

UET60222 Advanced Diploma of ESI - Power Systems

UET60222 Advanced Diploma of ESI - Power Systems

Modification History

Release 1. This is the first release of this qualification in the UET Transmission, Distribution and Rail Sector Training Package Release 4.0.

Qualification Description

This qualification provides the skills and knowledge to work in the electricity supply industry within distribution and transmission networks. The qualification allows individuals to specialise in one of the following areas.

Design and Drafting

This specialisation covers the skills and knowledge for designing and drafting transmission and distribution networks, and the use of CAD software and drawing management systems.

Design

This specialisation covers the skills and knowledge for designing transmission and distribution networks.

System Operations Distribution

This specialisation covers the skills and knowledge for monitoring, operating, coordinating and maintaining distribution networks.

System Operations Transmission

This specialisation covers the skills and knowledge for monitoring, operating, coordinating and maintaining transmission networks.

Protection (Testing)

This specialisation covers the skills and knowledge for commissioning, maintaining, diagnosing faults of complex protection and control systems.

Protection and Metering (Testing)

This specialisation covers the skills and knowledge for commissioning, maintaining, diagnosing faults of metering systems.

Please note: RTO to insert on the testamur, the specialisation selected from the specialist group choice below.

The skills and knowledge described within the units in this qualification may require a licence or permit to practice in the workplace.

Additional and/or other conditions may also apply under state and territory legislative and regulatory licensing requirements which must be confirmed prior to commencing the qualification.

Approved Page 2 of 27

Entry Requirements

There are no entry requirements for this qualification

Packaging Rules

Total number of units

Specialisations

Design and Drafting

Total of **14 units** of competency

- 6 core units listed below, plus
- 8 electives from Group A and/or B, with up to 3 from Group G

Design

Total of **14 units** of competency

- 6 core units listed below, plus
- **8 electives** from Group B

System Operations Distribution

Total of **13 units** of competency

- 6 core units listed below, plus
- **7 electives** from Group C

System Operations Transmission

Total of 12 units of competency

- 6 core units listed below, plus
- 6 electives from Group D

Protection (Testing)

Total of **14 units** of competency

- 6 core units listed below, plus
- **8 electives** from Group E

Protection and Metering (Testing)

Total of **14 units** of competency

- 6 core units listed below, plus
- 8 electives from Group F

Up to 1 of the elective units may be selected, with appropriate contextualisation, from a qualification in this or any endorsed Training Package, provided the selected unit contributes to the vocational outcome of the qualification.

Where imported units are selected, care must be taken to ensure all prerequisite units specified are complied with. Prerequisites attached to any of the units must be obtained and are additional

Approved Page 3 of 27

to the number of units required for the qualification.

Where a prerequisite is attached to a unit it is identified by the symbol \bot .

Core units

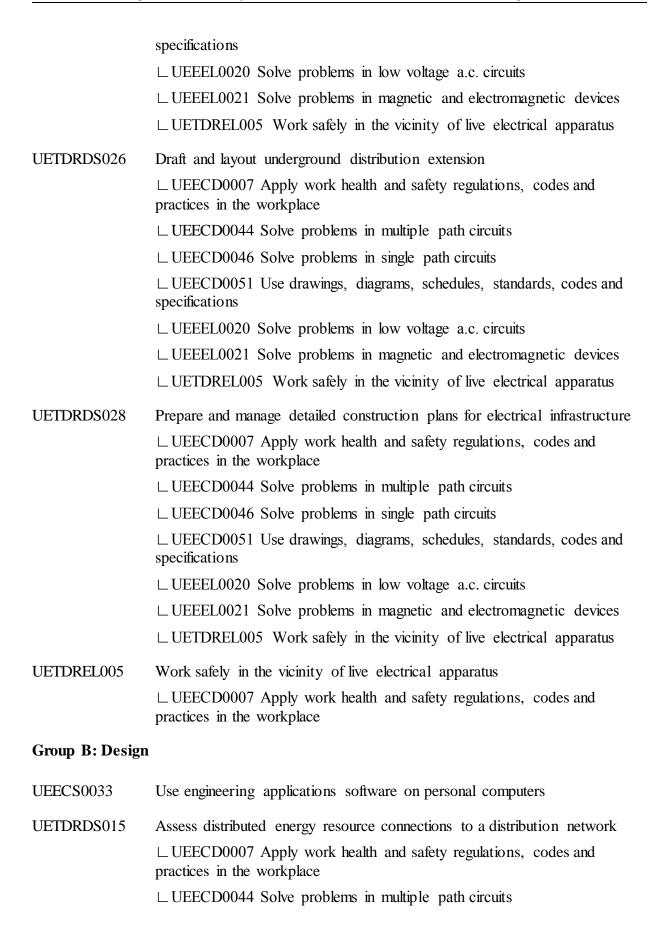
UEECD0007	Apply work health and safety regulations, codes and practices in the workplace
UEECD0044	Solve problems in multiple path circuits
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0046 Solve problems in single path circuits
UEECD0046	Solve problems in single path circuits
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEEL0020	Solve problems in low voltage a.c. circuits
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEEEL0021 Solve problems in magnetic and electromagnetic devices
	and
	∟UEECD0043 Solve problems in direct current circuits
	or
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path circuits
UEEEL0021	Solve problems in magnetic and electromagnetic devices
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	and
	∟UEECD0043 Solve problems in direct current circuits
	or
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path circuits

