Training & Assessment Strategy

UEE30820 Certificate III in Electrotechnology Electrician

Relates to standards:	1.1 - 1.4 Standards for Registered Training Organisations (RTOs) 2015 2.6, 2.8 ACT Standards Compliance Guide for Australian Apprenticeships
Appendices:	Appendix A – UEE30820 Qualification Outline – Available at www.gets.edu.au Appendix B – Recognition of Prior Learning & Credit Transfer Policy – Available at www.gets.edu.au
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1. Overview

Registered Training Organisation (RTO), Global Energy Training Solutions (GETS), RTO code 41319, has prepared this Training and Assessment Strategy (TAS) which aims to provide a transparent and accessible understanding of our operations and responsibilities to our stakeholders.

Learners require flexible, accessible and sufficient learning opportunities to develop performance and knowledge skills prior to assessment activities.

Assessment activities are required to be conducted in a fair and flexible manner while maintaining valid and reliable assessment judgements.

Our role in promoting and ensuring critical safety and operational standards in the electrical industry is acknowledged and taken with the greatest level of responsibility.

2. Training Product

Training products to which the strategy relates

This training and assessment strategy relates to;

- all training and assessment services offered.
- the electrical qualification (UEE30820) core and elective units.
- stand-alone units offered to participants not enrolled in the electrical qualification (UEE30820).

Codes and titles

UEE30820 Certificate III in Electrotechnology Electrician:

- The qualification
- Core units of competency offered as stand-alone units
- Elective units of competency offered as stand-alone units:
  - UEERE0054 - Conduct site survey for grid-connected photovoltaic and battery storage systems
  - UEERE0081 - Install photovoltaic systems to power conversion equipment

- UEERE0080 - Install photovoltaic power conversion equipment to grid
- UEERE0078 - Install battery storage to power conversion equipment
- UEERE0077 - Install battery storage equipment power conversion equipment to grid
- UEECD0028 - Plan an integrated cabling installation system
- UEEDV0005 - Install and maintain cabling for multiple access to telecommunication services
- UEEDV0008 - Install, modify and verify coaxial and structured communication copper cabling

Additional registration units:

- UEERE0061 - Design grid-connected photovoltaic power supply systems
- UEERE0060 - Design grid-connected battery storage systems
- UEEDV0006 - Install and modify optical fibre performance data communication cabling
- UEERE0051 - Apply electrical principles to renewable energy design

For full learner cohort information see Section 4. Target group and Section 7. Duration and Scheduling

3. Core and Elective components

Core unit codes, titles and our abbreviated names

1st year

Orientation:
- UEECO0023 - Participate in electrical work and competency development activities

WH&S:
- UEECD0007 - Apply work health and safety regulations, codes and practices in the workplace

Workshop:
- UEECD0019 - Fabricate, assemble and dismantle utilities industry components

Drawings:
- UEECD0051 - Use drawings, diagrams, schedules, standards, codes and specifications

Fixings:
- UEECD0020 - Fix and secure electrotechnology equipment

CPR:
- HLTAID009 - Provide cardiopulmonary resuscitation

Live Rescue:
- UETDRRF004 - Perform rescue from a live LV panel

Series DC:
- UEECD0046 - Solve problems in single path circuits

Parallel DC:
- UEECD0044 - Solve problems in multiple path circuits

Cables:
- UEEEL0023 - Terminate cables, cords and accessories for low voltage circuits

Magnetism:
- UEEEL0021 - Solve problems in magnetic and electromagnetic devices

DC Machines:
- UEEEL0019 - Solve problems in direct current (d.c.) machines

2nd year

AC Theory:
- UEEEL0020 - Solve problems in low voltage a.c. circuits

Transformers:
- UEEEL0025 - Test and connect transformers

AC Machines:
- UEEEL0024 - Test and connect alternating current (a.c.) rotating machines

Environmental:
- UEERE0001 - Apply environmentally and sustainable procedures in the energy sector

Power:
- UEEEL0010 - Evaluate and modify low voltage socket outlets circuits

Lighting:
- UEEEL0009 - Evaluate and modify low voltage lighting circuits, equipment and controls

Risk Assessment:
- UEECD0016 - Document and apply measures to control WHS risks associated with electrotechnology work

Protection Methods:
- UEEEL0003 - Arrange circuits, control and protection for electrical installations

Alternative Supplies:
- UEEEL0047 - Identify, shut down and restart systems with alternate supplies

Testing:

Heating:
- UEEEL0008 - Evaluate and modify low voltage heating equipment and controls
- UEEEL0014 - Isolate, test and troubleshoot low voltage electrical circuits

3rd year

Cable Selection:
- UEEEL0018 - Select wiring systems and select cables for low voltage electrical installations

Control Circuits:
- UEEEL0005 - Develop and connect electrical control circuits

Equipment Install:
- UEEEL0012 - Install low voltage wiring, appliances, switchgear and associated accessories

+ Electives

4th year

Capstone:
- UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations

Elective units offered, unit codes, titles and our abbreviated names

Grid Connect/Site Survey: (30 points)
- UEERE0054 - Conduct site survey for grid-connected photovoltaic and battery storage systems

Solar Install: (30 points)
- UEERE0081 - Install photovoltaic systems to power conversion equipment

Solar Inverter Install: (30 points)
- UEERE0080 - Install photovoltaic power conversion equipment to grid

Solar Safety: (20 points)
- UEERE0049 - Apply safe work practices in the rooftop solar industry

Battery Install: (30 points)
- UEERE0078 - Install battery storage to power conversion equipment

Battery Inverter Install: (30 points)
- UEERE0077 - Install battery storage equipment power conversion equipment to grid

ACMA: (80 points)
- UEEDV0005 - Install and maintain cabling for multiple access to telecommunication services

Structured and Coax: (40 points)
- UEEDV0008 - Install, modify and verify coaxial and structured communication copper cabling

Stand-alone units offered, unit codes, titles and our abbreviated names

As per electives above and

Solar Design:
- UEERE0061 - Design grid-connected photovoltaic power supply systems

Battery Design:
- UEERE0060 - Design grid-connected battery storage systems

Fibre:
- UEEDV0006 - Install and modify optical fibre performance data communication cabling

Electrical Principles for Non-electricians:
- UEERE0051 - Apply electrical principles to renewable energy design

Core units of competency prerequisite and co-requisite units

Unit of competency	Prerequisites	Co-requisite units
Orientation: UEECO0023 - Participate in electrical work and competency development activities	Nil	Nil

Unit of competency	Prerequisites		Co-requisite units
WH&S: UEECD0007 - Apply work health and safety regulations, codes and practices in the workplace	Nil		Nil
Workshop: UEECD0019 - Fabricate, assemble and dismantle utilities industry components	WH&S - UEECD0007		Nil
Drawings: UEECD0051 - Use drawings, diagrams, schedules, standards, codes and specifications	WH&S - UEECD0007		Nil
Fixings: UEECD0020 - Fix and secure electrotechnology equipment	WH&S - UEECD0007		Nil
CPR: HLTAID009 - Provide cardiopulmonary resuscitation	Nil		Nil
Live Rescue: UETDRRF004 - Perform rescue from a live LV panel	CPR - HLTAID009		Nil
Series DC: UEECD0046 - Solve problems in single path circuits	WH&S - UEECD0007		Nil
Parallel DC: UEECD0044 - Solve problems in multiple path circuits	WH&S - UEECD0007 Series DC - UEECD0046		Nil
Cables: UEEEL0023 - Terminate cables, cords and accessories for low voltage circuits	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020	Drawings - UEECD0051 Series DC - UEECD0046 Parallel DC - UEECD0044	Nil
Magnetism: UEEEL0021 - Solve problems in magnetic and electromagnetic devices	WH&S - UEECD0007 Series DC - UEECD0046 Parallel DC - UEECD0044		Nil
DC Machines: UEEEL0019 - Solve problems in direct current (d.c.) machines	Series DC - UEECD0046 Parallel DC - UEECD0044 Magnetism - UEEEL0021		Nil
AC Theory: UEEEL0020 - Solve problems in low voltage a.c. circuits	WH&S - UEECD0007 Series DC - UEECD0046 Parallel DC - UEECD0044	Magnetism - UEEEL0021	Nil
Transformers: UEEEL0025 - Test and connect transformers	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051 Series DC - UEECD0046	Parallel DC - UEECD0044 Cables - UEEEL0023 Magnetism - UEEEL0021 DC Machines - UEEEL0019 AC Theory - UEEEL0020	Nil
AC Machines: UEEEL0024 - Test and connect alternating current (a.c.) rotating machines	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051 Series DC - UEECD0046	Parallel DC - UEECD0044 Cables - UEEEL0023 Magnetism - UEEEL0021 DC Machines - UEEEL0019 AC Theory - UEEEL0020	Nil

Unit of competency	Prerequisites		Co-requisite units
Environmental: UEERE0001 - Apply environmentally and sustainable procedures in the energy sector	Nil		Nil
Power: UEEEL0010 - Evaluate and modify low voltage socket outlets circuits	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051 Series DC - UEECD0046	Parallel DC - UEECD0044 Cables - UEEEL0023 Magnetism - UEEEL0021 DC Machines - UEEEL0019 AC Theory - UEEEL0020	Nil
Heating: UEEEL0008 - Evaluate and modify low voltage heating equipment and controls	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051 Series DC - UEECD0046	Parallel DC - UEECD0044 Cables - UEEEL0023 Magnetism - UEEEL0021 DC Machines - UEEEL0019 AC Theory - UEEEL0020	Nil
Lighting: UEEEL0009 - Evaluate and modify low voltage lighting circuits, equipment and controls	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051 Series DC - UEECD0046	Parallel DC - UEECD0044 Cables - UEEEL0023 Magnetism - UEEEL0021 DC Machines - UEEEL0019 AC Theory - UEEEL0020	Nil
Risk Assessment: UEECD0016 - Document and apply measures to control WHS risks associated with electrotechnology work	WH&S - UEECD0007		Nil
Protection Methods: UEEEL0003 - Arrange circuits, control and protection for electrical installations	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051 Series DC - UEECD0046	Parallel DC - UEECD0044 Cables - UEEEL0023 Magnetism - UEEEL0021 DC Machines - UEEEL0019 AC Theory - UEEEL0020	Nil
Alternative Supplies: UEEEL0047 - Identify, shut down and restart systems with alternate supplies	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051 Series DC - UEECD0046 Parallel DC - UEECD0044	Cables - UEEEL0023 Magnetism - UEEEL0021 DC Machines - UEEEL0019 AC Theory - UEEEL0020 Protection Methods - UEEEL0003	Nil
Testing: UEEEL0014 - Isolate, test and troubleshoot low voltage electrical circuits	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051 Series DC - UEECD0046 Parallel DC - UEECD0044 Cables - UEEEL0023 Magnetism - UEEEL0021	DC Machines - UEEEL0019 AC Theory - UEEEL0020 Transformers - UEEEL0025 AC Machines - UEEEL0024 Protection Methods - UEEEL0003 Alternative supplies - UEEEL0047	Nil
Cable Selection: UEEEL0018 - Select wiring systems and select cables for low voltage electrical installations	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051 Series DC - UEECD0046 Parallel DC - UEECD0044 Cables - UEEEL0023 Magnetism - UEEEL0021 DC Machines - UEEEL0019	AC Theory - UEEEL0020 Transformers - UEEEL0025 AC Machines - UEEEL0024 Power - UEEEL0010 Heating - UEEEL0008 Lighting - UEEEL0009 Protection Methods - UEEEL0003	Nil
Control Circuits:	WH&S - UEECD0007	Magnetism - UEEEL0021	Nil

Unit of competency	Prerequisites		Co-requisite units
UEEEL0005 - Develop and connect electrical control circuits	Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051 Series DC - UEECD0046 Parallel DC - UEECD0044 Cables - UEEEL0023	DC Machines - UEEEL0019 AC Theory - UEEEL0020 Transformers - UEEEL0025 AC Machines - UEEEL0024 Protection Methods - UEEEL0003	
Equipment Install: UEEEL0012 - Install low voltage wiring, appliances, switchgear and associated accessories	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051 Series DC - UEECD0046 Parallel DC - UEECD0044 Cables - UEEEL0023 Magnetism - UEEEL0021 DC Machines - UEEEL0019 AC Theory - UEEEL0020 Transformers - UEEEL0025 AC Machines - UEEEL0024	Power - UEEEL0010 Heating - UEEEL0008 Lighting - UEEEL0009 Risk Assessment - UEECD0016 Protection Methods - UEEEL0003 Testing - UEEEL0014 Cable Selection - UEEEL0018 Control Circuits - UEEEL0005	Nil
Capstone: UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations	WH&S - UEECD0007 CPR - HLTAID009 Live Rescue - UETDRRF004 Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051 Series DC - UEECD0046 Parallel DC - UEECD0044 Magnetism - UEEEL0021 AC Theory - UEEEL0020 Transformers - UEEEL0025 AC Machines - UEEEL0024 Power - UEEEL0010 Heating - UEEEL0008	Lighting - UEEEL0009 Risk Assessment - UEECD0016 Protection Methods - UEEEL0003 Alternative Supplies - UEEEL0047 Testing - UEEEL0014 Cable Selection - UEEEL0018 Control Circuits - UEEEL0005 Equipment Install - UEEEL0012	Nil

Prerequisites for those holding an ‘Unrestricted Electrician’s Licence’

“Those holding an ‘Unrestricted Electrician’s Licence’ or equivalent issued in an Australian state or territory meet the requirements of this unit [Capstone - UEEEL0039] and its prerequisite requirements.”

