Monitor and implement environmental site plans and procedures	20
UEPOPS127	Plan and organise work	30
Group A elective units		Weighting points
BSBHRM413	Support the learning and development of teams and individuals	40
BSBINS402	Coordinate workplace information systems	40
BSBLDR413	Lead effective workplace relationships	50
BSBLDR414	Lead team effectiveness	50
BSBOPS402	Coordinate business operational plans	40
BSBOPS404	Implement customer service strategies	40
BSBPEF402	Develop personal work priorities	40
BSBSTR401	Promote innovation in team environments	40
BSBSTR402	Implement continuous improvement	40

CPCCCM2007	Use explosive power tools	10-
	└ CPCCWHS2001 Apply WHS requirements, policies and procedures in the construction industry	
CPCCLDG3001	Licence to perform dogging	30
CPCCLRG3001	Licence to perform rigging basic level	40
	└ CPCCLDG3001 Licence to perform dogging	
CPCCLRG3002	Licence to perform rigging intermediate level	40
	└ CPCCLRG3001 Licence to perform rigging basic level	
CPCCLSF2001	Licence to erect, alter and dismantle scaffolding basic level	40
RIIHAN309F	Conduct telescopic materials handler operations	80
TAEDEL311	Provide work skill instruction	40
TLILIC0003	Licence to operate a forklift truck	40
TLILIC0005	Licence to operate a boom-type elevating work platform (boom length 11 metres or more)	30
TLILIC0024	Licence to operate a vehicle loading crane (capacity 10 metre tonnes and above)	40

Group B Elective units**Weighting points**

MEM05004	Perform routine oxy fuel gas welding	20
	└ MEM11011 Undertake Manual Handling	
	└ MEM13015 Work safely and effectively in manufacturing and engineering	
	└ MEM16006 Organise and communicate information	
MEM05005	Carry out mechanical cutting	20
	└ MEM11011 Undertake Manual Handling	
	└ MEM12023 Perform engineering measurements	
	└ MEM13015 Work safely and effectively in manufacturing and engineering	
	└ MEM16006 Organise and communicate information	
	└ MEM18001 Use hand tools	
MEM05011	Assemble fabricated components	80

- └ MEM05005 Carry out mechanical cutting
 - └ MEM05007 Perform manual heating and thermal cutting
 - └ MEM05051 Select welding processes
 - └ MEM05052 Apply safe welding practices
 - └ MEM09002 Interpret technical drawing
 - └ MEM11011 Undertake Manual Handling
 - └ MEM12023 Perform engineering measurements
 - └ MEM12024 Perform computations
 - └ 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
- Plus, one or more of the following, including prerequisites:
- └ MEM05015 Weld using manual metal arc welding process
 - └ MEM05017 Weld using gas metal arc welding process
 - └ MEM05019 Weld using gas tungsten arc welding process
 - └ MEM05055 Weld using oxy fuel gas process

MEM05019	Weld using gas tungsten arc welding process	40
	└ MEM05049 Perform routine gas tungsten 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	
	└ 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	

MEM05036	Repair, replace and/or modify fabrications └ MEM05005 Carry out mechanical cutting └ MEM05007 Perform manual heating and thermal cutting └ MEM05011 Assemble fabricated components └ MEM05051 Select welding processes └ MEM05052 Apply safe welding practices └ MEM09002 Interpret technical drawing └ MEM11011 Undertake Manual Handling └ MEM12023 Perform engineering measurements └ MEM12024 Perform computations └ 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 Plus one or more of the following, including their prerequisites: └ MEM05015 Weld using manual metal arc welding process └ MEM05017 Weld using gas metal arc welding process └ MEM05019 Weld using gas tungsten arc welding process └ MEM05047 Weld using flux core arc welding process └ MEM05055 Weld using oxy fuel gas arc welding process	40
MEM05049	Perform routine gas tungsten arc welding └ MEM11011 Undertake Manual Handling └ MEM13015 Work safely and effectively in manufacturing and engineering └ MEM16006 Organise and communicate information	20
MEM11011	Undertake manual handling └ MEM13015 Work safely and effectively in manufacturing and engineering └ MEM16006 Organise and communicate information	20
MEM12007	Mark off/out structural fabrications and shapes	40

	└ MEM09002 Interpret technical drawing	
	└ MEM11011 Undertake Manual Handling	
	└ MEM12023 Perform engineering measurements	
	└ MEM12024 Perform computations	
	└ MEM13015 Work safely and effectively in manufacturing and engineering	
	└ MEM14006 Plan work activities	
	└ MEM16006 Organise and communicate information	
MEM12024	Perform computations	30
	└ MEM13015 Work safely and effectively in manufacturing and engineering	
	└ MEM16006 Organise and communicate information	
MEM13015	Work safely and effectively in manufacturing and engineering	20
MEM14006	Plan work activities	20
	└ MEM13015 Work safely and effectively in manufacturing and engineering	
	└ MEM16006 Organise and communicate information	
MEM16006	Organise and communicate information	20
	└ MEM13015 Work safely and effectively in manufacturing and engineering	
UEPMNT340	Fabricate metal structures and components	40
	└ MEM09002 Interpret technical drawing	
	└ MEM12023 Perform engineering measurements	
	└ MEM18001 Use hand tools	
	└ MEM18002 Use power tools/hand held operations	
	└ MEM18003 Use tools for precision work	
	└ MEM18006 Repair and fit engineering components	
	└ MEM18055 Dismantle, replace and assemble engineering components	
UEPOPS017	Conduct single energy source isolation procedures for permit to work	40
UEPOPS041	Facilitate workplace communication	20