Approved Page 4 of 27

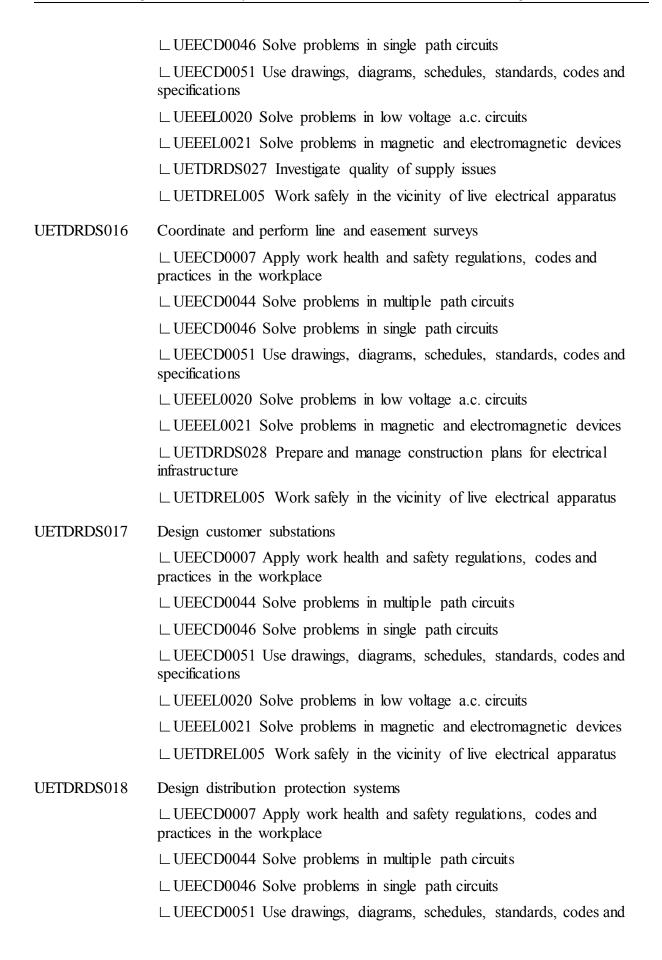
Group A: Design and Drafting

UEECS0033	Use engineering applications software on personal computers
MEM30031A	Operate computer-aided design (CAD) system to produce basic drawing elements
MEM30033A	Use computer-aided design (CAD) to create and display 3-D models
	$ \sqcup \text{MEM30031A}$ Operate computer-aided design (CAD) system to produce basic drawing elements
UETDRDS023	Draft and layout distribution substation minor upgrade
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path circuits
	$\hfill \hfill $
	∟ UEEEL0020 Solve problems in low voltage a.c. circuits
	∟UEEEL0021 Solve problems in magnetic and electromagnetic devices
	∟UETDREL005 Work safely in the vicinity of live electrical apparatus
UETDRDS024	Draft and layout overhead distribution extension
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path circuits
	$\hfill \ensuremath{\sqcup}$ 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
	∟UETDREL005 Work safely in the vicinity of live electrical apparatus
UETDRDS025	Draft and layout street lighting system LUEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	□ UEECD0044 Solve problems in multiple path circuits
	 UEECD0046 Solve problems in single path circuits UEECD0051 Use drawings, diagrams, schedules, standards, codes and