Reference: https://training.gov.au/TrainingComponentFiles/UEE/UEEEL0039_R1.pdf

Elective units of competency prerequisite and co-requisite units

Unit of competency	Prerequisites	Co-requisite units
Grid Connect Site Survey: UEERE0054 - Conduct site survey for grid-connected photovoltaic and battery storage systems	Nil	Nil
Solar Install: UEERE0081 - Install photovoltaic systems	Grid Connect Site Survey - UEERE0054 Equipment Install - UEEEL0012	Nil

Unit of competency	Prerequisites		Co-requisite units
to power conversion equipment			
Solar Inverter Install: UEERE0080 - Install photovoltaic power conversion equipment to grid	Grid Connect Site Survey – UEERE0054 Equipment Install - UEEEL0012		Nil
Battery Install: UEERE0078 - Install battery storage to power conversion equipment	Grid Connect Site Survey – UEERE0054 Equipment Install - UEEEL0012		Nil
Battery Inverter Install: UEERE0077 - Install battery storage equipment power conversion equipment to grid	Grid Connect Site Survey – UEERE0054 Equipment Install - UEEEL0012		Nil
Solar Safety: UEERE0049 - Apply safe work practices in the rooftop solar industry	Nil		Nil
ACMA: UEEDV0005 - Install and maintain cabling for multiple access to telecommunication services	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020	Drawings - UEECD0051 Series DC - UEECD0046 Parallel DC - UEECD0044	Nil
Structured and Coax: UEEDV0008 - Install, modify and verify coaxial and structured communication copper cabling	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020 Drawings - UEECD0051	Series DC - UEECD0046 Parallel DC - UEECD0044 ACMA - UEEDV0005	Nil

Stand-alone units of competency prerequisite and co-requisite units

Unit of competency	Prerequisites		Co-requisite units
Solar Design: UEERE0061 - Design grid-connected photovoltaic power supply systems	Grid Connect Site Survey – UEERE0054 and Capstone – UEEEL0039 or Electrical Principles for Non-electricians - UEERE0051		Nil
Battery Design: UEERE0060 - Design grid-connected battery storage systems	Grid Connect Site Survey – UEERE0054 Solar Design - UEERE0061 and Capstone – UEEEL0039 or Electrical Principles for Non-electricians - UEERE0051		Nil
Electrical Principles for Non-electricians: UEERE0051 - Apply electrical principles to renewable energy design	Nil	Nil	Nil
Fibre: UEEDV0006 - Install and modify optical fibre performance data communication cabling	WH&S - UEECD0007 Workshop - UEECD0019 Fixings - UEECD0020	Drawings - UEECD0051 ACMA - UEEDV0005	Nil

Entry requirements

For full learner cohort and entry requirement information see:

- Section 7. Duration and Scheduling

Sequencing of delivery and assessment

See:
- Appendix A – UEE30820 Qualification Outline

4. Target Group

Definitions

Performance Evidence and Knowledge Evidence: Describe what a learner must demonstrate in order to be considered competent.

Industry Reference Committee: A committee convened by the RTO consisting of 3-4 government officials and 3-4 industry representatives. The committee meets 3 to 4 times per year.

Committee functions:
- Assess pending graduates for their eligibility to be trained and assessed in the following unit of competency:
  - Capstone:
    - UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations
- Tentatively approve a reduction in time from a standard four year apprenticeship if eligible
- Discuss and review changes or updates to our program

UEE30820 qualification enrolments

Specific needs are identified during the following enrolment activities:
- Enrolment form
- Australian Core Skills Framework assessment
- Induction and Initial Skills assessment

Electrical apprenticeship enrolments

Require an apprenticeship contract of training issued by the relevant State Training Service, e.g. Skills Canberra or Training Services NSW.

Electrical apprenticeships are commenced through an Australian Apprenticeship Support Network (Apprenticeship Network).

Stand-alone units of competency enrolments

Specific needs are identified during the following enrolment activities:
- Enrolment form
- Stand-alone units induction

Recognition of Prior Learning (RPL) and Credit Transfer (CT)

For Recognition of Prior Learning/Skills Recognition, see:
- Appendix B – Policy 2 – Recognition of Prior Learning & Credit Transfer

Qualification enrolment - Standard four year apprenticeship

Relevant sections, please see above:
- 2. Core and Elective components
- 3. Target Group:
  - UEE30820 qualification enrolments

    - Electrical apprenticeship enrolments
    - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Qualification enrolment - Australian School-Based Apprenticeship (ASBA)

Relevant sections, please see above:

- 2. Core and Elective components
- 3. Target Group:
    - UEE30820 qualification enrolments
    - Electrical apprenticeship enrolments
    - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Qualification enrolment - Applying for a reduction in time due to prior trade or experience

Examples include:

- Second trade
- Overseas electrical experience
- Engineering

A reduction in time off a standard four year apprenticeship may be approved through application to our Industry Reference Committee.

Where evidence of prior learning is demonstrated such as certification documents or work experience, Assessment Only practices may be used for some units of Competency in accordance with:

- Appendix B – Policy 2 – Recognition of Prior Learning & Credit Transfer

Relevant sections, please see above:

- 2. Core and Elective components
- 3. Target Group:
    - UEE30820 qualification enrolments
    - Electrical apprenticeship enrolments
    - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Qualification enrolment - Prior off-the-job training and assessment however competency was not achieved

Four years total inside an electrical apprenticeship contact required.

Where evidence of training and assessment is demonstrated such as an ‘Unofficial transcript’, Assessment Only practices may be used for some units of competency in accordance with:

- Appendix B – Policy 2 – Recognition of Prior Learning & Credit Transfer

Relevant sections, please see above:

- 2. Core and Elective components
- 3. Target Group:
    - UEE30820 qualification enrolments
    - Electrical apprenticeship enrolments
    - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Qualification enrolment - Australian Wiring Rules context training for overseas qualified electricians

Where an overseas electrician has been assessed by a Trades Recognition Australia certified RTO and holds an Offshore Skills Assessment Program (OSAP) certificate.

Electrical work is only permitted if a Construction Occupations Permit – Unrestricted Electrician has been issued by the local registrar, e.g. Access Canberra.

A one year program may be approved through application to our Industry Reference Committee.

The learner is required to be trained and assessed in the Australian Wiring Rules context training. This includes Performance Evidence and Knowledge Evidence for the following units of competency:

Risk Assessment:
- UEECD0016 - Document and apply measures to control WHS risks associated with electrotechnology work

Protection Methods:
- UEEEL0003 - Arrange circuits, control and protection for electrical installations

Alternative Supplies:
- UEEEL0047 - Identify, shut down and restart systems with alternate supplies

Testing:
- UEEEL0014 - Isolate, test and troubleshoot low voltage electrical circuits

Cable Selection:
- UEEEL0018 - Select wiring systems and select cables for low voltage electrical installations

Equipment Install:
- UEEEL0012 - Install low voltage wiring, appliances, switchgear and associated accessories

Capstone:
- UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations

These units have been selected as they relate to critical safety and operational requirements in the Australian Wiring Rules context.

For all other core units of competency, learners are required to be assessed in all Performance Evidence.

Electives may require being assessed in Performance Evidence and Knowledge Evidence or just Performance Evidence depending on OSAP electives awarded.

Relevant sections, please see above:
- 2. Core and Elective components
- 3. Target Group:
  - UEE30820 qualification enrolments
  - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Further information: https://www.tradesrecognitionaustralia.gov.au/programs/offshore-skills-assessment-program-osap

Qualification enrolment - Upgrade to latest training package

Learners may enrol in the qualification to upgrade to the latest training package for Verification of Currency purposes. Depending on apprenticeship eligibility this could occur inside or outside of an apprenticeship.

Relevant sections, please see above:
- 2. Core and Elective components
- 3. Target Group:
  - UEE30820 qualification enrolments
  - Electrical apprenticeship enrolments (if applicable)
  - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Stand-alone unit enrolment - Job seeker, Pre-Apprenticeship

Pre-Apprenticeships allow job seekers to be trained and assessed in units of competency outside of an apprenticeship in order to learn new non-core electrical skills and potentially improve their job prospects.

The following units of competency may be awarded to successful graduates of a Pre-Apprenticeship. These units represent the first six months of the electrical trade and can be assessed outside of an Apprenticeship using Knowledge Evidence assessments and simulated work place assessments to assess Performance Evidence.

WH&S:
- UEECD0007 - Apply work health and safety

Fixings:
- UEECD0020 - Fix and secure electrotechnology

regulations, codes and practices in the workplace

CPR:
- HLTAID009 - Provide cardiopulmonary resuscitation

Live Rescue:
- UETDRRF004 - Perform rescue from a live LV panel

Workshop:
- UEECD0019 - Fabricate, assemble and dismantle utilities industry components

equipment

Drawings:
- UEECD0051 - Use drawings, diagrams, schedules, standards, codes and specifications

Series DC:
- UEECD0046 - Solve problems in single path circuits

Parallel DC:
- UEECD0044 - Solve problems in multiple path circuits

Relevant sections, please see above:
- 2. Core and Elective components
- 3. Target Group:
  - Stand-alone units of competency enrolments
  - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Stand-alone unit enrolment - Job seeker, Lost employment

Where an apprentice has lost employment he/she is eligible and encouraged to continue attending off-the-job studies for up to six months while seeking other electrical apprenticeship employment.

The following units of competency may be achieved outside of an electrical apprenticeship: (All other units of competency will require on-site assessments and employer approval)

Orientation:
- UEECO0023 - Participate in electrical work and competency development activities

WH&S:
- UEECD0007 - Apply work health and safety regulations, codes and practices in the workplace

CPR:
- HLTAID009 - Provide cardiopulmonary resuscitation

Live Rescue:
- UETDRRF004 - Perform rescue from a live LV panel

Workshop:
- UEECD0019 - Fabricate, assemble and dismantle utilities industry components

Fixings:
- UEECD0020 - Fix and secure electrotechnology equipment

Drawings:
- UEECD0051 - Use drawings, diagrams, schedules, standards, codes and specifications

Series DC:
- UEECD0046 - Solve problems in single path circuits

Parallel DC:
- UEECD0044 - Solve problems in multiple path circuits

Environmental:
- UEERE0001 - Apply environmentally and sustainable procedures in the energy sector

Risk Assessment:
- UEECD0016 - Document and apply measures to control WHS risks associated with electrotechnology work

Solar Basics:
- UEERE0022 - Solve basic problems in photovoltaic energy apparatus and systems

Solar Design:
- UEERE0011 - Design grid-connected photovoltaic power supply systems

Solar Safety:
- UEERE0049 - Apply safe work practices in the rooftop solar industry

ACMA:
- UEEDV0005 - Install and maintain cabling for multiple access to telecommunication services

Structured and Coax:
- UEEDV0008 - Install, modify and verify coaxial and structured communication copper cabling

Relevant sections, please see above:
- 2. Core and Elective components
- 3. Target Group:
  - Stand-alone units of competency enrolments
  - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Stand-alone unit enrolment - Extra Low Voltage worker

Extra Low Voltage workers may be trained and assessed in an program that is equivalent to the following section above:

- Stand-alone unit enrolment - Job seeker, Pre-Apprenticeship

Stand-alone unit enrolment - On behalf of the ACT Education Directorate

Learners in Years 9-12 may be trained and assessed in individual units as part of a Vocational Learning Options program. The units of competency will be selected from the following section above:

- Stand-alone unit enrolment - Job seeker, Pre-Apprenticeship

Stand-alone unit enrolment - Line-worker or Cable Joiner

Line-workers and Cable Joiners may be trained and assessed in units of competency that are in common with their respective qualifications:

Relevant sections, please see above:

- 2. Core and Elective components
- 3. Target Group:
  - Stand-alone units of competency enrolments
  - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Stand-alone unit enrolment - Required for training at another Registered Training Organisation

Learners enrolled in UEE30820 or other qualifications may be trained and assessed in identical units of competency for scheduling or location reasons.

Relevant sections, please see above:

- 2. Core and Elective components
- 3. Target Group:
  - Stand-alone units of competency enrolments
  - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Stand-alone unit enrolment - Solar and/or Batteries, Installer and/or Designer - Electrical trade pathway

3rd and 4th year electrical apprentices and qualified electricians may be trained and assessed in Solar and/or Batteries as required for Clean Energy Council, Design and Install accreditation.

