UEE30820 Certificate III in Electrotechnology Electrician



Course Description

This qualification provides individuals with the skills and knowledge to select, install, set up, test, fault find, repair and maintain electrical systems and equipment in buildings and premises. It includes Electrical Regulatory Authority Council (ERAC), or their successor's, Essential Performance Capabilities for an 'Unrestricted Electrician's license'.

The skills and knowledge described in this qualification require a licence or permit to practice in the workplace where work is carried out on electrical installations which are designed to operate at voltages greater than 50 volt (V) alternating current (a.c.) or 120 V direct current (d.c.).

Competency development activities in this qualification are subject to regulations directly related to licensing. Where a licence or permit to practice is not held, a relevant contract of training through an Australian Apprenticeship, may be required. To obtain an Unrestricted Electrician's Licence in most jurisdictions the qualification must be completed as an apprenticeship or Trades Recognition Australia (TRA) pathway. Where required for Licencing, the certification documentation issued must indicate if the qualification was completed as an apprenticeship or Trades Recognition Australia (TRA) pathway.

Job Roles and Career Pathways

The qualification is designed for students wishing to enter the Electrical industry for roles including General Electrician, Telecommunications Trades Workers and Electrician Tradesperson. Full details can be found at www.training.gov.au

Entry Requirements

Course entry

There are no formal course entry requirements into this qualification.

RTO Entry

The Electrotechnology Training package recommends the following:

Language, literacy and numeracy skills levels necessary to adopt the knowledge and be successful in completing the units within this qualification

Apprenticeship Students

Superior Training Centre specific course entry requirements for UEE30820 Certificate III in Electrotechnology Electrician for Apprenticeship students are as follows:

- Students should be either employed full time as an apprentice in the electrotechnology industry.
- Students should be signed up with an Apprentice Network Provider and have a Training Plan Proposal

UEE30820 Certificate III in Electrotechnology Electrician



Numeracy and Literacy

Upon enrolment all students must take Language literacy and numeracy test as part of entry requirements. Students who need to improve their language and literacy skills must undertake a Smart and Skilled training for people who want extra learning support course to gain the required language level prior to commencement into UEE30820 Certificate III in Electrotechnology Electrician.

Where it is determined that an applicant may not have sufficient English language skills to complete the qualification and work successfully as Electrician, they will be provided with the following referrals:

Registered Smart and Skilled provider to undertake a foundation skills course.
The NSW Adult Literacy and Numeracy Council (NSWALNC) for assistance. NSWALNC is the peak body for the adult literacy and numeracy practitioners in NSW and have a detailed list of neighbourhood houses, neighbourhood learning centres, TAFE colleges and other providers who offer literacy and numeracy programs and support throughout NSW.http://www.nswalnc.org.au/

Intake

Course start dates are as listed on the RTO training schedule.

Further Learning

Students obtaining a competency for all units in this course will be awarded the full qualification UEE30820 Certificate III in Electrotechnology Electrician. Students not obtaining a competent result for all units in this course will receive a Statement of Attainment.

Participants completing UEE30820 Certificate III in Electrotechnology Electrician may enter into a workplace or continue current roles as a Licensed Electrician

Alternatively graduates of this course may continue their vocational education by undertaking a Certificate IV level course from the UEE Electrotechnology Training Package such as the UEE40620 - Certificate IV in Electrotechnology - Systems Electrician

Course Structure

This course comprises all the required Core competency units to a total of 990 points and elective units totalling 120 points. Where each stream reflects different work outcomes. The following units of competency will be delivered for this qualification