Group C Elective units	Weighting points
<p>MEM05020 Perform advanced welding using gas tungsten arc welding process</p> <ul style="list-style-type: none"> └ MEM05007 Perform manual heating and thermal cutting └ MEM05019 Weld using gas tungsten arc welding process └ MEM05049 Perform routine gas tungsten 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 └ 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 	40
<p>MEM05022 Perform advanced welding using oxy acetylene welding process</p> <ul style="list-style-type: none"> └ MEM05004 Perform routine oxy fuel gas welding └ MEM05007 Perform manual heating and thermal cutting └ MEM05051 Select welding processes └ MEM05052 Apply safe welding practices └ MEM05055 Weld using oxy fuel gas arc welding process └ MEM09002 Interpret technical drawing └ MEM11011 Undertake Manual Handling └ MEM12023 Perform engineering measurements └ MEM12024 Perform computations └ MEM13015 Work safely and effectively in manufacturing and engineering └ MEM14006 Plan work activities └ MEM16006 Organise and communicate information 	60

- └ MEM18001 Use hand tools
- └ MEM18002 Use power tools/hand held operations
- MEM05043 Perform welds to code standards using gas metal arc welding process 60
 - └ MEM05007 Perform manual heating and thermal cutting
 - └ MEM05017 Weld using gas metal arc welding process
 - └ MEM05018 Perform advanced welding using gas metal arc welding process
 - └ MEM05026 Apply welding principles
 - └ MEM05050 Perform routine gas 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
 - └ 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
- MEM05044 Perform welds to code standards using gas tungsten arc welding process 60
 - └ MEM05007 Perform manual heating and thermal cutting
 - └ MEM05019 Perform advanced welding using gas tungsten arc welding process
 - └ MEM05020 Perform advanced welding using gas tungsten arc welding process
 - └ MEM05026 Apply welding principles
 - └ MEM05049 Perform routine gas tungsten 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
 - └ 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
- MEM05045 Perform pipe welds to code standards using manual metal arc welding process 60
- └ MEM05007 Perform manual heating and thermal cutting
 - └ MEM05012 Perform routine manual metal arc welding
 - └ MEM05015 Weld using manual metal arc welding process
 - └ MEM05016 Perform advanced welding using manual metal arc welding process
 - └ MEM05026 Apply welding principles
 - └ MEM05051 Select welding processes
 - └ MEM05052 Apply safe welding practices
 - └ MEM09002 Interpret technical drawing
 - └ MEM11011 Undertake Manual Handling
 - └ MEM12023 Perform engineering measurements
 - └ MEM12024 Perform computations
 - └ 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
- MEM05046 Perform welds to code standards using manual metal arc welding process 60
- └ MEM05007 Perform manual heating and thermal cutting
 - └ MEM05012 Perform routine manual metal arc welding
 - └ MEM05015 Weld using manual metal arc welding process
 - └ MEM05016 Perform advanced welding using manual metal arc welding process

- └ MEM05026 Apply welding principles
 - └ MEM05051 Select welding processes
 - └ MEM05052 Apply safe welding practices
 - └ MEM09002 Interpret technical drawing
 - └ MEM11011 Undertake Manual Handling
 - └ MEM12023 Perform engineering measurements
 - └ MEM12024 Perform computations
 - └ 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
- UEPMNT421 Conduct technical inspection of process plant and equipment 60
- └ UEECD0019 Fabricate, assemble and dismantle utilities industry components
 - └ UEECD0020 Fix and secure electrotechnology equipment
 - └ UEECD0043 Solve problems in direct current circuits
 - └ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications
 - └ UEEEL0003 Arrange circuits, control and protection for general electrical installations
 - └ UEEEL0011 Evaluate performance of low voltage electrical apparatus
 - └ UEEEL0014 Isolate, test and troubleshoot low voltage electrical circuits
 - └ UEEEL0020 Solve problems in low voltage a.c. circuits
 - └ UEEEL0021 Solve problems in magnetic and electromagnetic devices
 - └ UEEEL0023 Terminate cables, cords and accessories for low voltage circuits
 - └ UEEEL0024 Test and connect alternating current (a.c.) machines
 - └ UEEEL0025 Test and Connect Transformers
 - └ UEPMNT351 Test and commission electrical equipment
- UEPMNT422 Conduct performance testing on process plant and equipment 60

- └ UEECD0019 Fabricate, assemble and dismantle utilities industry components
 - └ UEECD0020 Fix and secure electrotechnology equipment
 - └ UEECD0043 Solve problems in direct current circuits
 - └ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications
 - └ UEEEL0003 Arrange circuits, control and protection for general electrical installations
 - └ UEEEL0011 Evaluate performance of low voltage electrical apparatus
 - └ UEEEL0014 Isolate, test and troubleshoot low voltage electrical circuits
 - └ UEEEL0020 Solve problems in low voltage a.c. circuits
 - └ UEEEL0021 Solve problems in magnetic and electromagnetic devices
 - └ UEEEL0023 Terminate cables, cords and accessories for low voltage circuits
 - └ UEEEL0024 Test and connect alternating current (a.c.) machines
 - └ UEEEL0025 Test and Connect Transformers
 - └ UEPMNT351 Test and commission electrical equipment
- UEPOPS011 Conduct multiple energy source isolation procedures for permit to work 40
- └ UEPOPS017 Conduct single energy source isolation procedures for permit to work

Qualification Mapping Information

This qualification replaces and is equivalent to UEP40418 Certificate IV in ESI Generation Maintenance (Fabrication)

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8>