Applicable units of competency:

Grid Connect Site Survey:

- UEERE0054 - Conduct site survey for grid-connected photovoltaic and battery storage systems

Solar Install:

- UEERE0081 - Install photovoltaic systems to power conversion equipment

Solar Inverter Install:

- UEERE0080 - Install photovoltaic power conversion equipment to grid

Solar Design:

- UEERE0061 - Design grid-connected photovoltaic power supply systems

Battery Install:

- UEERE0078 - Install battery storage to power conversion equipment

Battery Inverter Install:

- UEERE0077 - Install battery storage equipment power conversion equipment to grid

Battery Design:

- UEERE0060 - Design grid-connected battery storage systems

Note:

- For Electrical Apprentices, Solar Design - UEERE0061 and Battery Design - UEERE0060 require

successful completion of Capstone - UEEEL0039 before competency can be achieved

Relevant sections, please see above:

- 2. Core and Elective components
- 3. Target Group:
  - Stand-alone units of competency enrolments
  - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Stand-alone unit enrolment - Solar and/or Batteries, Designer – Non-electrician pathway

Engineers may be trained and assessed in Renewable units of competency as required for Clean Energy Council, Design accreditation.

Unless prerequisites can be met, a Statement of Attendance/Statement of Completion will be issued rather than a Statement of Attainment.

A Statement of Attendance/Statement of Completion and an Engineering Degree is required for Clean Energy Council Design accreditation.

Applicable units of competency:

Electrical Principles for Non-electricians:

- UEERE0051 Apply electrical principles to renewable energy design

Grid Connect Site Survey:

- UEERE0054 - Conduct site survey for grid-connected photovoltaic and battery storage systems

Solar Design:

- UEERE0061 - Design grid-connected photovoltaic power supply systems

Battery Design:

- UEERE0060 - Design grid-connected battery storage systems

Relevant sections, please see above:

- 2. Core and Elective components
- 3. Target Group:
  - Stand-alone units of competency enrolments
  - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Stand-alone unit enrolment - Telecommunications - Electrical trade pathway

1st to 4th year electrical apprentices and qualified electricians may be trained and assessed in Telecommunications units of competency as required for ACMA Registered Cabler accreditation.

Applicable units of competency:

ACMA:

- UEEDV0005 - Install and maintain cabling for multiple access to telecommunication services

Structured and Coax:

- UEEDV0008 - Install, modify and verify coaxial and structured communication copper cabling

Fibre:

- UEEDV0006 - Install and modify optical fibre performance data communication cabling

Relevant sections, please see above:

- 2. Core and Elective components
- 3. Target Group:
  - Stand-alone units of competency enrolments
  - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Stand-alone unit enrolment - Telecommunications - Telecommunications trade pathway

Non-electrical workers may be trained in Telecommunications units of competency as required for ACMA Registered Cabler accreditation after prerequisite units of competency are met.

Applicable prerequisite units of competency:

WH&S:
- UEECD0007 - Apply work health and safety regulations, codes and practices in the workplace

Workshop:
- UEECD0019 - Fabricate, assemble and dismantle utilities industry components

Fixings:
- UEECD0020 - Fix and secure electrotechnology equipment

Drawings:
- UEECD0051 - Use drawings, diagrams, schedules, standards, codes and specifications

Series DC:
- UEECD0046 - Solve problems in single path circuits

Parallel DC:
- UEECD0044 - Solve problems in multiple path circuits

Applicable units of competency:

ACMA:
- UEEDV0005 - Install and maintain cabling for multiple access to telecommunication services

Structured and Coax:
- UEEDV0008 - Install, modify and verify coaxial and structured communication copper cabling

Fibre:
- UEEDV0006 - Install and modify optical fibre performance data communication cabling

Relevant sections, please see above:
- 2. Core and Elective components
- 3. Target Group:
  - Stand-alone units of competency enrolments
  - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Stand-alone unit enrolment - Live Rescue (LVR)

Electrical apprentices and qualified electricians may be trained and assessed in Telecommunications units of competency as required for ACMA Registered Cabler accreditation.

Applicable units of competency:

CPR:
- HLTAID009 - Provide cardiopulmonary resuscitation

Live Rescue:
- UETDRRF004 - Perform rescue from a live LV panel

Relevant sections, please see above:
- 2. Core and Elective components
- 3. Target Group:
  - Stand-alone units of competency enrolments
  - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Stand-alone unit enrolment - Directed by Access Canberra

Access Canberra may require licence applicants or an Unrestricted Electrical Work Licence holder o to complete a Skills Assessment. This is non-nationaly recognised training.

Access Canberra may require an Unrestricted Electrical Work Licence holder to be trained and assessed in specific units of competence due to a public safety concern including however not limited to:

Testing:
- UEEEL0014 - Isolate, test and troubleshoot low

Capstone:
- UEEEL0039 - Design, install and verify

voltage electrical circuits	compliance and functionality of general electrical installations

Relevant sections, please see above:

- 2. Core and Elective components
- 3. Target Group:
  - Stand-alone units of competency enrolments
  - Recognition of Prior Learning (RPL) and Credit Transfer (CT)

Stand-alone unit enrolment - Interstate enquiries

Particular care is taken to avoid training and assessing units of competency for non-electrical workers who are looking to advance their chances of attaining an electrical qualification outside of an electrical apprenticeship or Offshore Skills Assessment Program (OSAP) program.

For genuine enrolment enquiries please see relevant qualification and stand-alone sections above.

5. Mode of Delivery

Mode of delivery

The RTO provides training and assessment services that are fully off-the-job and face-to-face utilising paper based assessments.

Assessments as they relate to the workplace are required for all units of competency. These are scheduled to be conducted on or off-the-job in accordance with the tables below. Off-the-job assessments are conducted as simulated work place assessments for Performance Evidence only where suitable to do so.

Employers can opt-into profiling systems such as eProfiling or Ready Skills, however profiling is not relied upon for on-the-job evidence due to validity and sufficiency concerns.

On-line assessments and distance learning is not offered however reasonable adjustments will be made for learners that are unable to attend face-to-face training.

Apprenticeship training is offered one day per week for approximately three years to support on-the-job learning typical of a four year Australian Apprenticeship.

Electives and stand-alone units of competency are offered on Friday nights and Saturdays however some day courses are also scheduled.

At the end of an apprenticeship and pending approval of our Industry Reference Committee learners may sit their final ‘Capstone’ assessment:

- UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations

Definitions and examples

Knowledge Evidence:

- In all cases, trained and assessed off-the-job.

Performance Evidence:

- Trained and assessed on-the-job:
  - Core units of competency with the competency field - Electrical
  - Example: Orientation - UEECO0023
- Trained and assessed off-the-job:
  - Example: Live Rescue (LVR) - UETDRRF004
- Trained and assessed either on-the-job or off-the-job:
  - Core units of competency with the competency field other than Electrical

    - Off-the-job: When scheduled to attend off-the-job training and assessment
    - On-the-job: For applicants of Recognition of Prior Learning
- Trained and assessed both on-the-job and off-the-job:
    - Example: Capstone - UEEEL0039

Core units of competency Performance Evidence and Knowledge Evidence

Unit of competency	Competency field	Performance Evidence, trained and assessed	Knowledge Evidence, trained and assessed
Orientation: UEECO0023 - Participate in electrical work and competency development activities	Commercial	On-the-job	Off-the-job
WH&S: UEECD0007 - Apply work health and safety regulations, codes and practices in the workplace	Cross Discipline	On-the-job, or Off-the-job	Off-the-job
Workshop: UEECD0019 - Fabricate, assemble and dismantle utilities industry components	Cross Discipline	On-the-job, or Off-the-job	Off-the-job
Drawings: UEECD0051 - Use drawings, diagrams, schedules, standards, codes and specifications	Cross Discipline	On-the-job, or Off-the-job	Off-the-job
Fixings: UEECD0020 - Fix and secure electrotechnology equipment	Cross Discipline	On-the-job, or Off-the-job	Off-the-job
CPR: HLTAID009 - Provide cardiopulmonary resuscitation	Nil	Off-the-job	Off-the-job
Live Rescue: UETDRRF004 - Perform rescue from a live LV panel	Refresher Training	On-the-job, or Off-the-job	Off-the-job
Series DC: UEECD0046 - Solve problems in single path circuits	Cross Discipline	On-the-job, or Off-the-job	Off-the-job
Parallel DC: UEECD0044 - Solve problems in multiple path circuits	Cross Discipline	On-the-job, or Off-the-job	Off-the-job
Cables: UEEEL0023 - Terminate cables, cords and accessories for low voltage circuits	Electrical	On-the-job	Off-the-job
Magnetism: UEEEL0021 - Solve problems in magnetic and electromagnetic devices	Electrical	On-the-job	Off-the-job
DC Machines: UEEEL0019 - Solve problems in direct current (d.c.) machines	Electrical	On-the-job	Off-the-job
AC Theory: UEEEL0020 - Solve problems in low voltage a.c. circuits	Electrical	On-the-job	Off-the-job
Transformers: UEEEL0025 - Test and connect transformers	Electrical	On-the-job	Off-the-job
AC Machines: UEEEL0024 - Test and connect alternating current (a.c.) rotating machines	Electrical	On-the-job	Off-the-job
Environmental: UEERE0001 - Apply environmentally and sustainable procedures in the energy sector	Renewable Energy	On-the-job, or Off-the-job	Off-the-job

Unit of competency	Competency field	Performance Evidence, trained and assessed	Knowledge Evidence, trained and assessed
Power: UEEEL0010 - Evaluate and modify low voltage socket outlets circuits	Electrical	On-the-job	Off-the-job
Heating: UEEEL0008 - Evaluate and modify low voltage heating equipment and controls	Electrical	On-the-job	Off-the-job
Lighting: UEEEL0009 - Evaluate and modify low voltage lighting circuits, equipment and controls	Electrical	On-the-job	Off-the-job
Risk Assessment: UEECD0016 - Document and apply measures to control WHS risks associated with electrotechnology work	Cross Discipline	On-the-job, or Off-the-job	Off-the-job
Protection Methods: UEEEL0003 - Arrange circuits, control and protection for electrical installations	Electrical	On-the-job	Off-the-job
Alternative Supplies: UEEEL0047 - Identify, shut down and restart systems with alternate supplies	Electrical	On-the-job	Off-the-job
Testing: UEEEL0014 - Isolate, test and troubleshoot low voltage electrical circuits	Electrical	On-the-job	Off-the-job
Cable Selection: UEEEL0018 - Select wiring systems and select cables for low voltage electrical installations	Electrical	On-the-job	Off-the-job
Control Circuits: UEEEL0005 - Develop and connect electrical control circuits	Electrical	On-the-job	Off-the-job
Equipment Install: UEEEL0012 - Install low voltage wiring, appliances, switchgear and associated accessories	Electrical	On-the-job	Off-the-job
Capstone: UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations	Electrical	On-the-job, and Off-the-job	Off-the-job

Elective units of competency Performance Evidence and Knowledge Evidence

Unit of competency	Competency field	Performance Evidence, trained and assessed	Knowledge Evidence, trained and assessed
Grid Connect Site Survey: UEERE0054 - Conduct site survey for grid-connected photovoltaic and battery storage systems	Renewable Energy	Off-the-job	Off-the-job
Solar Install: UEERE0081 - Install photovoltaic systems to power conversion equipment	Renewable Energy	Off-the-job	Off-the-job
Solar Inverter Install: UEERE0080 - Install photovoltaic power conversion	Renewable Energy	Off-the-job	Off-the-job

Unit of competency	Competency field	Performance Evidence, trained and assessed	Knowledge Evidence, trained and assessed
equipment to grid			
Battery Inverter Install: UEERE0077 - Install battery storage equipment power conversion equipment to grid	Renewable and Sustainable Energy	Off-the-job	Off-the-job
Battery Design: UEERE0060 - Design grid-connected battery storage systems	Renewable and Sustainable Energy	Off-the-job	Off-the-job
Control Circuits Extended: UEECD0028 - Plan an integrated cabling installation system	Cross Discipline	Off-the-job	Off-the-job
ACMA: UEEDV0005 - Install and maintain cabling for multiple access to telecommunication services	Data and Voice	Off-the-job	Off-the-job
Structured and Coax: UEEDV0008 - Install, modify and verify coaxial and structured communication copper cabling	Data and Voice	Off-the-job	Off-the-job

Stand-alone units of competency Performance Evidence and Knowledge Evidence

Unit of competency	Competency field	Performance Evidence, trained and assessed	Knowledge Evidence, trained and assessed
Solar Design: UEERE0061 - Design grid-connected photovoltaic power supply systems	Renewable Energy	Off-the-job	Off-the-job
Battery Install: UEERE0078 - Install battery storage to power conversion equipment	Renewable and Sustainable Energy	Off-the-job	Off-the-job
Electrical Principles for Non-electricians: UEERE0051 Apply electrical principles to renewable energy design	Renewable Energy	Off-the-job	Off-the-job
Fibre: UEEDV0006 - Install and modify optical fibre performance data communication cabling	Data and Voice	Off-the-job	Off-the-job

6. Entry Requirements

Entry requirements - Qualification

There are no industry experience, qualifications or prior education levels required for this this qualification.

Language, Literacy and Numeracy will be assessed using our Australian Core Skills Framework (ACSF) assessment. Language, Literacy and Numeracy courses may be recommended prior to commencing the qualification.