UEE30820 Certificate III in Electrotechnology Electrician



Core units

HLTAID009	Provide Cardiopulmanary resuscitation
UEECD0007	Apply work health and safety regulations, codes and practices in the
01202000.	workplace
UEECD0016	Document and apply measures to control WHS risks associated with
	electrotechnology work
UEECD0019	Fabricate, assemble and dismantle utilities industry components
UEECD0020	Fix and secure electrotechnology equipment
UEECD0044	Solve problems in multiple path circuits
UEECD0046	Solve problems in single path circuits
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications
UEECO0023	Participate in electrical work and competency development activities
UEEEL0003	Arrange circuits, control and protection for electrical installations
UEEEL0005	Develop and connect electrical control circuits
UEEEL0008	Evaluate and modify low voltage heating equipment and controls
UEEEL0009	Evaluate and modify low voltage lighting circuits, equipment and controls
UEEEL0010	Evaluate and modify low voltage socket outlets circuits
UEEEL0012	Install low voltage wiring, appliances, switchgear and associated
	accessories
UEEEL0014	Isolate, test and troubleshoot low voltage electrical circuits
UEEEL0018	Select wiring systems and select cables for low voltage electrical
	installations
UEEEL0019	Solve problems in direct current (d.c.) machines
UEEEL0020	Solve problems in low voltage a.c. circuits
UEEEL0021	Solve problems in magnetic and electromagnetic devices
UEEEL0023	Terminate cables, cords and accessories for low voltage circuits
UEEEL0024	Test and connect alternating current (a.c,) rotating machines
UEEEL0025	Test and connect transformers
UEEEL0039	Design, install and verify compliance and functionality of general electrical installations
UEEEL0047	Identify, shut down and restart systems with alternate supplies
UEERE0001	Apply environmentally and sustainable procedures in the energy sector
UETTDRRF04	Perform rescue from a LV panel

(27 Units - Total 990 points)

Elective units

	Group A Electives (maximum 120 points)
UEEDV0005	Install and maintain for multiple access to telecommunication services
UEEEL0033	Conduct electrical tests on LV electrical machines

UEE30820 Certificate III in Electrotechnology Electrician



Core Units Syllabus (27 Units – Total 990 points)

Subject	Outcome (Required Skills & Knowledge)	
UEECD0007 - Apply	Effective verbal and written communication techniques	
work health and safety	o Electrotechnology work environment, including	
regulations, codes and practices in the	 Legal requirements relevant to WHS/OHS in the workplace 	
workplace	 Life support - cardiopulmonary resuscitation (CPR) in the workplace 	e:e
	o Relevant safe work method statements (SWMS)/job safety ana	alysis
	(JSA) or risk mitigation processes	
	 Typical hazards associated with electrotechnology work environm 	nents
	and their control	
	o Silica	
	o Hazardous gases	
	 Chemicals in the workplace 	
	o Confined spaces	
	o Physical and psychological hazards, including excessive n	oise,
	vibration, thermal stress, radiation, lasers, occupational over	eruse
	syndrome, stress, drugs and alcohol	
	o working at heights	
	o working safely with electricity	
HLTAID009 - Provide	o guidelines and procedures	
Cardiopulmanary resuscitation	o legal, workplace and community considerations	
resuscitation	o considerations when providing CPR	
	o techniques for providing CPR to adults, children and infants	
UEECD0016 -	o risk management and assessment of risks	
Document and apply measures to control	o recognising and assigning a level of risk	
WHS risks associated	o identifying control measures to eliminate or control risk	
with electrotechnology work	o control measure documentation	
	o construction site hazards, risks and control measures	
	 hazards, risks and control measures associated with HV 	
	 hazards, risks and control measures associated with LV equipmen 	t
	 hazards associated with extra-low voltage (ELV), LV and high current 	ents
UEECD0019 -	o mechanical drawing interpretation and sketching	
Document and apply measures to control WHS risks associated with electrotechnology work	o workshop planning and materials	
	o measuring and marking out	
	o holding and cutting materials	
	o drills and drilling	

UEE30820 Certificate III in Electrotechnology



Electrician	
	 tapping and threading including type and size of commonly used threads used in electrotechnology work
	 general hand tools used in electrotechnology work
	o joining techniques
	 portable power tools in electrotechnology work
	o compressed gas operated tools in electrotechnology work
	o sheet metal work
	o low tolerance measurement
	 dismantling and assembly techniques, including procedures for ensuring the safe treatment of dismantled components
	o relevant tools for specific tasks
UEECD0020 - Fix and secure electrotechnology	 devices, tools, equipment and methods for supporting, fixing and protecting electrotechnology equipment wiring/cabling/piping and functional accessories
equipment	o relevant electrical regulations and legislations
	o relevant job safety assessments or risk mitigation processes
	 relevant electrotechnology equipment manufacturer specifications
	o relevant WHS/OHS legislated requirements
	 relevant workplace documentation
	o relevant workplace policies and procedures
	 sustainable energy principles and practices
UEECD0044 - Solve	o factors affecting resistance
problems in multiple	o series/parallel circuits
path circuits	o parallel circuits
	meters in a circuit
	resistance measurement
	capacitors and capacitance
	capacitors in series and parallel
UEECD0046 -	
Solve problems in	electrical concepts electrical circuits
single path circuits	
	o Ohm's Law including
	electrical power effects of electrical current
	electromotive force (EMF) sources and conversion of electrical energy
	o resistors
UEECD0054	o series circuits
UEECD0051 - Use drawings,	o architectural drawings
diagrams, schedules,	building construction drawings and diagrams
standards, codes and	o circuit diagrams
specifications	o electrical drawings
	o purpose, format and content of typical job specifications, including
	common templates on which job specifications are written
	 regulations for undertaking electrical work, including legislative requirements for ensuring electrical or electronic equipment is safe i.e compliance requirements of electrical installations



