



Australian Government

UEP50422 Diploma of ESI Generation Maintenance - Electrical Electronic

Release 1

UEP50422 Diploma of ESI Generation Maintenance - Electrical Electronic

Modification History

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 manufacture, fit, assemble, erect, operate, test, diagnose faults, alter and repair electrical and electronic equipment, including instrumentation systems. It does not include installation of any electrical wiring systems within an electrical installation as prescribed in current industry standards.

Functions include maintenance planning and scheduling, as well as electrical wiring work if it is associated with assembling, maintaining, terminating or altering the wiring between electrical components within power generating plant or machinery. It also includes the supervision of others and the coordination of work activities.

Electrical equipment means any appliance, article, accessory, wire, fitting, cable, conduit or apparatus that generates, uses, conveys or controls, or that is intended to generate, use, convey or control electricity above extra low voltage.

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 1600 weighting points comprising:

- 1010 core weighting points; plus
- 590 general elective weighting points from the general elective units listed below.

Choose a total of 590 weighting point elective units from the list below of which

- up to 270 weighting points can be taken from Group A
- a maximum 180 weighting points can be selected from Group B
- a minimum of 420 to a maximum of 590 weighting points may be taken from Group C, you may select all your elective units from this group.

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 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
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
UEECD0043 Solve problems in direct current circuits ⊥ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	80
UEECD0020 Fix and secure electrotechnology equipment ⊥ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	20
UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications ⊥ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	40
UEECD0024 Implement and monitor energy sector WHS policies and procedures	20
UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work ⊥ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	20
UEEEL0024 Test and connect alternating current (a.c.) rotating machines ⊥ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace ⊥ UEECD0019 Fabricate, assemble and dismantle utilities industry	80

	components	
	└ UEECD0020 Fix and secure electrotechnology equipment	
	└ UEECD0043 Solve problems in direct current circuits	
	└ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications	
	└ UEEEL0019 Solve problems in direct current (d.c.) machines	
	└ 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	
UEEEL0011	Evaluate performance of low voltage electrical apparatus	60
	└ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	
UEEEL0003	Arrange circuits, control and protection for general electrical installations	40
	└ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	
	└ 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	
	└ 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	
UEEEL0021	Solve problems in magnetic and electromagnetic devices	60
	└ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	
	└ UEECD0043 Solve problems in direct current circuits	
UEEEL0020	Solve problems in low voltage a.c. circuits	80
	└ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	

	└ UEECD0043 Solve problems in direct current circuits	
	└ UEEEL0021 Solve problems in magnetic and electromagnetic devices	
UEEEL0023	Terminate cables, cords and accessories for low voltage circuits	40
	└ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	
	└ UEECD0019 Fabricate, assemble and dismantle utilities industry components	
	└ UEECD0020 Fix and secure electrotechnology equipment	
	└ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications	
UEEEL0014	Isolate, test and troubleshoot low voltage electrical circuits	40
	└ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	
	└ UEECD0019 Fabricate, assemble and dismantle utilities industry components	
	└ UEECD0043 Solve problems in direct current circuits	
	└ UEECD0020 Fix and secure electrotechnology equipment	
	└ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications	
	└ UEEEL0025 Test and Connect Transformers	
	└ UEEEL0011 Evaluate performance of low voltage electrical apparatus	
	└ UEEEL0003 Arrange circuits, control and protection for general electrical installations	
	└ UEEEL0021 Solve problems in magnetic and electromagnetic devices	
	└ UEEEL0020 Solve problems in low voltage a.c. circuits	
	└ UEEEL0023 Terminate cables, cords and accessories for low voltage circuits	
UEEEL0005	Develop and connect electrical control circuits	80
	└ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace	
	└ 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	
└ 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	
└ UEEEL0025 Test and Connect Transformers	
UEPOPS003 Apply quality systems to work	20
UEPOPS004 Carry out operational checks on in-service electrical plant	40
UEPOPS015 Conduct project management	60
UEPOPS021 Control permit to work operations	20
UEPOPS041 Facilitate workplace communication	20
UEPOPS047 Maintain quality systems within the team	20
└ UEPOPS003 Apply quality systems to work	
UEPOPS056 Manage quality control procedures	40
UEPOPS058 Manage work health and safety policy and procedures	40
└ UEECD0024 Implement and monitor energy sector WHS policies and procedures	
UEPOPS061 Monitor and implement environmental site plans and procedures	20
UEPOPS127 Plan and organise work	30
Group A Elective units	Weighting points
BSBPEF501 Manage personal and professional development	60
BSBLDR522 Manage people performance	70
BSBOPS502 Manage business operational plans	60