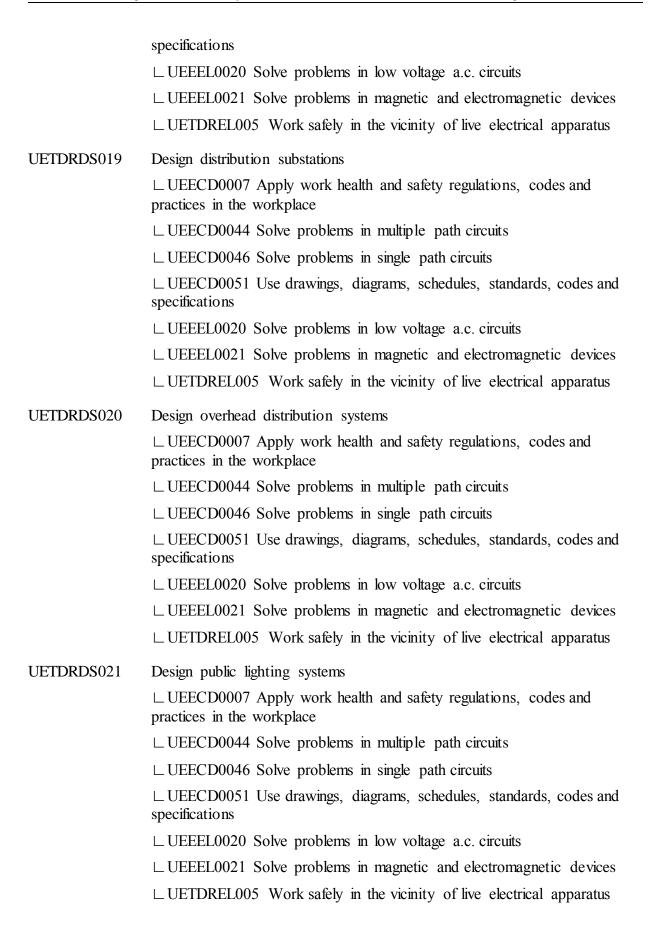
Approved Page 5 of 27



Approved Page 6 of 27



Approved Page 7 of 27



Approved Page 8 of 27

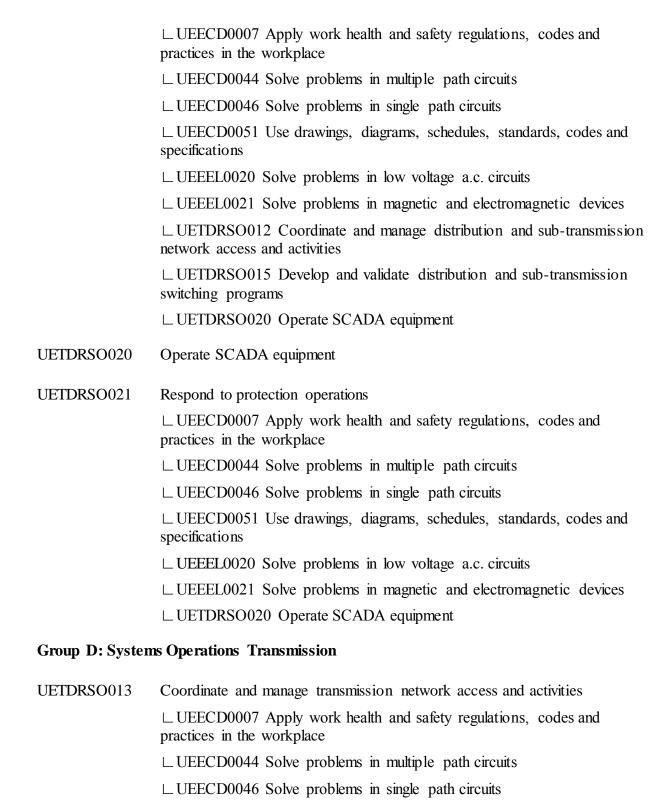
UETDRDS022	Design underground distribution systems
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path circuits
	∟UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications
	∟ UEEEL0020 Solve problems in low voltage a.c. circuits
	∟ UEEEL0021 Solve problems in magnetic and electromagnetic devices
	∟UETDREL005 Work safely in the vicinity of live electrical apparatus
UETDRDS027	Investigate quality of supply issues
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0044 Solve problems in multiple path circuits
	∟UEECD0046 Solve problems in single path circuits
	$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $
	∟ UEEEL0020 Solve problems in low voltage a.c. circuits
	∟ UEEEL0021 Solve problems in magnetic and electromagnetic devices
	∟UETDREL005 Work safely in the vicinity of live electrical apparatus
UETDRDS028	Prepare and manage construction plans for electrical infrastructure
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path 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
	∟UETDREL005 Work safely in the vicinity of live electrical apparatus
UETDREL005	Work safely in the vicinity of live electrical apparatus
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

Group C: Systems Operations Distribution

Approved Page 9 of 27

UETDRSO012	Coordinate and manage distribution and sub-transmission network access and activities
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path 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
	∟UETDRSO015 Develop and validate distribution and sub-transmission switching programs
	∟ UETDRSO016 Develop and validate low voltage switching programs
	∟ UETDRSO020 Operate SCADA equipment
UETDRSO015	Develop and validate distribution and sub-transmission switching programs
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path 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
UETDRSO016	Develop and validate low voltage switching programs
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0044 Solve problems in multiple path circuits
	∟UEECD0046 Solve problems in single path 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
UETDRSO018	Dispatch and monitor field staff activities
UETDRSO019	Manage supply and demand in distribution and sub-transmission networks