Electrician	 scope of work covered by licensing in the electrotechnology industry
	(electrical licensing)
	 relevant WHS/OHS legislated requirements
	 relevant workplace policies and procedures include risk mitigation process
	 standards philosophy and format
	o wiring diagrams
UEECO0023 -	o competency development plans
Participate in electrical work and competency development activities	 roles of electrotechnology industry bodies applicable to the context and conditions under which the competency development plan will be undertaken
	 training organisation policies and procedures applicable to the context and conditions under which the competency development plan will be undertaken
	 electrotechnology workplace policies and procedures applicable to the context and conditions under which the competency development plan will be undertaken
	 documenting and reporting evidence of work activities
UEEEL0003 -	 AS/NZS 3000 safety principles and deemed to comply requirements
Arrange circuits,	o circuit and control arrangements
control and protection for electrical	hazards and risks in an electrical installation
installations	o protection against indirect contact
	o earthing
	 requirements for equipotential bonding in a range of installation situations
	 protection against overload and short circuit current
	o devices for automatic disconnection of supply
	o protection against over voltage and under voltage
	o control of an electrical installation and circuits
	 switchboards/distribution boards
	o relevant WHS/OHS legislated requirements
	o relevant workplace documentation
	 relevant workplace policies and procedures
UEEEL0005 - Develop and connect	 o perating principles, basic contact configurations and identification and common applications
electrical control	o control circuits
circuits	 remote stop-start control and electrical interlocking
	 time delay relays, including timer circuit checking and testing procedures
	o circuits using contactors
	o jogging and interlocking
	o control devices
	o programmable relays
	o three phase induction motor starters
	 three phase induction motor starters- reduced voltage
	 three phase induction motor reversal and braking



Liectrician	
	three phase induction motor speed control
	o relevant manufacturer specifications
UEEEL0008 -	o electrical heating control devices
Evaluate and modify	o fixed electrical heating appliances
low voltage heating	o electrical water heater operation
equipment and controls	o faults in heating equipment and controls
Controls	 relevant job safety assessments or risk mitigation processes
	relevant manufacturer specifications
	relevant WHS/OHS legislated requirements
	o relevant workplace documentation
LIEEEL 0000	relevant industry standards
UEEEL0009 - Evaluate and modify	o loop at the light method of wiring lighting circuits
low voltage lighting	o loop at the switch method of wiring lighting circuits
circuits, equipment and controls	 installation methods of accessories and wiring for a lighting circuit incorporating one-way, two-way and intermediate switching of lighting points using the loop at the light/switch method of TPS wiring
	 TPS cabling requirement for the loop at the light/switch circuit
	 correct operation of the installed circuits including testing for compliance with industry standards
	 emergency and evacuation lighting and lighting control
	o principles of lighting technology
	o local Supply Authority requirements for maintaining high power factor
	 terminology, principles and standards relevant to lighting (energy efficiency as per National Construction Code (NCC))
	o types of luminaires
	 lighting circuits, equipment and controls used for commercial, industrial and domestic
	 lighting layout in terms of visual comfort and relevant Australian Standards
	Australian Standards and local requirements for lighting
	 light-emitting diode (LED) lighting and its applications Neon, Argon and Xenon lighting and their applications
	 Neon, Argon and Xenon lighting and their applications comparison of incandescent, low intensity discharge, high intensity
	discharge, LED and other types of lighting
	o fire protection – residential fire and smoke alarms
	 identifying faults in luminaires and auxiliary/control equipment, including circuit and wiring diagrams of common lighting circuits
	 including circuit and wiring diagrams of common lighting circuits input and output parameters of equipment incorporating electronic
	components for; controlling/switching lighting, controlling/switching
	motors, energy measurement and control, rectifying and inverting
	electrical supplies
	 hazards and safety requirements related to equipment incorporating electronic components used in electrical systems
	o relevant manufacturer specifications
UEEEL0010 -	
Evaluate and modify	o circuits for socket outlets
low voltage socket	o final sub-circuits and segregation
outlets circuits	o identifying faults in socket outlets circuits