BSBINS501	Implement information and knowledge management systems	50
BSBOPS505	Manage organisational customer service	40
BSBSTR502	Facilitate continuous improvement	60
BSBSTR501	Establish innovative work environment	50
BSBHRM52 3	Coordinate the learning and development of teams and individuals	60
BSBTWK50 2	Lead and manage team effectiveness	60
BSBOPS502	Ensure a safe workplace for a work area	60

Group B Elective units**Weighting
points**

UEPMNT34 6	Maintain electrical equipment	40
	<ul style="list-style-type: none"> └ UEECD0019 Fabricate, assemble and dismantle utilities industry components └ UEECD0020 Fix and secure electrotechnology equipment └ 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 └ UEEEL0025 Test and Connect Transformers 	
UEPMNT34 7	Maintain complex electrical equipment	60
	└ UEPMNT346 Maintain electrical equipment	
UEPMNT34	Maintain electrical electronic equipment	40

8	<ul style="list-style-type: none"> └ 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 └ UEEEL0025 Test and Connect Transformers 	
UEPMNT350	Modify electrical equipment <ul style="list-style-type: none"> └ 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 └ UEEEL0025 Test and Connect Transformers 	40
UEPMNT351	Test and commission electrical equipment <ul style="list-style-type: none"> └ 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 	40

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

└ UEEEL0025 Test and Connect Transformers

UEPMNT35 5 Install complex electronic instrumentation equipment 40

└ UEECD0019 Fabricate, assemble and dismantle utilities industry components

└ UEECD0020 Fix and secure electrotechnology equipment

└ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

└ UEEIC0022 Install instrumentation and control apparatus and associated equipment

UEPMNT35 6 Maintain instrumentation equipment 40

└ UEECD0019 Fabricate, assemble and dismantle utilities industry components

└ UEECD0020 Fix and secure electrotechnology equipment

└ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEPMNT35 7 Diagnose and repair faults in instrumentation equipment 60

└ UEECD0019 Fabricate, assemble and dismantle utilities industry components

└ UEECD0020 Fix and secure electrotechnology equipment

└ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

UEPMNT35 8 Modify instrumentation equipment 40

└ UEECD0019 Fabricate, assemble and dismantle utilities industry components

└ UEECD0020 Fix and secure electrotechnology equipment

└ UEECD0051 Use drawings, diagrams, schedules, standards,

codes and specifications

UEPMNT35 9	Test and commission instrumentation equipment <ul style="list-style-type: none"> └ UEECD0019 Fabricate, assemble and dismantle utilities industry components └ UEECD0020 Fix and secure electrotechnology equipment └ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications 	40
UEPMNT36 6	Maintain power plant inverter systems <ul style="list-style-type: none"> └ 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 └ UEEEL0025 Test and Connect Transformers 	60
UEPOPS017	Conduct single energy source isolation procedures for permit to work	40

Group C Elective units

Weighting points

UEECO0001	Estimate electrotechnology projects	40
UEECD0010	Compile and produce an energy sector detailed report	60
UEEEL0025	Test and connect transformers <ul style="list-style-type: none"> └ UEECD0007 Apply work health and safety regulations, codes 	80

and practices in the workplace

└ 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

└ UEEEL0019 Solve problems in direct current (d.c.) machines

└ 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

UEEEL0047 Identify, shut down and restart systems with alternate supplies

└ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

└ UEECD0019 Fabricate, assemble and dismantle utilities industry components

└ UEECD0020 Fix and secure electrotechnology equipment

└ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

└ UEEEL0003 Arrange circuits, control and protection for general electrical installations