Approved Page 10 of 27



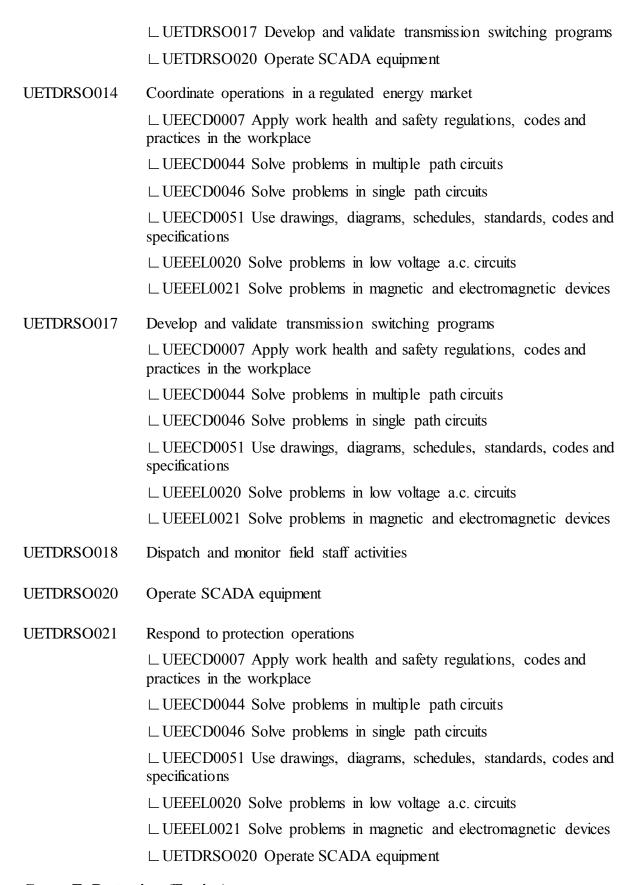
Approved Page 11 of 27

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

∟ UEECD0051 Use drawings, diagrams, schedules, standards, codes and

∟ UEEEL0021 Solve problems in magnetic and electromagnetic devices

specifications

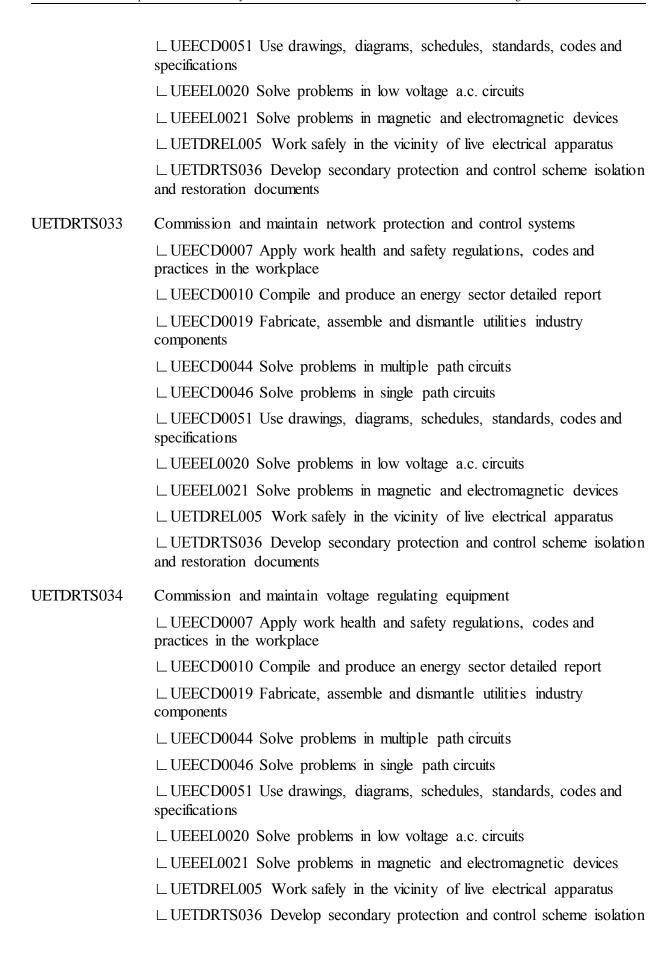


Group E: Protection (Testing)

Approved Page 12 of 27

UEECD0010	Compile and produce an energy sector detailed report
UEECD0019	Fabricate, assemble and dismantle utilities industry components L UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEECD0036	Provide engineering solutions for problems in complex multiple path circuits
UEECD0039	Provide solutions to basic engineering computational problems LUEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UETDREL005	Work safely in the vicinity of live electrical apparatus
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UETDRTS029	Commission and maintain communication equipment
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟UEECD0010 Compile and produce an energy sector detailed report
	∟ UEECD0019 Fabricate, assemble and dismantle utilities industry components
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path 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
	∟UETDREL005 Work safely in the vicinity of live electrical apparatus
	∟UETDRTS036 Develop secondary protection and control scheme isolation and restoration documents
UETDRTS032	Commission and maintain metering schemes
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟UEECD0010 Compile and produce an energy sector detailed report
	∟ UEECD0019 Fabricate, assemble and dismantle utilities industry components
	∟ UEECD0044 Solve problems in multiple path circuits
	∟UEECD0046 Solve problems in single path circuits