Liectificiali	
	 hazards and safety requirements related to equipment incorporating electronic components used in electrical systems
	o relevant manufacturer specifications
UEEEL0012 Install low voltage	 standards, codes and requirements applicable to the installation of wiring systems and electrical equipment
wiring, appliances,	 techniques for installing cables and wiring systems
switchgear and associated accessories	 termination of sub circuit cabling at switchboards and connection to components
	o varied and additional standards and requirements for special situations
	 methods for the installation, modification and testing of electrical installations and equipment for construction and demolition sites, complying with AS/NZS 3012 and applicable workplace safety legislation
	o identifying hazardous areas
	requirements for the installation of cables and accessories in damp situations and extra-low voltage (ELV) installations
	 installation of aerial conductors and underground wiring
	 hazards and safety requirements related to equipment incorporating electronic components used in electrical systems
UEEEL0014 - Isolate, test and	 safety procedures for working on electrical systems, circuits and equipment
troubleshoot low voltage electrical	 safe working practices as a normal part of carrying out electrical installation work
circuits	 tools and equipment needed to conduct electrical installation compliance inspection and testing
	 legislation and regulations that require circuits and equipment to be inspected and tested to ensure they are safe
	 the person/bodies responsible for the various aspects of ensuring electrical installations are safe
	 results of periodic inspection and tests that show construction site wiring and equipment is safe to use
	 results of periodic inspection and tests that show electrical equipment are safe to use
	 visual inspection of the electrical installation for compliance with regulatory requirements
	o regulatory requirements related to compliance testing
	 AS/NZS 3000 requirements for dealing with unused conductors and equipment
	o importance of the MEN link when a fault occurs
	 likely consequences of the absence of the MEN link or high impendence in the PEN conductor when a fault occurs
	 requirements for installation of an MEN link in an installation and an outbuilding
	 safety implications of high impedance or open circuit neutral faults
	 ensure active/s and neutral for the same circuit are clearly identified with their circuit protection device
	 tests that show all circuits and equipment operate as intended



Electrician		
	0	results of tests conducted on an installation to comply with requirements and ensure the installation is safe
	0	documentation of periodic testing and inspection of electrical equipment, including tagging requirements in accordance with AS/NZS 3760
	0	techniques and procedures for the effective safe isolation of any equipment
	0	techniques and procedures for testing and verification of alternate supplies
	0	troubleshooting concepts
	0	hazards and safety requirements related to equipment incorporating electronic components used in electrical systems
UEEEL0018 -	0	design and safety performance requirements
Select wiring systems and select cables for	0	final sub-circuit arrangements
low voltage electrical	0	factors effecting the suitability of wiring systems
installations	0	maximum demand on consumer mains/sub-mains
	0	cable selection based on current-carrying capacity requirements
	0	cable selection based on voltage-drop requirements
	0	cable selection based on fault-loop impedance requirements
	0	selecting protection devices
	0	selecting devices for isolation and switching
	0	Switchboards
	0	relevant manufacturer specifications
UEEEL0019 -	0	rotating machine construction, testing and maintenance
Solve problems in direct current (d.c.)	0	generators
machines (d.c.)	0	motors
	0	machine efficiency
	0	safety considerations for inductive loads
	0	relevant manufacturer specifications
UEEEL0020 -	0	a.c. quantities
Solve problems in low	0	phasor diagrams
voltage a.c. circuits	0	single element a.c. circuits
	0	RC and RL series a.c. circuits
	0	RLC series and parallel a.c. circuits
	0	power in an a.c. circuit
	0	power factor improvement
	0	harmonics and resonance effect in a.c. systems
	0	three phase systems
	0	three phase star connections
	0	three phase four wire systems
	0	three phase delta connections and interconnected systems
	0	energy and power requirements of ac systems
	0	fault-loop impedance
	0	local requirements and relevant industry standards