Entry requirements - Stand-alone units

There are no industry experience, qualifications or prior education levels required for stand-alone units.

Prerequisites apply.

Entry requirements - General

The RTO does not have any physical attribute entry requirements. The Electrotechnology industry is a diverse industry, any learner engaged or looking to be engaged in employment is welcome to be trained and assessed.

Completion requirements - Qualification

Electrical experience typical of an apprenticeship is required.
See:

- 7. Duration and Scheduling:

Mandatory requirements - To practice electrical work in the workplace

Only the following types of workers can practice electrical work typical of the UEE30820 Certificate III in Electrotechnology Electrician in the workplace:

- Unrestricted Licence – Electrotechnology Systems
  - Construction Occupation Licence holder – Electrician – Unrestricted
- Unrestricted Permit – Electrotechnology Systems
  - Construction Occupation Licence holder – Electrician – Work permit
  - May work under supervision
- Apprentice Electrician – Under a contract of training
  - Participating in technical studies towards UEE30820 Certificate III in Electrotechnology Electrician
  - May work under supervision

Mandatory requirements - Construction site workers

To enter onto a construction site in the ACT, workers are required as a minimum to hold:

- White card (CPCCWHS1001 - Prepare to work safely in the construction industry)
- Asbestos awareness (10675NAT - Course in Asbestos Awareness)

Depending on the type of construction work undertaken, other training may be required including however not limited to:

- Height safety training (RIIWHS204E - Work safely at heights) or its successor.
- Confined space training (RIIWHS202E - Enter and work in confined spaces) or it's successor.
- Elevated Work Platform training (RIIHAN301E - Operate elevating work platform) or its successor.

The above courses are separate to our training courses, for further information on Construction Occupation Licensing please contact Access Canberra www.accesscanberra.act.gov.au

7. Duration and Scheduling

Sequencing of delivery and assessment

See:

- Appendix A – UEE30820 Qualification Outline

Australian Qualifications Framework (AQF) apprenticeship requirements

To meet the volume of learning requirements for the qualification, a volume of learning of four years duration through indentured training and employment typical of an Australian Apprenticeship is required.

Where extensive prior work experience and knowledge can be verified and demonstrated, the learning outcomes of the qualification may be achieved in a shorter period.

Learner cohort

Learner Type	Program	Enrolment Restrictions	Duration	Qualification Outcome	Eligible to Perform Electrical Work in the Workplace
Australian Apprentice	Apprentice Electrician	Must be under a contract of training, commenced through an Apprenticeship Network Provider	Four years on-the-job experience and part time technical studies (unless the learner has verified Recognition of Prior Learning)	Yes	Under supervision
	Australian School Based Apprentice Electrician (ASBA)			Yes, however requires full time employment after completing the ASBA	
Job seeker	Apprentice Electrician who has lost employment	Eligible to be trained and assessed off-the-job without employment for a maximum of six months	Requires recommencement of apprenticeship and the equivalent of four years on-the-job experience	Yes, however requires recommencement of apprenticeship unless learner is very close to completion	No
	Pre-Apprenticeship course		18-20 days part-time	No, must look for an apprenticeship	
Unrestricted Licence – Electrical	Up-skill to the latest training package	Nil	0.5-1 year part-time	Yes	Yes
Undergoing gap training due to not being eligible for an Unrestricted Licence – Electrical	Overseas Electrician holding an Offshore Skills Assessment Program (OSAP)	Required by Access Canberra to have an Electrical Work Permit – Unrestricted Permit Electrotechnology Systems	Typically 1 year part-time	Yes	Under supervision
	Electrical licence expired more than 5 years prior to renewal application				
	Qualification was issued more that 5 years prior to licence application				
	Similar Trade – Electrical Mechanic/Fitter				
Directed by Access Canberra due to public safety concern	Capstone - UEEEL0039	Nil	8 days part-time	No	As directed by Access Canberra
	Testing - UEEEL0014		3 days part-time		
	Skills Assessment non-nationally recognised assessment and/or training		2 to 8 days		
Stand-alone unit enrolments	Extra Low Voltage worker (3-6 units of competency)	Nil	1 semester part-time	No	No
	On behalf of the ACT Education Directorate: (2-3 units of competency)	Nil	12-18 days part-time	No	
	Line-worker or Cable Joiner	Enrolled at another RTO	3 semesters part-time studies	No	

Learner Type	Program	Enrolment Restrictions	Duration	Qualification Outcome	Eligible to Perform Electrical Work in the Workplace
	(1-7 units of competency)				
	Required for training at another Registered Training Organisation (1-7 units of competency)		1-2 semesters part-time	No	Under supervision
	Solar and/or Batteries, Installer and/or Designer - Electrical trade pathway (2-6 units of competency)	Electrician or 4th year Electrical Apprentice	6-10 days part-time	No	Electrician, yes. Supervision required for Apprentice
	Solar and/or Batteries, Designer - Non-electrician pathway (3-4 units of competency)	Engineering certificate	10-14 days part-time	No	No
	Telecommunications - Electrical trade pathway (1-3 units of competency)	Electrician, 1st to 4th year electrical apprentice or otherwise meet prerequisites	3-9 days part-time	No	Electrician, yes. Supervision required for Apprentice
	Telecommunications - Telecommunications trade pathway (1-3 units of competency)	6 x prerequisites	1 year part-time	No	No
	Live Rescue (LVR) (2 units of competency)	1 x prerequisites	2 days part time	No	Electrician, yes. Supervision required for Apprentice

Variations due to specific learning needs - Tutorials

Tutorials are provided free of charge to all industry learners and are suitable for learners who require core skills tutoring, Electrotechnology tutoring, a place to study or a time to catch up on outstanding assessment items.

Learners self-assess whether or not they need to attend tutorials, however the RTO encourages the following types of learners to attend tutorials:

- Learners who may be falling behind for any reason
- Learners who have been identified as requiring additional support through our Australian Core Skills Framework (ACSF) assessments
- Learners that have self identified as requiring additional support through our Initial Skills Assessment

Additional support and learning opportunities including:

- One-on-one tutoring
- Small group training sessions
- Sit or resit assessments
- The opportunity to ask questions related to technical studies
- The opportunity to ask questions related to work activities
- Practical demonstrations
- Practical learning opportunities

- Additional reference materials

Variations due to specific learning needs - Reasonable adjustments

Reasonable adjustments will be considered and applied where possible for learners experiencing difficulties.

An assessment process or assessment that has been adjusted is assessed at the same academic rigour as the original assessment process or assessment to ensure evidence of competency can be properly satisfied.

Licensed outcome

Graduates of the qualification may apply to the relevant state authority for an unrestricted Electrical Licence.
- In ACT, Access Canberra – Construction Occupations Licensing
- In NSW, NSW Fair Trading

Training and assessment activity abbreviations

Tech Day: Technical Day - The day learning activities will occur

Ass. Day: Assessment Day - The day assessment activities will occur

Training and assessment activities - First year Electrical trade - Term/stage 1

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
Orientation: UEECO0023 - Participate in electrical work and competency development activities	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Enrolment & Induction	1 / 1	1 / 1
		Knowledge Evidence 2 of 2 – Orientation	1 / 1	1 / 1
WH&S: UEECD0007 - Apply work health and safety regulations, codes and practices in the workplace	Performance Evidence – When using Simulated Work Place Assessments	Performance Evidence 1 of 2 – Risk assessment	1 / 2	1 / 2
		Performance Evidence 2 of 2 – Safe isolation	1 / 2	1 / 2
	Performance Evidence – When using Workplace Assessments	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 2 – SWMS	2 / 2	2 / 2
		Knowledge Evidence 2 of 2 – Life support & Legal	2 / 2	2 / 2
Workshop: UEECD0019 - Fabricate, assemble and dismantle utilities industry components	Performance Evidence – When using Simulated Work Place Assessments	Performance Evidence 1 of 3 – Sheet metal	3 / 5	4 / 5
		Performance Evidence 2 of 3 – Techniques	3 / 5	4 / 5
		Performance Evidence 3 of 3 – Project	3 / 5	3,5/5
	Performance Evidence – When using Workplace Assessments	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Engineering drawing & Marking out	1-2/2	2 / 2
		Knowledge Evidence 2 of 2 – Materials &	1-2/2	2 / 2

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
		Tools		

Training and assessment activities - First year Electrical trade - Term/stage 2

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
Drawings: UEECD0051 - Use drawings, diagrams, schedules, standards, codes and specifications	Performance Evidence – When using Simulated Work Place Assessments	Performance Evidence 1 of 1 – Drawings	5 / 5	5 / 5
	Performance Evidence – When using Workplace Assessments	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 3 – Plans	1 / 5	2 / 5
		Knowledge Evidence 2 of 3 – Diagrams	2-3/5	4 / 5
		Knowledge Evidence 3 of 3 – Standards & Sequencing	4 / 5	5 / 5
Fixings: UEECD0020 - Fix and secure electrotechnology equipment	Performance Evidence – When using Simulated Work Place Assessments	Performance Evidence 1 of 1 – Install fixings	1 / 1	1 / 1
	Performance Evidence – When using Workplace Assessments	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 1 - Fixings	1 / 1	1 / 1
CPR: HLTAID009 - Provide cardiopulmonary resuscitation	Performance Evidence	Performance Evidence 1 of 1 – Provide CPR	1 / 1	1 / 1
	Knowledge Evidence	Knowledge Evidence 1 of 1 – Technique & Legal	1 / 1	1 / 1
Live Rescue: UETDRRF004 - Perform rescue from a live LV panel	Performance Evidence – When using Simulated Work Place Assessments	Performance Evidence 1 of 1 – Perform live rescue	1 / 1	1 / 1
	Performance Evidence – When using Workplace Assessments	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 1 – Live rescue	1 / 1	1 / 1

Training and assessment activities - First year Electrical trade - Term/stage 3

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
Series DC: UEECD0046 - Solve problems in single path circuits	Performance Evidence – When using Simulated Work Place Assessments	Performance Evidence 1 of 1 – Series DC	4 / 4	4 / 4
	Performance Evidence – When using Workplace Assessments	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
	Knowledge Evidence	Knowledge Evidence 1 of 3 – Electricity sources & uses	1 / 4	2 / 4
		Knowledge Evidence 2 of 3 – Electrical properties	2 / 4	3 / 4
		Knowledge Evidence 3 of 3 – Series circuits	3 / 4	4 / 4
Parallel DC: UEECD0044 - Solve problems in multiple path circuits	Performance Evidence – When using Simulated Work Place Assessments	Performance Evidence 1 of 1 – Parallel DC	4 / 6	4 / 6
	Performance Evidence – When using Workplace Assessments	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 4 – Resistance factors & Meters	1 / 6	2 / 6
		Knowledge Evidence 2 of 4 – Parallel circuits	2 / 6	3 / 6
		Knowledge Evidence 3 of 4 – Series/parallel circuits	3 / 6	4 / 6
		Knowledge Evidence 4 of 4 – Capacitors	5-6/6	6 / 6

Training and assessment activities - First year Electrical trade - Term/stage 4

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
Cables: UEEEL0023 - Terminate cables, cords and accessories for low voltage circuits	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 3 – Cords & Plugs	1 / 3	1 / 3
		Knowledge Evidence 2 of 3 – Cables & Standards	2 / 3	3 / 3
		Knowledge Evidence 3 of 3 – Protection & Terminations	3 / 3	3 / 3
Magnetism: UEEEL0021 - Solve problems in magnetic and electromagnetic devices	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Magnetic circuits	1-2/4	3 / 4
		Knowledge Evidence 1 of 2 – Self & Mutual induction	3-4/4	4 / 4
DC Machines: UEEEL0019 - Solve problems in direct current (d.c.) machines	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Motors & Efficiency	1 / 3	3 / 3
		Knowledge Evidence 2 of 2 – Generators	2 / 3	3 / 3

Training and assessment activities - Second year Electrical trade - Term/stage 1

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
AC Theory: UEEEL0020 - Solve problems in low voltage a.c. circuits	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 7 – Pythagoras, Trigonometry & Sine waves	1 /10	2 / 10
		Knowledge Evidence 2 of 7 – Series & parallel Res. Ind. Cap. (RLC)	2-4 /10	4 / 10
		Knowledge Evidence 3 of 7 – Power factor	5 /10	6 / 10
		Knowledge Evidence 4 of 7 – Harmonics & Resonance	6 /10	7 / 10
		Knowledge Evidence 5 of 7 – Three phase calculations	7-8 /10	9 / 10
		Knowledge Evidence 6 of 7 – Three phase concepts	9 /10	10 / 10
		Knowledge Evidence 7 of 7 – Energy assessment	10 /10	10 / 10

Training and assessment activities - Second year Electrical trade - Term/stage 2

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
Transformers: UEEEL0025 - Test and connect transformers	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Construction & Types	1 / 2	2 / 2
		Knowledge Evidence 1 of 2 – Characteristics	2 / 2	2 / 2
AC Machines: UEEEL0024 - Test and connect alternating current (a.c.) rotating machines	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 4 – Types & Operation	1-4/4	4 / 4
		Knowledge Evidence 2 of 4 – Motor protection	1-2/4	3 / 4
		Knowledge Evidence 3 of 4 – Alternators	3 / 4	4 / 4
		Knowledge Evidence 4 of 4 – Service & Faults	1-2/4	3 / 4