Approved Page 13 of 27

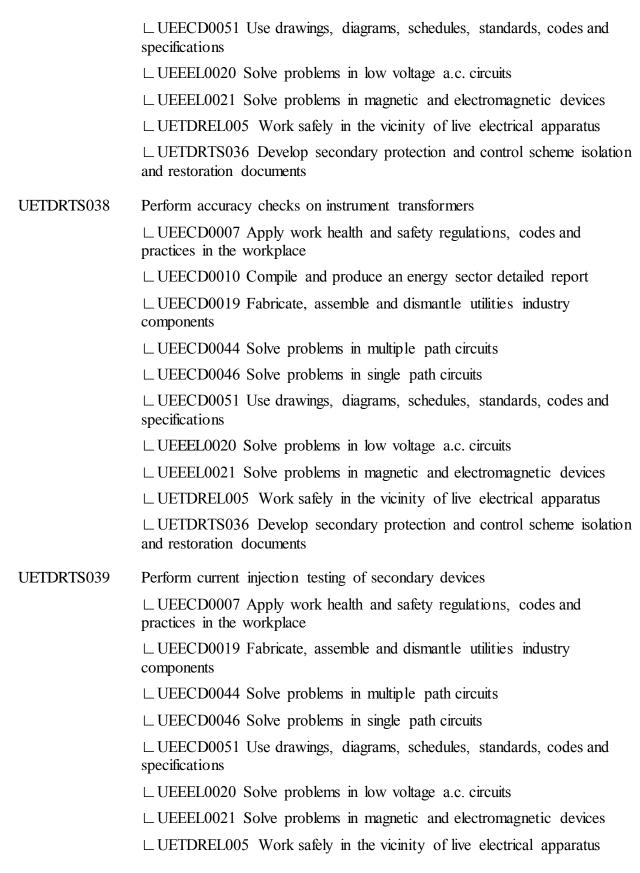


Approved Page 14 of 27

and restoration documents

UETDRTS035	Conduct evaluation of network protection and control system faults
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟UEECD0010 Compile and produce an energy sector detailed report
	∟UEECD0019 Fabricate, assemble and dismantle utilities industry components
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path 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
	∟UETDREL005 Work safely in the vicinity of live electrical apparatus
	∟UETDRTS036 Develop secondary protection and control scheme isolation and restoration documents
UETDRTS036	Develop secondary protection and control scheme isolation and restoration documents
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path 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
	∟UETDREL005 Work safely in the vicinity of live electrical apparatus
UETDRTS037	Maintain and calibrate protection relays and meters
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0010 Compile and produce an energy sector detailed report
	∟UEECD0019 Fabricate, assemble and dismantle utilities industry components
	∟UEECD0044 Solve problems in multiple path circuits
	∟UEECD0046 Solve problems in single path circuits

Approved Page 15 of 27



Group F: Protection and Metering (Testing)