Course Flyer UEE30820 Certificate III in Electrotechnology **Electrician**



	0	phase relationship between line and phase voltages and line and phase currents of star, delta, and typical interconnected systems using star connections and delta connections relevant manufacturers' specifications
UEEEL0021 -	0	
Solve problems in	0	magnetism
magnetic and	0	electromagnetism
electromagnetic	0	magnetic circuit types and associated terminology
devices	0	methods used to reduce electrical losses in a magnetic circuit
	0	electromagnetic induction
	0	inductance
	0	magnetic principles in measurement instruments
	0	magnetic devices
LIEEEL 0022	0	relevant manufacturer specifications
UEEEL0023 - Terminate cables,	0	cable types and terminations
cords and accessories	0	cords, cables and plugs
for low voltage circuits	0	flat thermoplastic sheathed (TPS) wiring systems
	0	circular TPS wiring systems
	0	thermoplastic insulated (TPI) cables in non-metallic enclosures
	0	TPI cables in metallic enclosures
	0	fire protection cabling and systems encompassing
	0	steel wire armoured (SWA) cables
	0	trailing cables and catenary systems
	0	relevant industry standards and testing requirements for safe operation relating to
	0	relevant manufacturer specifications
UEEEL0024 -	0	operating principles of three phase induction motors
Test and connect	0	three phase induction motor construction
alternating current (a.c,) rotating machines	0	three phase induction motor characteristics
(d.o,) rotating maonines	0	split phase - single phase motors
	0	single phase motors – capacitor and shaded pole types, including identification of single-phase induction motors
	0	single phase motors – series universal
	0	motor protection
	0	three phase synchronous machines- operation principles and construction
	0	alternators and generators
	0	safe testing methods for locating faults in low voltage (LV) a.c machines
	0	mechanical faults and associated symptoms that occur in LV a.c rotating machines
	0	faults on driven loads and couplings and their consequences
	0	electrical faults and associated symptoms that occur in LV a.c rotating machines
	0	relevant manufacturer specifications