Training and assessment activities - Second year Electrical trade - Term/stage 3

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
Environmental: UEERE0001 - Apply environmentally and sustainable procedures in the energy sector	Performance Evidence – When using Simulated Work Place Assessments	Performance Evidence 1 of 1 – Energy audit	1 / 2	1 / 2
		Performance Evidence 1 of 2 – Workplace environmental initiatives	2 / 2	2 / 2
	Performance Evidence – When using Workplace Assessments	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Climate change imperatives	1 / 2	1 / 2
		Knowledge Evidence 2 of 2 – Pay-back periods	2 / 2	2 / 2
Power: UEEEL0010 - Evaluate and modify low voltage socket outlets circuits	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Loads into circuits	1 / 2	2 / 2
		Knowledge Evidence 1 of 2 – Installation & Testing	2 / 2	2 / 2
Heating: UEEEL0008 - Evaluate and modify low voltage heating equipment and controls	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 3 – Heat transfer	1 / 2	2 / 2
		Knowledge Evidence 2 of 3 – Heating control	1 / 2	2 / 2
		Knowledge Evidence 3 of 3 – Repair	2 / 2	2 / 2
Lighting: UEEEL0009 - Evaluate and modify low voltage lighting circuits, equipment and controls	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 3 – Luminaries & Smoke alarms	1 / 2	2 / 2
		Knowledge Evidence 2 of 3 – Control	1 / 2	2 / 2
		Knowledge Evidence 3 of 3 – Switching	2 / 2	2 / 2
Risk Assessment: UEECD0016 - Document and apply measures to control WHS risks associated with electrotechnology work	Performance Evidence – When using Simulated Work Place Assessments	Performance Evidence 1 of 1 – Site safety audit	1 / 1	1 / 1
	Performance Evidence – When using Workplace Assessments	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Electrical risk assessment	1 / 1	1 / 1
		Knowledge Evidence 2 of 2 – Construction risk assessment	1 / 1	1 / 1

Training and assessment activities - Second year Electrical trade - Term/stage 4

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
Protection Methods: UEEEL0003 - Arrange circuits, control and protection for electrical installations	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 6 – Safety principles	1 / 5	1 / 5
		Knowledge Evidence 2 of 6 – Earthing	2 / 5	3 / 5
		Knowledge Evidence 3 of 6 – Overcurrent, Fault Loop (EFLI) & RCDs	3 / 5	4 / 5
		Knowledge Evidence 4 of 6 – Prospective short-circuit current (PSSC)	4 / 5	5 / 5
		Knowledge Evidence 5 of 6 – Circuit arrangement	5 / 5	5 / 5
		Knowledge Evidence 6 of 6 – Switchboards	5 / 5	5 / 5
Alternative Supplies: UEEEL0047 - Identify, shut down and restart systems with alternate supplies	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Solar & Uninterruptible supplies (UPS)	1 / 2	2 / 2
		Knowledge Evidence 2 of 2 – Special electrical installations	2 / 2	2 / 2
Testing: UEEEL0014 - Isolate, test and troubleshoot low voltage electrical circuits	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 4 – Testing concepts	1 / 3	1 / 3
		Knowledge Evidence 2 of 5 – Visual inspection & De-energisation	1 / 3	1 / 3
		Knowledge Evidence 3 of 5 – Earthing, IR & Interconnections	2 / 3	2 / 3
		Knowledge Evidence 4 of 5 – Polarity, EFLI & RCD’s	3 / 3	3 / 3
		Knowledge Evidence 5 of 5 – Final test procedures	3 / 3	3 / 3

Training and assessment activities - Third year Electrical trade - Term/stage 1

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
Cable Selection: UEEEL0018 - Select wiring systems and select cables for low voltage electrical installations	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 7 – Maximum	1-2/8	3 / 8

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
		demand & CB selection		
		Knowledge Evidence 2 of 7 – Current carrying capacity	3-4/8	5 / 8
		Knowledge Evidence 3 of 7 – Voltage drop & EFLI	5-6/8	7 / 8
		Knowledge Evidence 4 of 7 – Prospective current (PSCC) & Temp (SCTR)	7 / 8	7 / 8
		Knowledge Evidence 5 of 7 – Switchboards & Metering	7 / 8	7 / 8
		Knowledge Evidence 6 of 7 – Final subcircuits	8 / 8	8 / 8
		Knowledge Evidence 7 of 7 – Design & Safety	8 / 8	8 / 8

Training and assessment activities - Third year Electrical trade - Term/stage 2

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
Control Circuits: UEEEL0005 - Develop and connect electrical control circuits	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 7 – Auto/Manual/Off 24 hr Clock	1 / 7	1 / 7
		Knowledge Evidence 2 of 7 – Remote stop/start & EM stops	2 / 7	2 / 7
		Knowledge Evidence 3 of 7 – Cascading Timers	3 / 7	3 / 7
		Knowledge Evidence 4 of 7 – Forward/reverse with jog	4 / 7	4 / 7
		Knowledge Evidence 5 of 7 – Star/delta starter	5 / 7	5 / 7
		Knowledge Evidence 6 of 7 – Programmable logic controllers (PLCs)	6 / 7	6 / 7
		Knowledge Evidence 7 of 7 – Motor control & Variable frequency drives (VFDs)	7 / 7	7 / 7
Equipment Install: UEEEL0012 - Install low voltage wiring, appliances, switchgear and associated accessories	Performance Evidence	Performance Evidence 1 of 3 – Supervisor	N/A	Site
		Performance Evidence 2 of 3 – Assessor	N/A	Site
		Performance Evidence 3 of 3 – Learner	N/A	Site
	Knowledge Evidence	Knowledge Evidence 1 of 6 – Hazardous & Extra low voltage (ELV)	1 / 3	1 / 3
		Knowledge Evidence 2 of 6 – Aerial & Underground	1 / 3	1 / 3
		Knowledge Evidence 3 of 6 – Equipment & Terminations	2 / 3	2 / 3
		Knowledge Evidence 4 of 6 – Building codes	2 / 3	2 / 3

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
		& Heritage		
		Knowledge Evidence 5 of 6 – Construction & Demolition	3 / 3	3 / 3
		Knowledge Evidence 6 of 6 – AS/NZS 3000 Series	3 / 3	3 / 3

Training and assessment activities - Third year Electrical trade - Term/stage 3 - Electives

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
Grid Connect Site Survey: UEERE0054 - Conduct site survey for grid-connected photovoltaic and battery storage systems	Performance Evidence	Performance Evidence 1 of 1 – Site survey	1 / 1	1 / 1
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Risk assessment	1 / 1	1 / 1
		Knowledge Evidence 2 of 2 – Energy assessment	1 / 1	1 / 1
Solar Install: UEERE0081 - Install photovoltaic systems to power conversion equipment	Performance Evidence	Performance Evidence 1 of 1 – Panel installs	1 / 1	1 / 1
	Knowledge Evidence	Knowledge Evidence 1 of 2 – AS/NZS 5033	1 / 1	1 / 1
		Knowledge Evidence 2 of 2 – Solar theory	1 / 1	1 / 1
Solar Inverter Install: UEERE0080 - Install photovoltaic power conversion equipment to grid	Performance Evidence	Performance Evidence 1 of 1 – Inverter install	1-2 / 2	2 / 2
	Knowledge Evidence	Knowledge Evidence 1 of 2 – AS/NZS 4777	1 / 2	2 / 2
		Knowledge Evidence 2 of 2 – Testing & Commissioning	1 / 2	2 / 2
Battery Install: UEERE0078 - Install battery storage to power conversion equipment	Performance Evidence	Performance Evidence 1 of 1 – Battery install	1-1.5 / 1.5	1-1.5 / 1.5
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Battery theory	1-1.5 / 1.5	1-1.5 / 1.5
		Knowledge Evidence 2 of 2 – Testing & Maintenance	1-1.5 / 1.5	1-1.5 / 1.5
Battery Inverter Install: UEERE0077 - Install battery storage equipment power conversion equipment to grid	Performance Evidence	Performance Evidence 1 of 1 – Inverter & charger install	1 / 1	1 / 1
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Standards & Theory	1 / 1	1 / 1
		Knowledge Evidence 2 of 2 – Testing & Maintenance	1 / 1	1 / 1
Solar Safety: UEERE0049 - Apply safe work practices in the rooftop solar industry	Performance Evidence	Performance Evidence 1 of 2 – Risk Assessment	1/1	1/1
	Knowledge Evidence	Knowledge Evidence 1 of 1 – WH&S	1/1	1/1
ACMA: UEEDV0005 - Install and maintain cabling for multiple access to telecommunication services	Performance Evidence	Performance Evidence 1 of 1 – Installation	2 / 3	3 / 3
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Regulations & Earthing	1 / 3	3 / 3
		Knowledge Evidence 2 of 2 – Cable systems	1 / 3	3 / 3
Structured and Coax:	Performance Evidence	Performance Evidence 1 of 2 – Structured	2 / 3	3 / 3

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
UEEDV0008 - Install, modify and verify coaxial and structured communication copper cabling		install		
		Performance Evidence 2 of 2 – Coax install	3 / 3	3 / 3
	Knowledge Evidence	Knowledge Evidence 1 of 1 – Cables & Performance	1 / 3	3 / 3

Training and assessment activities - Forth year Electrical trade - Term/stage 4 - Capstone

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
Capstone: UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations	Performance Evidence	Performance Evidence 1 of 6 – Supervisor	N/A	Site
		Performance Evidence 2 of 6 – Assessor	N/A	Site
		Performance Evidence 3 of 6 – Learner	N/A	Site
		Performance Evidence 4 of 6 – Risk assessment & Safe isolation	5 / 8	8 / 8
		Performance Evidence 5 of 6 – Installation	4 / 8	8 / 8
		Performance Evidence 6 of 6 – Testing	5 / 8	8 / 8
	Knowledge Evidence	Knowledge Evidence 1 of 8 – S&I rules, Elec Safety Act & WH&S Act	4 / 8	6 / 8
		Knowledge Evidence 2 of 8 – ASNZS 3012, 3017 & 3760	5 / 8	6 / 8
		Knowledge Evidence 3 of 8 – Aerial, Underground, Damp Situations & Hazardous	5 / 8	6 / 8
		Knowledge Evidence 4 of 8 – Fundamental principles, Isolation, ELV & DBs	5 / 8	6 / 8
		Knowledge Evidence 5 of 8 – Motors, TX, LVR & Decommissioning	5 / 8	6 / 8
		Knowledge Evidence 6 of 8 – Installation planning	1-3/8	7 / 8
		Knowledge Evidence 7 of 8 – Earthing, MEN & EFLI	1-3/8	7 / 8
		Knowledge Evidence 8 of 8 – Electrical theory	4 / 8	7 / 8

Training and assessment activities - Stand-alone

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
Solar Design: UEERE0061 - Design grid-connected photovoltaic power supply systems	Performance Evidence	Performance Evidence 1 of 2 – Roof lay outs	1-2 / 2	2 / 2
		Performance Evidence 2 of 2 – Panels to inverter to DB	1-2 / 2	2 / 2
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Energy yield	1 / 2	2 / 2
		Knowledge Evidence 2 of 2 – Design theory	1 / 2	2 / 2
Battery Design:	Performance Evidence	Performance Evidence 1 of 2 – Faults &	1-2	2 / 2

Unit of competency	Relates to	Assessment name	Tech Day	Ass. Day
UEERE0060 - Design grid-connected battery storage systems		Safety	/ 2	
		Performance Evidence 2 of 2 – Tariff arbitrage	1-2 / 2	2 / 2
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Back up power	1 / 2	2 / 2
		Knowledge Evidence 2 of 2 – Standards & Theory	1 / 2	2 / 2
Electrical Principles for Non-electricians: UEERE0051 - Apply electrical principles to renewable energy design	Performance Evidence	Performance Evidence 1 of 1 – Standards	1-4 / 4	4 / 4
	Knowledge Evidence	Knowledge Evidence 1 of 3 – Drawings	1 / 4	2 / 4
		Knowledge Evidence 2 of 3 – Electrical theory	2 / 4	3 / 4
		Knowledge Evidence 3 of 3 – Cables & Protection	3 / 4	4 / 4
Fibre: UEEDV0006 - Install and modify optical fibre performance data communication cabling	Performance Evidence	Performance Evidence 1 of 1 – Fibre install	2 / 3	3 / 3
	Knowledge Evidence	Knowledge Evidence 1 of 2 – Cabling	1 / 3	3 / 3
		Knowledge Evidence 2 of 2 – Fibre optics	1 / 3	3 / 3

8. Assessment Resources, Methods and Timing

Assessment methods and timing

For the break down of units of competency into topics and days that assessments will occur, see:

- 7. Duration and Scheduling:

Work placement hours and how this is structured into the course delivery

See:

- 5. Mode of Delivery:

Adjustments that may be needed to cater for different student characteristics

See:

- 7. Duration and Scheduling:
  - Variations due to specific learning needs - Tutorials
  - Variations due to specific learning needs - Reasonable adjustments

Learning and assessment resources - First year Electrical trade - Term/stage 1

Unit of competency	Assessment Name	Learning resources	Assessment resources
Orientation: UEECO0023 - Participate in electrical work and competency development activities	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site-visit
	Performance Evidence 2 of 3 – Assessor		Site-visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 2 – Enrolment & Induction	Guided discussion and enrolment paperwork	Classroom environment
	Knowledge Evidence 2 of 2 – Orientation	Slide set and	Classroom environment

Unit of competency	Assessment Name	Learning resources	Assessment resources
		Enrolment paperwork	
WH&S: UEECD0007 - Apply work health and safety regulations, codes and practices in the workplace	Performance Evidence 1 of 2 – Risk assessment	Slide set Worksheet	Classroom environment
	Performance Evidence 2 of 2 – Safe isolation	Safe Work Method Statement Demonstration	Workshop environment 24V AC circuit breaker board and lock-out kit
	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 2 – SWMS	Slide set Worksheet	Classroom environment
	Knowledge Evidence 2 of 2 – Life support & Legal	Slide set Worksheet	Classroom environment Internet access
CPR: HLTAID009 - Provide cardiopulmonary resuscitation	Performance Evidence 1 of 1 – Provide CPR	Slide set	Classroom environment adult and infant CPR manikins and defibrillators
	Knowledge Evidence 1 of 1 – Technique & Legal	Slide set Worksheet	Classroom environment
Live Rescue: UETDRRF004 - Perform rescue from a live LV panel	Performance Evidence 1 of 1 – Perform live rescue	Slide set	Workshop environment live rescue kit
	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 1 – Live rescue	Slide set Worksheet	Classroom environment
Workshop: UEECD0019 - Fabricate, assemble and dismantle utilities industry components	Performance Evidence 1 of 3 – Sheet metal	Guided discussion, demonstration and risk assessment	Workshop environment sheet metal bending, rolling and cutting machine Hand and power tools
	Performance Evidence 2 of 3 – Techniques	Guided discussion, demonstration and risk assessment	Workshop environment Welding equipment Soldering equipment Dismantle and assembly equipment Tap and die set
	Performance Evidence 3 of 3 – Project	Guided discussion, demonstration and risk assessment	Workshop environment Suitable projects to work on Hand and power tools
	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site-visit
	Performance Evidence 2 of 3 – Assessor		Site-visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 2 – Engineering drawing & Marking out	Slide set Worksheet	Workshop environment

Unit of competency	Assessment Name	Learning resources	Assessment resources
	Knowledge Evidence 2 of 2 – Materials & Tools	Slide set Worksheet	Workshop environment

Learning and assessment resources - First year Electrical trade - Term/stage 2

Unit of competency	Assessment name	Learning resources	Assessment resources
Fixings: UEECD0020 - Fix and secure electrotechnology equipment	Performance Evidence 1 of 1 – Install fixings	Guided discussion, demonstration and risk assessment	Workshop environment Range of solid and hollow wall fixings and other mounting accessories and fixings
	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 1 - Fixings	Slide set Worksheet	Workshop environment
Drawings: UEECD0051 - Use drawings, diagrams, schedules, standards, codes and specifications	Performance Evidence 1 of 1 – Drawings	Slide set Worksheet	Classroom environment
	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 3 – Plans	Slide set Worksheet	Classroom environment Site plans
	Knowledge Evidence 2 of 3 – Diagrams	Slide set Worksheet	Classroom environment
	Knowledge Evidence 3 of 3 – Standards & Sequencing	Slide set Worksheet	Classroom environment AS/NZS 3000 and Internet access

Learning and assessment resources - First year Electrical trade - Term/stage 3

Unit of competency	Assessment name	Learning resources	Assessment resources
Series DC: UEECD0046 - Solve problems in single path circuits	Performance Evidence 1 of 1 – Series DC	Slide set Worksheet	Laboratory environment Equipment and testing equipment
	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 3 – Electricity sources & uses	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment
	Knowledge Evidence 2 of 3 – Electrical properties	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment

Unit of competency	Assessment name	Learning resources	Assessment resources
	Knowledge Evidence 3 of 3 – Series circuits	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment
Parallel DC: UEECD0044 - Solve problems in multiple path circuits	Performance Evidence 1 of 1 – Parallel DC	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment
	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site-visit
	Performance Evidence 2 of 3 – Assessor		Site-visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 4 – Resistance factors & Meters	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment AS/NZS 3000
	Knowledge Evidence 2 of 4 – Parallel circuits	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment
	Knowledge Evidence 3 of 4 – Series/parallel circuits	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment
	Knowledge Evidence 4 of 4 – Capacitors	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment

Learning and assessment resources - First year Electrical trade - Term/stage 4

Unit of competency	Assessment name	Learning resources	Assessment resources
Cables: UEEEL0023 - Terminate cables, cords and accessories for low voltage circuits	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site-visit
	Performance Evidence 2 of 3 – Assessor		Site-visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 3 – Cords & Plugs	Guided discussion, demonstration and risk assessment Slide set	Workshop environment Cords and plugs AS/NZS 3760
	Knowledge Evidence 2 of 3 – Cables & Standards	Guided discussion, Demonstration and risk assessment Slide set	Workshop environment Various cables AS/NZS 3000
	Knowledge Evidence 3 of 3 – Protection & Terminations	Guided discussion, Demonstration and risk assessment Slide set	Workshop environment Switchboard and RCDs Steel conduit and tools
Magnetism: UEEEL0021 - Solve problems in magnetic and electromagnetic devices	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 2 – Magnetic circuits	Slide set Worksheet and	Laboratory environment Equipment and Testing

Unit of competency	Assessment name	Learning resources	Assessment resources
		equipment	equipment
	Knowledge Evidence 1 of 2 – Self & Mutual induction	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment
DC Machines: UEEEL0019 - Solve problems in direct current (d.c.) machines	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 2 – Motors & Efficiency	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment
	Knowledge Evidence 2 of 2 – Generators	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment

Learning and assessment resources - Second year Electrical trade - Term/stage 1

Unit of competency	Assessment name	Learning resources	Assessment resources
AC Theory: UEEEL0020 - Solve problems in low voltage a.c. circuits	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 7 – Pythagoras, Trigonometry & Sine waves	Slide set Worksheet	Classroom environment
	Knowledge Evidence 2 of 7 – Series & parallel Res. Ind. Cap. (RLC)	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment
	Knowledge Evidence 3 of 7 – Power factor	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment AS/NZS 3000
	Knowledge Evidence 4 of 7 – Harmonics & Resonance	Slide set Worksheet	Classroom environment
	Knowledge Evidence 5 of 7 – Three phase calculations	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment
	Knowledge Evidence 6 of 7 – Three phase concepts	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment AS/NZS 3000
	Knowledge Evidence 7 of 7 – Energy assessment	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment AS/NZS 3000

Learning and assessment resources - Second year Electrical trade - Term/stage 2

Unit of competency	Assessment name	Learning resources	Assessment resources
Transformers: UEEEL0025 - Test and connect transformers	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 2 – Construction & Types	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment AS/NZS 3000
	Knowledge Evidence 1 of 2 – Characteristics	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment
AC Machines: UEEEL0024 - Test and connect alternating current (a.c.) rotating machines	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 4 – Types & Operation	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment
	Knowledge Evidence 2 of 4 – Motor protection	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment AS/NZS 3000
	Knowledge Evidence 3 of 4 – Alternators	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment
	Knowledge Evidence 4 of 4 – Service & Faults	Slide set Worksheet and equipment	Laboratory environment Equipment and Testing equipment

Learning and assessment resources - Second year Electrical trade - Term/stage 3

Unit of competency	Assessment name	Learning resources	Assessment resources
Environmental: UEERE0001 - Apply environmentally and sustainable procedures in the energy sector	Performance Evidence 1 of 1 – Energy audit	Slide set Worksheet	Classroom environment Building to audit
	Performance Evidence 1 of 2 – Workplace environmental initiatives	Slide set Worksheet	Classroom environment
	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 2 – Climate change imperatives	Slide set Worksheet	Classroom environment Internet access
	Knowledge Evidence 2 of 2 – Pay-back periods	Slide set Worksheet	Classroom environment Scenarios
Power: UEEEL0010 - Evaluate and	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment

Unit of competency	Assessment name	Learning resources	Assessment resources
modify low voltage socket outlets circuits	Knowledge Evidence 1 of 2 – Loads into circuits	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 1 of 2 – Installation & Testing	Guided discussion and demonstration Slide set	Workshop environment Socket outlets and pendant socket outlets Test equipment AS/NZS 3000
Heating: UEEEL0008 - Evaluate and modify low voltage heating equipment and controls	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 3 – Heat transfer	Slide set Worksheet	Classroom environment
	Knowledge Evidence 2 of 3 – Heating control	Slide set Worksheet and equipment	Workshop environment Heating and Test equipment AS/NZS 3000
	Knowledge Evidence 3 of 3 – Repair	Slide set Worksheet and equipment	Workshop environment Heating and Test equipment AS/NZS 3000
Lighting: UEEEL0009 - Evaluate and modify low voltage lighting circuits, equipment and controls	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 3 – Luminaries & Smoke alarms	Slide set Worksheet and equipment	Workshop environment Lighting and Test equipment AS/NZS 3000
	Knowledge Evidence 2 of 3 – Control	Slide set Worksheet and equipment	Workshop environment Lighting and Test equipment AS/NZS 3000
	Knowledge Evidence 3 of 3 – Switching	Slide set Worksheet and equipment	Workshop environment Lighting and Test equipment AS/NZS 3000
Risk Assessment: UEECD0016 - Document and apply measures to control WHS risks associated with electrotechnology work	Performance Evidence 1 of 1 – Site safety audit	Slide set Worksheet	Workshop environment
	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to Practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 2 – Electrical risk assessment	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 2 of 2 – Construction risk assessment	Slide set Worksheet	Classroom environment

Learning and assessment resources - Second year Electrical trade - Term/stage 4

Unit of competency	Assessment name	Learning resources	Assessment resources
Protection Methods: UEEEL0003 - Arrange circuits, control and protection for electrical installations	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 6 – Safety principles	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 2 of 6 – Earthing	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 3 of 6 – Overcurrent, Fault Loop (EFLI) & RCDs	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 4 of 6 – Prospective short-circuit current (PSSC)	Slide set Worksheet	Classroom environment AS/NZS 3000 AS/NZS 3008
	Knowledge Evidence 5 of 6 – Circuit arrangement	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 6 of 6 – Switchboards	Slide set Worksheet	Classroom environment AS/NZS 3000
Alternative Supplies: UEEEL0047 - Identify, shut down and restart systems with alternate supplies	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 2 – Solar & Uninterruptible supplies (UPS)	Slide set Worksheet	Classroom environment AS/NZS 4777 AS/NZ 4836
	Knowledge Evidence 2 of 2 – Special electrical installations	Slide set Worksheet	Classroom environment AS/NZS 3000 AS/NZS 4777 (series) AS/NZS 5033 AS/NZS 3010 AS/NZS 4509 AS 3011 AS/NZS 5139
Testing: UEEEL0014 - Isolate, test and troubleshoot low voltage electrical circuits	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 4 – Testing concepts	Slide set Worksheet Testing handouts	Classroom environment AS/NZS 3000 AS/NZS 3760
	Knowledge Evidence 2 of 5 – Visual inspection & De-energisation	Slide set Worksheet Testing handouts	Workshop and building environment AS/NZS 3000
	Knowledge Evidence 3 of 5 – Earthing, IR & Interconnections	Slide set Worksheet Testing handouts	Classroom environment Testing and fault finding boards AS/NZS 3000
	Knowledge Evidence 4 of 5 – Polarity, EFLI & RCD’s	Slide set Worksheet Testing handouts	Classroom environment Testing and fault finding boards AS/NZS 3000

Unit of competency	Assessment name	Learning resources	Assessment resources
	Knowledge Evidence 5 of 5 – Final test procedures	Slide set Worksheet Testing handouts	Classroom environment Testing and fault-finding boards AS/NZS 3000

Learning and assessment resources - Third year Electrical trade - Term/stage 1

Unit of competency	Assessment name	Learning resources	Assessment resources
Cable Selection: UEEEL0018 - Select wiring systems and select cables for low voltage electrical installations	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 7 – Maximum demand & CB selection	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 2 of 7 – Current carrying capacity	Slide set Worksheet	Classroom environment AS/NZS 3000 AS/NZS 3008
	Knowledge Evidence 3 of 7 – Voltage drop & EFLI	Slide set Worksheet	Classroom environment AS/NZS 3000 AS/NZS 3008
	Knowledge Evidence 4 of 7 – Prospective current (PSCC) & Temp (SCTR)	Slide set Worksheet	Classroom environment AS/NZS 3000 AS/NZS 3008
	Knowledge Evidence 5 of 7 – Switchboards & Metering	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 6 of 7 – Final subcircuits	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 7 of 7 – Design & Safety	Slide set Worksheet	Classroom environment AS/NZS 3000