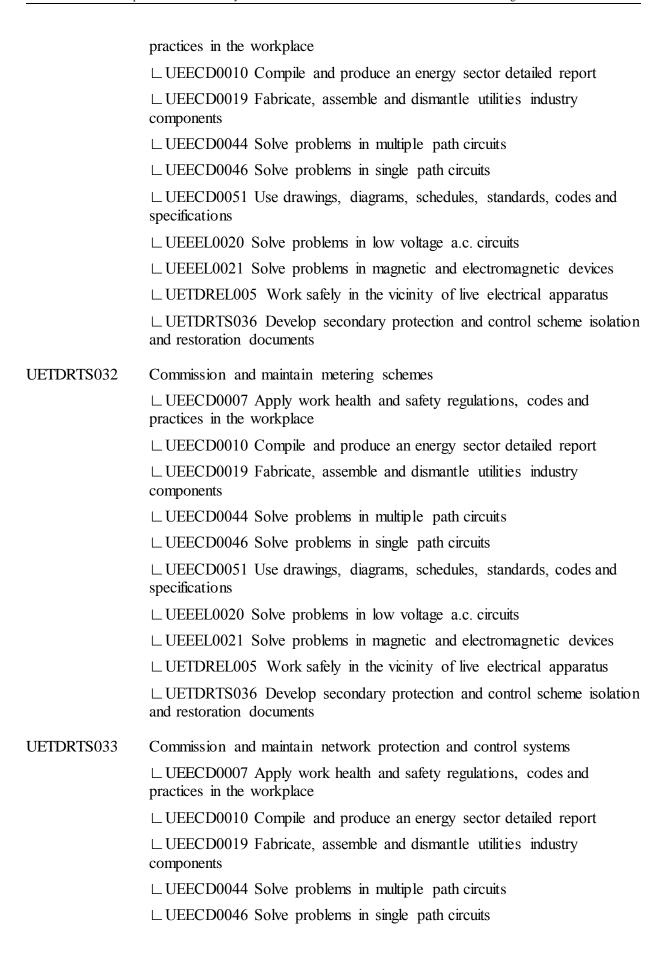
Approved Page 16 of 27

UEECD0010	Compile and produce an energy sector detailed report
UEECD0019	Fabricate, assemble and dismantle utilities industry components LUEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEECD0036	Provide engineering solutions for problems in complex multiple path circuits
UEECD0039	Provide solutions to basic engineering computational problems LUEECD0007 Apply work health and safety regulations, codes and
	practices in the workplace
UEEEL0019	Solve problems in direct current (d.c.) machines
	☐ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟UEEEL0021 Solve problems in magnetic and electromagnetic devices and
	∟ UEECD0043 Solve problems in direct current circuits
	LUEECD0044 Solve problems in multiple path circuits LUEECD0046 S. L.
	∟ UEECD0046 Solve problems in single path circuits
UETDREL005	Work safely in the vicinity of live electrical apparatus
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UETDRTS028	Calibrate, verify and certify revenue metering/energy measurement instruments
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟UEECD0019 Fabricate, assemble and dismantle utilities industry components
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path 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

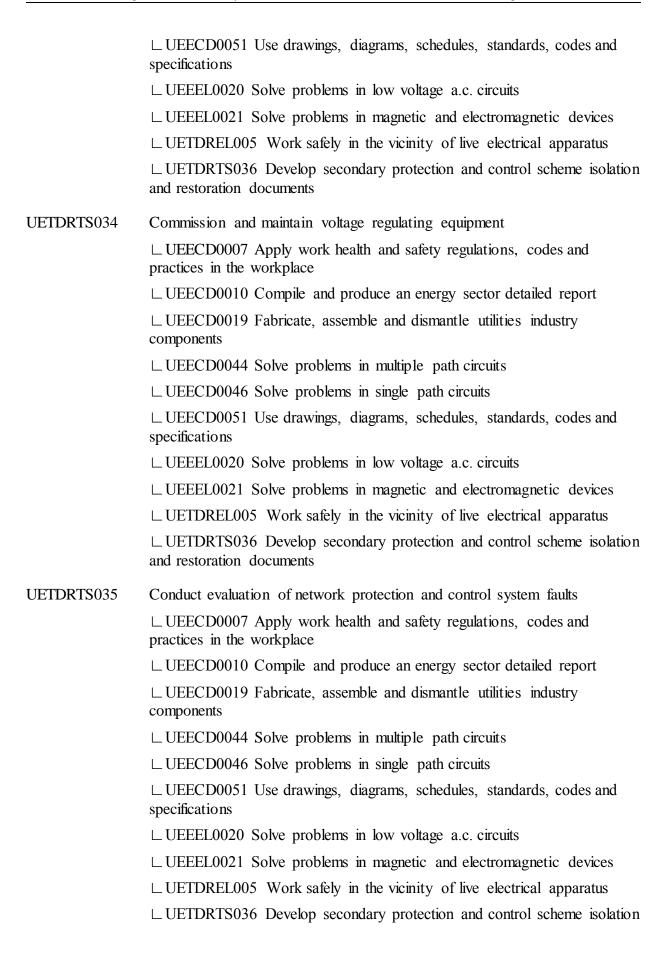
Approved Page 17 of 27

LUETDREL005 Work safely in the vicinity of live electrical apparatus UETDRTS029 Commission and maintain communication equipment LUEECD0007 Apply work health and safety regulations, codes and practices in the workplace ∟ UEECD0010 Compile and produce an energy sector detailed report ∟ UEECD0019 Fabricate, assemble and dismantle utilities industry components ∟ UEECD0044 Solve problems in multiple path circuits ∟ UEECD0046 Solve problems in single path 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 ∟ UETDREL005 Work safely in the vicinity of live electrical apparatus ∟ UETDRTS036 Develop secondary protection and control scheme isolation and restoration documents UETDRTS030 Commission and maintain complex energy/revenue metering schemes ∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace ∟ UEECD0010 Compile and produce an energy sector detailed report LUEECD0019 Fabricate, assemble and dismantle utilities industry components ∟ UEECD0044 Solve problems in multiple path circuits ∟ UEECD0046 Solve problems in single path circuits ∟ UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications LUEEEL0020 Solve problems in low voltage a.c. circuits ∟ UEEEL0021 Solve problems in magnetic and electromagnetic devices ∟ UETDREL005 Work safely in the vicinity of live electrical apparatus LUETDRTS031 Commission and maintain energy/revenue metering schemes ∟ UETDRTS036 Develop secondary protection and control scheme isolation and restoration documents UETDRTS031 Commission and maintain energy/revenue metering schemes LUEECD0007 Apply work health and safety regulations, codes and