└ UEEEL0020 Solve problems in low voltage a.c. circuits

└ UEEEL0023 Terminate cables, cords and accessories for low voltage circuits

└ UEEEL0019 Solve problems in direct current (d.c.) machines

└ UEEEL0021 Solve problems in magnetic and electromagnetic devices

└ UEECD0043 Solve problems in direct current circuits

UEPMNT41 Diagnose and repair faults in electronic equipment 60

0

└ 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

└ UEEEL0025 Test and Connect Transformers

UEPMNT41 Diagnose and repair faults in complex electrical equipment 60

1

└ 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

└ UEEEL0025 Test and Connect Transformers

UEPMNT41 Modify complex electrical equipment 60

2

└ UEECD0019 Fabricate, assemble and dismantle utilities industry components

└ UEECD0020 Fix and secure electrotechnology equipment

└ UEECD0043 Solve problems in direct current circuits

	<ul style="list-style-type: none"> └ 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 └ UEEEL0025 Test and Connect Transformers └ UEPMNT350 Modify electrical equipment 	
UEPMNT41 4	Test and commission complex electrical equipment <ul style="list-style-type: none"> └ 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 └ UEEEL0025 Test and Connect Transformers └ UEPMNT351 Test and commission electrical equipment 	60
UEPMNT41 7	Inspect electrical generators and diagnose faults <ul style="list-style-type: none"> └ UEECD0019 Fabricate, assemble and dismantle utilities industry 	80

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
- └ UEEEL0025 Test and Connect Transformers
- └ UEPMNT351 Test and commission electrical equipment

UEPMNT42 Conduct technical inspection of process plant and equipment 60

1

- └ 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
- └ UEEEL0025 Test and Connect Transformers

	└ UEPMNT351 Test and commission electrical equipment	
UEPMNT42 2	Conduct performance testing on process plant and equipment └ 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 └ UEEEL0025 Test and Connect Transformers └ UEPMNT351 Test and commission electrical equipment	60
UEPMNT42 5	Maintain complex instrumentation equipment └ UEECD0019 Fabricate, assemble and dismantle utilities industry components └ UEECD0020 Fix and secure electrotechnology equipment └ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications └ UEPMNT356 Maintain instrumentation equipment	80
UEPMNT42 7	Diagnose and repair faults in complex instrumentation equipment └ UEECD0019 Fabricate, assemble and dismantle utilities industry components └ UEECD0020 Fix and secure electrotechnology equipment └ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications └ UEPMNT356 Maintain instrumentation equipment	80

UEPMNT428	Modify complex instrumentation equipment	80
	└ UEECD0019 Fabricate, assemble and dismantle utilities industry components	
	└ UEECD0020 Fix and secure electrotechnology equipment	
	└ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications	
	└ UEPMNT356 Maintain instrumentation equipment	
UEPMNT430	Test and commission complex instrumentation equipment	80
	└ UEECD0019 Fabricate, assemble and dismantle utilities industry components	
	└ UEECD0020 Fix and secure electrotechnology equipment	
	└ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications	
	└ UEPMNT359 Test and commission instrumentation equipment	
UEPOPS011	Conduct multiple energy source isolation procedures for permit to work	40
	└ UEPOPS017 Conduct single energy source isolation procedures for permit to work	
UEPOPS032	Coordinate team activities	30
UEPOPS048	Manage commissioning and decommissioning	80
UEPOPS143	Tune process plant and equipment	60

Qualification Mapping Information

This qualification replaces and is equivalent to UEP50418 Diploma of ESI Generation Maintenance - Electrical Electronic

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=1715b9fa-e7bd-441c-bb8d-cf22c9c825a8>