Learning and assessment resources - Third year Electrical trade - Term/stage 2

Unit of competency	Assessment name	Learning resources	Assessment resources
Control Circuits: UEEEL0005 - Develop and connect electrical control circuits	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 7 – Auto/Manual/Off 24 hr Clock	Worksheet and practical equipment	Workshop environment Control circuit practical equipment
	Knowledge Evidence 2 of 7 – Remote stop/start & EM stops	Worksheet and practical equipment	Workshop environment Control circuit practical equipment
	Knowledge Evidence 3 of 7 – Cascading Timers	Worksheet and practical equipment	Workshop environment Control circuit practical equipment
	Knowledge Evidence 4 of 7 –	Worksheet and practical	Workshop environment

Unit of competency	Assessment name	Learning resources	Assessment resources
	Forward/reverse with jog	equipment	Control circuit practical equipment
	Knowledge Evidence 5 of 7 – Star/delta starter	Worksheet and practical equipment	Workshop environment Control circuit practical equipment
	Knowledge Evidence 6 of 7 – Programmable logic controllers (PLCs)	Worksheet and PLC software	Classroom environment PLC software
	Knowledge Evidence 7 of 7 – Motor control & Variable frequency drives (VFDs)	Worksheet and practical equipment Slide set	Workshop environment Control circuit practical equipment AS/NZS 3000
Equipment Install: UEEEL0012 - Install low voltage wiring, appliances, switchgear and associated accessories	Performance Evidence 1 of 3 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 3 – Assessor		Site visit
	Performance Evidence 3 of 3 – Learner		Classroom environment
	Knowledge Evidence 1 of 6 – Hazardous & Extra low voltage (ELV)	Slide set	Classroom environment AS/NZS 3000
	Knowledge Evidence 2 of 6 – Aerial & Underground	Slide set	Classroom environment AS/NZS 3000
	Knowledge Evidence 3 of 6 – Equipment & Terminations	Slide set	Classroom environment AS/NZS 3000 Internet Access
	Knowledge Evidence 4 of 6 – Building codes & Heritage	Slide set	Classroom environment AS/NZS 3000 Building Codes Internet Access
	Knowledge Evidence 5 of 6 – Construction & Demolition	Slide set	Classroom environment AS/NZS 3000 AS/NZS 3012
	Knowledge Evidence 6 of 6 – AS/NZS 3000 Series	Slide set	Classroom environment AS/NZS 3001 AS/NZS 3002 AS/NZS 3003 AS/NZS 3004 AS/NZS 5053

Learning and assessment resources - Third year Electrical trade - Term/stage 3 - Electives

Unit of competency	Assessment name	Learning resources	Assessment resources
Grid Connect Site Survey: UEERE0054 - Conduct site survey for grid-connected photovoltaic and battery storage systems	Performance Evidence 1 of 1 – Site survey	Slide set Worksheet	Simulated environment
	Knowledge Evidence 1 of 2 – Risk assessment	Slide set Worksheet	Classroom environment
	Knowledge Evidence 2 of 2 – Energy assessment	Slide set Worksheet	Classroom environment
Solar Install:	Performance Evidence 1 of 1 – Panel installs	Slide set	Workshop environment

Unit of competency	Assessment name	Learning resources	Assessment resources
UEERE0081 - Install photovoltaic systems to power conversion equipment		Worksheet	Tin, tile and tilt-frame solar installation
	Knowledge Evidence 1 of 2 – AS/NZS 5033	Slide set Worksheet	Workshop environment Solar Fault-finding Boards
	Knowledge Evidence 2 of 2 – Solar theory	Slide set Worksheet	Workshop environment Solar Commissioning Boards
Solar Inverter Install: UEERE0080 - Install photovoltaic power conversion equipment to grid	Performance Evidence 1 of 1 – Inverter install	Slide set Worksheet	Classroom environment Scenarios
	Knowledge Evidence 1 of 2 – AS/NZS 4777	Slide set Worksheet	Classroom environment AS/NZS 5033
	Knowledge Evidence 2 of 2 – Testing & Commissioning	Slide set Worksheet	Classroom environment AS/NZS 5033 AS/NZS 4777.1 AS/NZS 4777.2
Battery Install: UEERE0078 - Install battery storage to power conversion equipment	Performance Evidence 1 of 1 – Battery install	Slide set Worksheet	Classroom environment AS/NZS 5139 Battery equipment
	Knowledge Evidence 1 of 2 – Battery theory	Slide set Worksheet	Classroom environment
	Knowledge Evidence 2 of 2 – Testing & Maintenance	Slide set Worksheet	Classroom environment AS/NZS 5139 Battery equipment
Battery Inverter Install: UEERE0077 - Install battery storage equipment power conversion equipment to grid	Performance Evidence 1 of 1 – Inverter charger install	Slide set Worksheet	Classroom environment Battery charger/inverter equipment
	Knowledge Evidence 1 of 2 – Standards & Theory	Slide set Worksheet	Classroom environment AS/NZS 5139 AS/NZS 4777.1 AS/NZS 4777.2
	Knowledge Evidence 2 of 2 – Testing & Maintenance	Slide set Worksheet	Classroom environment Battery charger/inverter equipment
Solar Safety: UEERE0049 - Apply safe work practices in the rooftop solar industry	Performance Evidence 1 of 2 – Risk Assessment	Slide set Worksheet	Classroom environment
	Knowledge Evidence 1 of 1 – WH&S	Slide set Worksheet	Classroom environment
ACMA: UEEDV0005 - Install and maintain cabling for multiple access to telecommunication services	Performance Evidence 1 of 1 – Installation	Slide set Worksheet	Workshop environment Communications cables, termination equipment and testing equipment
	Knowledge Evidence 1 of 2 – Regulations & Earthing	Slide set Worksheet	Classroom environment Internet access
	Knowledge Evidence 2 of 2 – Cable systems	Slide set Worksheet	Classroom environment Internet access

Unit of competency	Assessment name	Learning resources	Assessment resources
Structured and Coax: UEEDV0008 - Install, modify and verify coaxial and structured communication copper cabling	Performance Evidence 1 of 2 – Structured install	Slide set Worksheet	Workshop environment Communications cables, termination equipment and testing equipment
	Performance Evidence 2 of 2 – Coax install	Slide set Worksheet	Workshop environment Communications cables, termination equipment and testing equipment
	Knowledge Evidence 1 of 1 – Cables & Performance	Slide set Worksheet	Classroom environment Internet Access AS/NZS 11801 (series) AS/NZS 1367

Learning and assessment resources - Forth year Electrical trade - Term/stage 4 - Capstone

Unit of competency	Assessment name	Learning resources	Assessment resources
Capstone: UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations	Performance Evidence 1 of 6 – Supervisor	Workplace suitable to practice electrical work	Site visit
	Performance Evidence 2 of 6 – Assessor		Site visit
	Performance Evidence 3 of 6 – Learner		Classroom environment
	Performance Evidence 4 of 6 – Risk assessment & Safe isolation	Slide set Safe Isolation SWMS	Workshop environment 24V AC circuit breaker board and lock-out kit
	Performance Evidence 5 of 6 – Installation	Slide set Worksheet	Workshop environment Switchboard, protection devices, cable, equipment AS/NZS 3000
	Performance Evidence 6 of 6 – Testing	Slide set Testing handouts	Workshop environment testing boards AS/NZS 3000
	Knowledge Evidence 1 of 8 – S&I rules, Elec Safety Act & WH&S Act	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 2 of 8 – ASNZS 3012, 3017 & 3760	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 3 of 8 – Aerial, Underground, Damp Situations & Hazardous	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 4 of 8 – Fundamental principles, Isolation, ELV & DBs	Slide set Worksheet	Classroom environment AS/NZS 3000 AS/NZS 3008
	Knowledge Evidence 5 of 8 – Motors, TX, LVR & Decommissioning	Slide set Worksheet	Classroom environment AS/NZS 3000
	Knowledge Evidence 6 of 8 – Installation planning	Slide set Worksheet	Classroom environment AS/NZS 3000 AS/NZS 3008
	Knowledge Evidence 7 of 8 – Earthing, MEN & EFLI	Slide set Worksheet	Classroom environment AS/NZS 3000

Unit of competency	Assessment name	Learning resources	Assessment resources
	Knowledge Evidence 8 of 8 – Electrical theory	Slide set Worksheet	Classroom environment AS/NZS 3000
	Performance Evidence 1 of 6 – Supervisor	Slide set Worksheet	Classroom environment AS/NZS 3017 AS/NZS 3012

Learning and assessment resources - Stand-alone

Unit of competency	Assessment name	Learning resources	Assessment resources
Solar Design: UEERE0061 - Design grid-connected photovoltaic power supply systems	Performance Evidence 1 of 2 – Roof lay outs	Slide set Worksheet	Workshop environment Batteries and equipment
	Performance Evidence 2 of 2 – Panels to inverter to DB	Slide set Worksheet	Workshop environment Fault-finding boards
	Knowledge Evidence 1 of 2 – Energy yield	Slide set Worksheet	Classroom environment AS/NZS 3000 AS/NZS 5139
	Knowledge Evidence 2 of 2 – Design theory	Slide set Worksheet	Classroom environment AS/NZS 5139
Battery Design: UEERE0060 - Design grid-connected battery storage systems	Performance Evidence 1 of 2 – Faults & Safety	Slide set Worksheet	Classroom environment Batteries and equipment
	Performance Evidence 2 of 2 – Tariff arbitrage	Slide set Worksheet	Classroom environment
	Knowledge Evidence 1 of 2 – Back up power	Slide set Worksheet	Classroom environment
	Knowledge Evidence 2 of 2 – Standards & Theory	Slide set Worksheet	Classroom environment AS/NZS 5139 AS/NZS 4777.1 AS/NZS 4777.2 AS/NZS 3000 AS/NZS 3008
Electrical Principles for Non-electricians: UEERE0051 - Apply electrical principles to renewable energy design	Performance Evidence 1 of 1 – Standards	Slide set Worksheet	Classroom environment AS/NZS 3000 AS/NZS 3008
	Knowledge Evidence 1 of 3 – Drawings	Slide set Worksheet	Classroom environment Plans and drawings
	Knowledge Evidence 2 of 3 – Electrical theory	Slide set Worksheet	Classroom environment
	Knowledge Evidence 3 of 3 – Cables & Protection	Slide set Worksheet	Classroom environment Practical equipment
Fibre: UEEDV0006 - Install and modify optical fibre performance data communication cabling	Performance Evidence 1 of 1 – Fibre install	Slide set Worksheet	Workshop environment Communications cables, termination equipment and testing equipment
	Knowledge Evidence 1 of 2 – Cabling	Slide set Worksheet	Classroom environment Internet Access AS/NZS 11801 (series)
	Knowledge Evidence 2 of 2 – Fibre optics	Slide set	Classroom environment

Unit of competency	Assessment name	Learning resources	Assessment resources
		Worksheet	Internet Access AS/NZS 11801 (series)

9. Learning Resources

Learning resources

For learning resources used, see:

- 8. Assessment Resources, Methods and Timing:
  - Learning and assessment resources

For the break down of units of competency into topics and days that learning activities will occur, see:

- 7. Duration and Scheduling:

Learning resources availability

Learning resources are available:

- In structured classes
- During tutorial evenings 4 pm – 6:30 pm Tuesday, Wednesday and Thursday evenings
- Via email administration@gets.edu.au
- Web: www.gets.edu.au

See also:

- 11. Physical Resources

10. Human Resources

Trainers and Assessors at a unit of competency level

A list of Trainers and Assessors at a unit of competency level and their credentials is available on request.

Competency and qualification assessment decisions

All competency and qualification assessment decisions are made by the Head Trainer, currently Ben Murphy.