Approved Page 18 of 27



Approved Page 19 of 27



Approved Page 20 of 27

and restoration documents

UETDRTS036	Develop secondary protection and control scheme isolation and restoration documents
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path 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
	∟UETDREL005 Work safely in the vicinity of live electrical apparatus
UETDRTS037	Maintain and calibrate protection relays and meters
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0010 Compile and produce an energy sector detailed report
	∟UEECD0019 Fabricate, assemble and dismantle utilities industry components
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path 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
	∟ UETDREL005 Work safely in the vicinity of live electrical apparatus
	$\hfill \ensuremath{\square}$ UETDRTS036 Develop secondary protection and control scheme isolation and restoration documents
UETDRTS038	Perform accuracy checks on instrument transformers
	∟ UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟ UEECD0010 Compile and produce an energy sector detailed report
	∟UEECD0019 Fabricate, assemble and dismantle utilities industry components
	∟ UEECD0044 Solve problems in multiple path circuits
	∟ UEECD0046 Solve problems in single path circuits

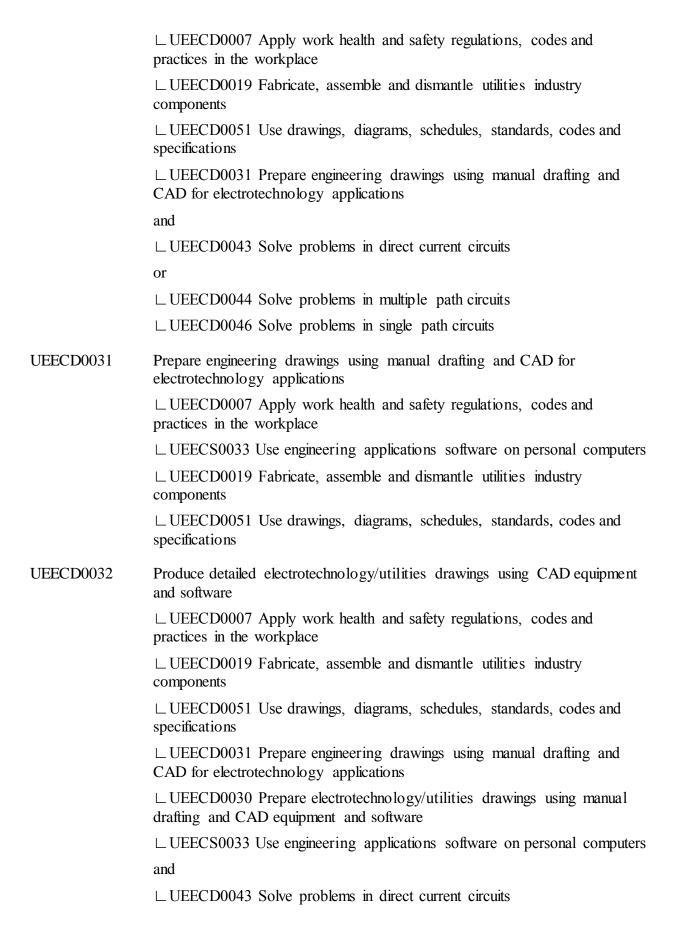
Approved Page 21 of 27

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
 UETDREL005 Work safely in the vicinity of live electrical apparatus
 UETDRTS036 Develop secondary protection and control scheme isolation and restoration documents

Group G: General Electives

BSBFIN501	Manage budgets and financial plans
BSBHRM523	Coordinate the learning and development of teams and individuals
BSBINS501	Implement information and knowledge management systems
BSBLDR522	Manage people performance
BSBOPS502	Manage business operational plans
BSBOPS505	Manage organisational customer service
BSBPEF501	Manage personal and professional development
BSBSTR501	Establish innovative work environments
BSBSTR502	Facilitate continuous improvement
BSBSUS511	Develop workplace policies and procedures for sustainability
BSBTWK502	Manage team effectiveness
TLIF0021	Administer the implementation of fatigue management strategies
TLIF2010	Apply fatigue management strategies
UEECD0019	Fabricate, assemble and dismantle utilities industry components LUEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEECD0030	Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software
	∟UEECS0033 Use engineering applications software on personal computers