Assessor requirements - Core units

Core unit of competency	Assessors must hold a current unrestricted electrical licence
Orientation: UEECO0023 - Participate in electrical work and competency development activities	No
WH&S: UEECD0007 - Apply work health and safety regulations, codes and practices in the workplace	No
CPR: HLTAID009 - Provide cardiopulmonary resuscitation	No. Current first aid certificate required

Core unit of competency	Assessors must hold a current unrestricted electrical licence
Live Rescue: UETDRRF004 - Perform rescue from a live LV panel	No
Workshop: UEECD0019 - Fabricate, assemble and dismantle utilities industry components	No
Fixings: UEECD0020 - Fix and secure electrotechnology equipment	No
Drawings: UEECD0051 - Use drawings, diagrams, schedules, standards, codes and specifications	No
Series DC: UEECD0046 - Solve problems in single path circuits	No
Parallel DC: UEECD0044 - Solve problems in multiple path circuits	No
Cables: UEEEL0023 - Terminate cables, cords and accessories for low voltage circuits	Yes
Magnetism: UEEEL0021 - Solve problems in magnetic and electromagnetic devices	Yes
DC Machines: UEEEL0019 - Solve problems in direct current (d.c.) machines	Yes
AC Theory: UEEEL0020 - Solve problems in low voltage a.c. circuits	Yes
Transformers: UEEEL0025 - Test and connect transformers	Yes
AC Machines: UEEEL0024 - Test and connect alternating current (a.c.) rotating machines	Yes
Environmental: UEERE0001 - Apply environmentally and sustainable procedures in the energy sector	No
Power: UEEEL0010 - Evaluate and modify low voltage socket outlets circuits	Yes
Heating: UEEEL0008 - Evaluate and modify low voltage heating equipment and controls	Yes
Lighting: UEEEL0009 - Evaluate and modify low voltage lighting circuits, equipment and controls	Yes
Risk Assessment: UEECD0016 - Document and apply measures to control WHS risks associated with electrotechnology work	No
Protection Methods: UEEEL0003 - Arrange circuits, control and protection for electrical installations	Yes
Alternative Supplies: UEEEL0047 - Identify, shut down and restart systems with alternate supplies	Yes
Testing: UEEEL0014 - Isolate, test and troubleshoot low voltage electrical circuits	Yes
Cable Selection: UEEEL0018 - Select wiring systems and select cables for low voltage electrical installations	Yes

Core unit of competency	Assessors must hold a current unrestricted electrical licence
Control Circuits: UEEEL0005 - Develop and connect electrical control circuits	Yes
Equipment Install: UEEEL0012 - Install low voltage wiring, appliances, switchgear and associated accessories	Yes
Capstone: UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations	Yes

Assessor requirements - Electives

Elective unit of competency	Assessors must hold a current unrestricted electricians licence
Solar Basics: UEERE0022 - Solve basic problems in photovoltaic energy apparatus and systems	No
Solar Install: UEERE0016 - Install, configure and commission LV grid-connected photovoltaic power systems	No
Solar Design: UEERE0011 - Design grid-connected photovoltaic power supply systems	No
Solar Safety: UEERE0049 - Apply safe work practices in the rooftop solar industry	No
ACMA: UEEDV0005 - Install and maintain cabling for multiple access to telecommunication services	No
Structured and Coax: UEEDV0008 - Install, modify and verify coaxial and structured communication copper cabling	No

Assessor requirements - Stand-alone

Stand-alone unit of competency	Assessors must hold a current unrestricted electricians licence
Batteries Install: UEERE4001 - Install, maintain and fault find battery storage systems for grid-connected photovoltaic systems	No
Batteries Design: UEERE5001 - Design battery storage systems for grid-connected photovoltaic systems	No
Electrical Principles for Non-electricians: UEERE0051 - Apply electrical principles to renewable energy design	No
Fibre:	No

Stand-alone unit of competency	Assessors must hold a current unrestricted electricians licence
UEEDV0006 - Install and modify optical fibre performance data communication cabling	

11. Physical Resources

Resources available at a unit of competency level

For learning and assessment resources used, see:

- 8. Assessment Resources, Methods and Timing:
  - Learning and assessment resources

Physical resources available

Physical resources include however are not limited to:

Training facility summary: • Total area 600 m^2 • DC Electrical training room and laboratory 112 m^2 • AC Electrical training room and laboratory 84 m^2 • Solar room 82 m^2 • Telecommunications training room 50 m^2 • Training material storage area and workshop 52 m^2 • Secure office area with serving counter 60 m^2 • Meeting room and separate office space 12 m^2 • Staff room 12 m^2 • Waiting room 32 m^2 • Lunch room 40 m^2 • Learner kitchenette 12 m^2 • Staff/learner kitchenette 12 m^2 • Outdoor eating area 12 m^2 • Office/general storage area 14 m^2 • Male and Female toilets upstairs 16 m^2 • Male and Female toilets downstairs 6 m^2 • Unisex disabled toilet downstairs 6 m^2	Learner facilities: • Library of electrical theory text books for borrowing • Magazine rack with industry specific publications • Hands-on display shelves and table • Notice board • Online internet support • GETS video topic support
Kitchenette lunch room facilities: • Kitchenettes x 2 • Tables and chairs to accommodate 26 • Tea, coffee and condiments provided • Chilled and filtered water or boiled water provided • Microwave, pie oven, toaster and sandwich maker • Barbecue	Office furniture: • Desks x 6 • Desk draws x 8 • Compactus • 4 Draw filing cabinets x 8 • Cabinets x 4 • Shelves x 11
Recycling facilities: • Paper and cardboard • Mixed recycling • Compost	Office equipment: • Cross-cut shredder x 2 • Book binding machine • A3/A4 guillotine • A3 and A4 laminator • Office equipment – various • Document protectors – various
	Information technology: • Desktop computers with dual monitors x 5 • Class room trainer computers with dual monitors and AV connections x 4 • Office laptops x 2 • Learner laptops x 40 • Server rack
	Printing and photocopying: • Colour photocopiers x 2 • Black and white photocopiers x 2 • Colour printer/scanner x 3

• Scrap copper • Scrap metal • Batteries, compact fluorescents, phones and printer cartridges • '2nd life' electrical and office equipment recycling area	

Practical equipment, test equipment and demonstration resources available

Assessment resources include however are not limited to:

Power supplies	
DC Laboratory • 0-30 V DC variable power supply to 10 laboratory benches (20 places)	AC Laboratory • 24 V AC, 3 phase supply to 10 laboratory benches (10 places) • Additional DC variable power supplies x 5 • Variac 1 A x 1 • Variac 8 A x 1
Purpose built electrical boxes	
Purpose built electrical practical boxes for laboratory experiments: • 13 types, 18 of each	
Electrical meters	
DC Laboratory: • Digital multi-meters x 30 • LCR meters x 10	AC Laboratory • Digital multi-meters x 20 • LCR meters x 6
Other meters: • Insulation Resistance tester x 8 • Lux meters x 2 • Infra read thermometers x 2 • Tachometers x 5 • Phase rotation meter x 2 • Fault Loop Impedance tester x 1 • RCD tester x 1 • Low ohm meter x 1 • Contact type voltage indicators - Various x 6 • Non-contact type voltage indicators x 2 • Resistor box test equipment x 8 • Earth training leads x 3	Telecommunications • Fluke TDX x 1 • Optical Time Domain Reflectometer x 1 • Fibre optic light source and power meter x 1 • Fibre optic cable identifier x 3 • Butinski phone x 3 • Wire mapper x 8 • Coax identifier x 1 • Coaxial signal strength meter x 1
	Solar: • Pyronometer x 3 • DC Clamp meter x 3 • Solar Sunpath diagram x 3
Energy monitoring: • Watt, Volt Amp, kW.Hr, power factor, energy monitoring equipment: ◦ Up to 10A x 3 ◦ Up to 300A x 1	Oscilloscopes • 4 channel oscilloscopes x 3 • Hand held oscilloscopes x 2
Electrical wiring	
• Practical demonstration equipment x 30 kits • Electrical cable and accessories x 5 shelves • Electrical cable roller/rack, various types and sizes • Roller cases of fixings and electrical accessories x 6	• Temporary power boards on stands x 2 • 600 x 600 metal boxes for switchboard practicals x 6 • Demonstration boards x 5
Control Circuits	
• Control circuit equipment – Various x 20 kits • Control circuit display boards x 6	• PLCs - various x 7 different types/brands • PLC software x 2 different types/brands

<table>
<tr><th colspan="2">Testing and fault-finding</th></tr>
<tr><td>• Boards with 6 individual faults that can be introduced into the circuits x 4</td><td>• Lock-out tag out circuit breaker testing boards x 2
• Lock out tag out kit x 2</td></tr>
<tr><th colspan="2">Workshop</th></tr>
<tr><td>• 4 large work benches, space for 16 learners
• Guillotine bender and roller machines x 3
• Bench grinder x 3
• Bench drill x 2</td><td>• Soldering Irons x 20
• Stick welder and screen x 2
• Welding apron, gloves and mask x 4
• Hand and power tools x 8 boxes</td></tr>
<tr><th colspan="2">Transformers</th></tr>
<tr><td>• Transformers suitable for operation at 24 V x 20
• Transformers other x 40</td><td>• Dissectable transformers x 40</td></tr>
<tr><th colspan="2">Motors</th></tr>
<tr><td>• 3 phase AC motors suitable for operation at 24 V x 18
• Disassembled motors x 40</td><td>• Variable Frequency Drive x 1</td></tr>
<tr><th colspan="2">Renewables</th></tr>
<tr><td>• Solar machines for measuring voltage and current output of panels at different tilt angles, orientations, shading and wave lengths x 8
• Areas for mounting solar panels, cabling, isolators and inverters:
◦ Tile roof
◦ Tin roof
◦ Flat roof
• Solar boards for testing
◦ 2 x moveable boards with solar panels mounted on them for testing
◦ Each board has 5 different faults that can be added into the circuit for testing and fault finding practice
• Isolators x 20
• Batteries equiment</td><td>• 2 x moveable boards with Solar panels mounted on them for live commissioning in sunlight, including:
◦ Extension lead for connecting AC side and
◦ feeding power into grid
◦ 600 x 600 metal box with fuse, kW.hr meter and switch board
◦ AC isolator
◦ Inverter
◦ Array Main Switch (DC isolator)
◦ Roof isolator
◦ 4 x solar panels
• Practical demonstration equipment including Micro inverters and optimisors
• Cable and termination equipment</td></tr>
<tr><th colspan="2">Telecommunications</th></tr>
<tr><td rowspan="2">Speciality termination tools:
• IDC termination tools x 20
• 110 termination tools x 6
• Cable stripper x 20
• Coax hex crimp x 20
• Coax compression crimp x 8
• Coax reamer x 5
• Fibre optic 3 hole stripper x 8
• Kevlar scissors x 8
• Fibre cleavers x 3
• Fibre optic inspection tool x 2</td><td>Fault-finding boards:
• Telephone and structured cabling testing boards with faults x 3</td></tr>
<tr><td>Server racks x 2:
• Interconnected with cable tray
• Fibre optic break-out trays and patch panels x 4
• Cat 5e patch panel x 2
• Cat 6 patch panel x 2
• Cat 6a shielded cable patch panel x 2</td></tr>
<tr><td>Demonstration equipment:
• Practical demonstration equipment x 10 kits
• Main data frame telephone display board
• Free-to-air coaxial cabling display board</td><td rowspan="2">Telecommunications cable:
• Phone cable:
◦ 4, 10, 20, 50 pair internal and external
• Structured cable:
◦ Cat 5e, Cat 6, Cat 6a shielded
• Coaxial cable:
◦ RG45 shielded
• Fibre optic cable:
◦ Single, 60, 120 fibre</td></tr>
<tr><td>Workshop:
• Stations for installing telecommunications equipment on boards x 12</td></tr>
</table>

• Telecommunications cable and accessories x 2 cupboards	

12. Strategies for ‘stand-alone’ single units or Skill Sets

Stand-alone or single units

As per:

- 3. Target Group:
  - Stand-alone units - Various

Skill Sets:

Skill sets are not currently maintained on our scope of registration with the Australian Skills Quality Authority.

13. Assessment-Only Pathways

UEE30820 Qualification

Assessment-only pathways are not offered for the UEE30820 qualification with the exceptions below. This is due to the high risk nature of electrical work.

UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations

Assessment-only pathways will not be used for UEEEL0039 in accordance with Access Canberra Construction Occupations Licensing Registrar requirements.

Core and elective units of competency

Assessment only pathways may be used for specific units of competence in accordance with the following sections of this document:

- 4. Target Group:
  - Qualification enrolment - Applying for a reduction in time due to prior trade or experience:
  - Qualification enrolment - Prior off-the-job training and assessment however competency was not achieved:

See also: Appendix B – Policy 2 – Recognition of Prior Learning & Credit Transfer

14. Version Control

Version	Date of release	Author	Authorised by	Position	Reason for change
V1.0	29/9/2015	Ben Murphy	Ben Murphy	Proprietor / Chief Executive	Initial release for initial registration application with ASQA
V2.0	29/02/16	Ben Murphy	Ben Murphy	Proprietor / Chief Executive	To incorporate Standards for ACT Apprenticeships after successful User Choice funding application
V3.0	26/04/17	Ben Murphy	Ben Murphy	Proprietor / Chief Executive	Revision prior to ASQA post initial registration audit.

V4.0	30/11/20	Ben Murphy	Ben Murphy	Proprietor / Chief Executive	Released after industry consultation for new Training Package UEE30820
V4.1	19/07/21	Ben Murphy	Ben Murphy	Proprietor / Chief Executive	Minor name changes
V4.2	31/12/21	Ben Murphy	Ben Murphy	Proprietor / Chief Executive	Removed x 2 electives, added 1 x elective
V4.3	22/03/22	Ben Murphy	Ben Murphy	Proprietor / Chief Executive	Added day to Parallel DC and took a day off Series DC
V4.4	26/04/22	Ben Murphy	Ben Murphy	Proprietor / Chief Executive	Updated CPR and Live Rescue unit of competency codes
V4.5	16/01/24	Ben Murphy	Ben Murphy	Proprietor / Chief Executive	Updated Renewables units
V4.6	02/09/24	Ben Murphy	Ben Murphy	Proprietor / Chief Executive	Changed electives