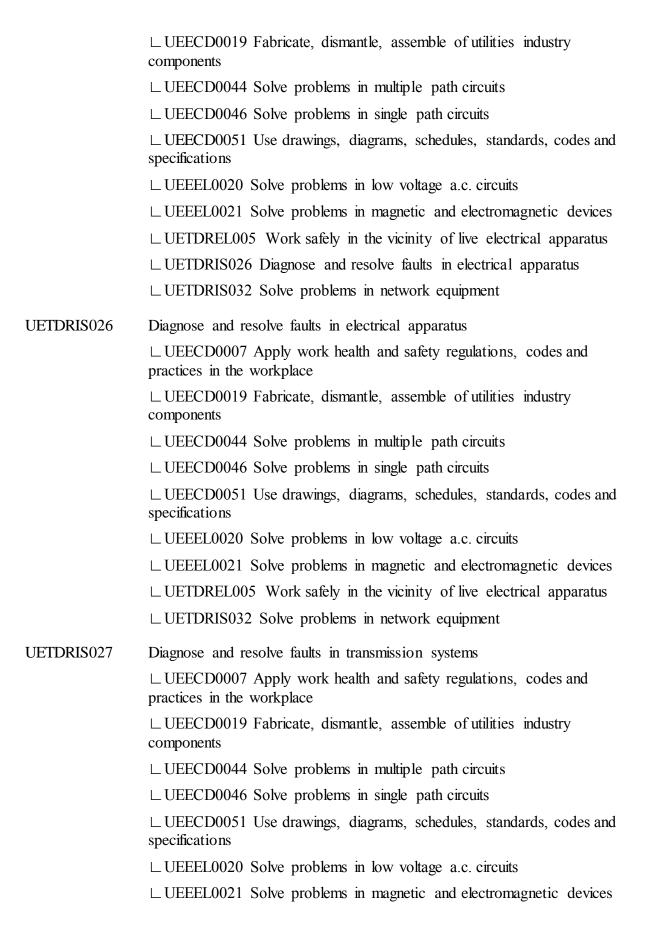
Approved Page 22 of 27



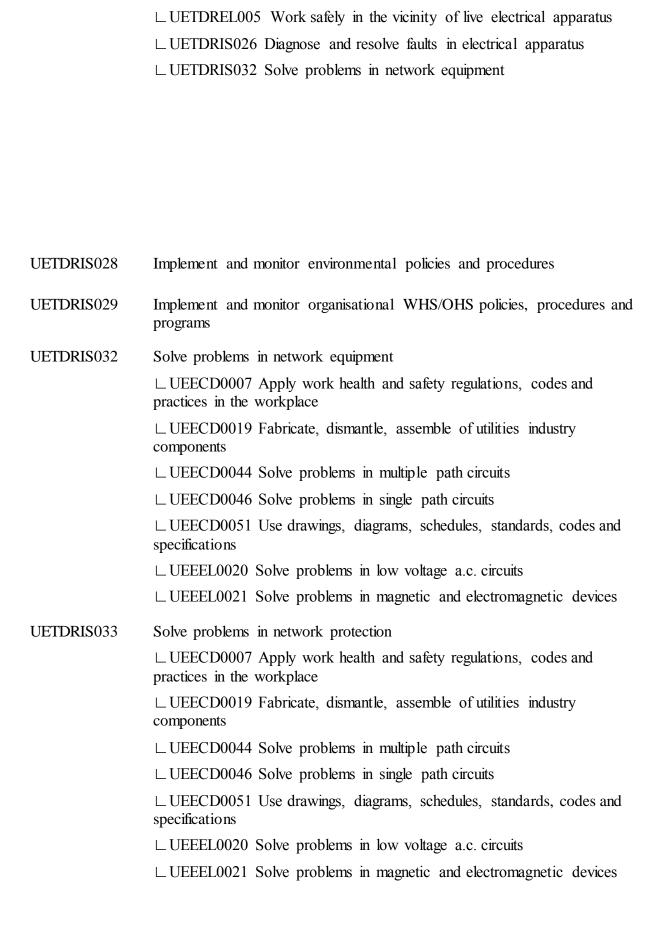
Approved Page 23 of 27

	or ∟ UEECD0044 Solve problems in multiple path circuits ∟ UEECD0046 Solve problems in single path circuits
UEECD0036	Provide engineering solutions for problems in complex multiple path circuits
UEECD0039	Provide solutions to basic engineering computational problems LUEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEECO0001	Estimate electrotechnology projects
UEECS0033	Use engineering applications software on personal computers
UEEEL0019	Solve problems in direct current (d.c.) machines
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
	∟UEEEL0021 Solve problems in magnetic and electromagnetic devices and
	∟UEECD0043 Solve problems in direct current circuits
	or
	∟ UEECD0044 Solve problems in multiple path circuits
	∟UEECD0046 Solve problems in single path circuits
UEEEL0062	Provide engineering solutions to problems in complex polyphase power circuits
	∟UEECD0036 Provide engineering solutions for problems in complex multiple path circuits
	∟ UEEEL0020 Solve problems in low voltage a.c. circuits
UEEIC0012	Develop structured programs to control external devices
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEPOPS030	Coordinate power generation
UEPOPS038	Evaluate cost estimations and initiate appropriate solutions
	∟ UEECO0001 Estimate electrotechnology projects
UETDRIS025	Diagnose and resolve faults in distribution systems
	∟UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

Approved Page 24 of 27



Approved Page 25 of 27



Approved Page 26 of 27

□ UETDREL005 Work safely in the vicinity of live electrical apparatus
 □ UETDRIS032 Solve problems in network equipment

Qualification Mapping Information

This qualification replaces and is not equivalent to UET60221 Advanced Diploma of ESI - Power Systems

Links

Companion Volume Implementation Guides are found in VETNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=229bace1-b7bc-4653-9300-dffb13ecfad7

Approved Page 27 of 27