UEEELO025 - Test and connect transformers			
transformers types of information stated on transformer nameplates types of information style and core construction used in transformers relevant industry standards relating to transformers relevant industry standards relating to transformers transmission and distribution transformers construction of voltage transformers ratings of voltage transformers ratings of voltage transformers auto-transformers and instrument transformers transformer losses, efficiency and cooling transformer voltage regulation percentage impedance parallel operation of transformers relevant manufacturer specifications UEEEL0039 - Design, install wority compliance and functionality of general electrical installations electrical installations clectrical installations dangers of high voltage (HV) equipment and distribution systems effects of electric current single path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit uitiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating systems, including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements	Test and connect		n
c types of lamination style and core construction used in transformers relevant industry standards relating to transformers application of transformers transmission and distribution transformers construction of voltage transformers ratings of voltage transformers artings of voltage transformers artings of voltage transformers transformer operation transformer operation transformer voltage regulation percentage impedance parallel operation of transformers relevant manufacturer specifications UEEEL0039 - Design, install and verify compliance and functionality of general electrical safety WHS/OHS methods to rescue a person in contact with live electrical conductors or equipment application of emergency first aid requirements for an electric shock victim dangers of high voltage (HV) equipment and distribution systems effects of electric current single path d.c. circuits multiple path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit UEEEL0047 - Identify, shut down and restart systems with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements in the properties of	transformers		
relevant industry standards relating to transformers application of transformers transmission and distribution transformers construction of voltage transformers ratings of voltage transformers auto-transformer and instrument transformers transformer losses, efficiency and cooling transformer voltage regulation percentage impedance parallel operation of transformers relevant manufacturer specifications electrical install and verify compliance and functionality of general electrical installations electrical installations electrical safety WHS/OHS methods to rescue a person in contact with live electrical conductors or equipment application of emergency first aid requirements for an electric shock victim dangers of high voltage (HV) equipment and distribution systems effects of electric current single path d.c. circuits multiple path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating system), including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements		 types of information stated on transformer nameplates 	
application of transformers transmission and distribution transformers construction of voltage transformers ratings of voltage transformers auto-transformers and instrument transformers transformer operation transformer operation transformer voltage regulation percentage impedance parallel operation of transformers electrical install and verify compliance and functionality of general electrical installations UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations UEECL0039 - Design, install and verify compliance and functionality of general electrical installations UECCONTINE (Installations) Output Out		o types of lamination style and core construction used in transformers	
transmission and distribution transformers construction of voltage transformers ratings of voltage transformers auto-transformers and instrument transformers transformer operation transformer losses, efficiency and cooling transformer voltage regulation percentage impedance parallel operation of transformers relevant manufacturer specifications electrical safety WHS/OHS methods to rescue a person in contact with live electrical conductors or equipment application of emergency first aid requirements for an electric shock victim dangers of high voltage (HV) equipment and distribution systems effects of electric current single path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit Working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements		 relevant industry standards relating to transformers 	
construction of voltage transformers ratings of voltage transformers auto-transformers and instrument transformers transformer operation transformer losses, efficiency and cooling transformer voltage regulation percentage impedance parallel operation of transformers relevant manufacturer specifications UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations electrical safety WHS/OHS methods to rescue a person in contact with live electrical conductors or equipment application of emergency first aid requirements for an electric shock victim dangers of high voltage (HV) equipment and distribution systems effects of electric current single path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating systems) fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements requirements requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements		o application of transformers	
ratings of voltage transformers auto-transformers and instrument transformers transformer losses, efficiency and cooling transformer losses, efficiency and cooling transformer voltage regulation percentage impedance parallel operation of transformers relevant manufacturer specifications electrical safety WHS/OHS methods to rescue a person in contact with live electrical conductors or equipment application of emergency first aid requirements for an electric shock victim dangers of high voltage (HV) equipment and distribution systems effects of electric current single path d.c. circuits multiple path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating systems), including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements		 transmission and distribution transformers 	
auto-transformers and instrument transformers transformer operation transformer losses, efficiency and cooling transformer voltage regulation percentage impedance parallel operation of transformers relevant manufacturer specifications electrical safety WHS/OHS methods to rescue a person in contact with live electrical conductors or equipment application of emergency first aid requirements for an electric shock victim application of emergency first aid requirements for an electric shock victim application of emergency first aid requirements for an electric shock victim application of emergency first aid requirements for an electric shock victim application of emergency first aid requirements for an electric shock victim application of emergency first aid requirements for an electric shock victim application of emergency first aid requirements of alternating current (a.c.) circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit UEEEL0047 - Identify, shut down and restart systems with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements and controlling risks in compliance with regulatory and enterprise requirements and interprise systems, including renewable and non-renewable generating systems battery storage systems, including regulatory and manufacturer requirements alternate supplies of electric current systems, including regulatory and manufacturer requirements requirements alternate supplies of electrical safety and controlled equipment of each type of system must comply site and regulatory documentation requirements		o construction of voltage transformers	
transformer operation transformer losses, efficiency and cooling transformer voltage regulation percentage impedance parallel operation of transformers relevant manufacturer specifications UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations electrical safety WHS/OHS methods to rescue a person in contact with live electrical conductors or equipment application of emergency first aid requirements for an electric shock victim adangers of high voltage (HV) equipment and distribution systems effects of electric current single path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating systems), including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements		o ratings of voltage transformers	
transformer losses, efficiency and cooling transformer voltage regulation percentage impedance parallel operation of transformers relevant manufacturer specifications UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations electrical safety WHS/OHS methods to rescue a person in contact with live electrical conductors or equipment application of emergency first aid requirements for an electric shock victim dangers of high voltage (HV) equipment and distribution systems effects of electric current single path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit Working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating systems), including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements		auto-transformers and instrument transformers	
transformer voltage regulation percentage impedance parallel operation of transformers relevant manufacturer specifications Design, install and verify compliance and functionality of general electrical installations		 transformer operation 	
DEEEL0039 - Design, install and verify compliance and functionality of general electrical installations Output Design, install and verify compliance and functionality of general electrical installations Output Design, install and verify compliance and functionality of general electrical installations Output Design, install and verify compliance and functionality of general electrical installations Output Design, install and verify compliance and functionality of general electrical safety WHS/OHS Output Design, install and verify compliance and functional functionality of general electric safety WHS/OHS Output Design, install and verify compliance and functional functions and functional functions of general electrical safety WHS/OHS Output Design, install and verify compliance with live electrical conductors or equipment and controlling rists aid requirements and installation systems and controlling rists in current (a.c.) circuit Output Design, install and verify of general electrical safety WHS/OHS Output Output Design, install and verify of general electrical safety WHS/OHS Output Output Design, install and verify of general electrical safety WHS/OHS Output Output		o transformer losses, efficiency and cooling	
DEEEL0039 - Design, install and verify compliance and functionality of general electrical installations Output Design, install and verify compliance and functionality of general electrical installations Output Design, install and verify compliance and functionality of general electrical installations Output Design, install and verify compliance and functionality of general electrical installations Output Design, install and verify compliance and functionality of general electrical safety WHS/OHS Output Design, install and verify compliance and functional functionality of general electric safety WHS/OHS Output Design, install and verify compliance and functional functions and functional functions of general electrical safety WHS/OHS Output Design, install and verify compliance with live electrical conductors or equipment and controlling rists aid requirements and installation systems and controlling rists in current (a.c.) circuit Output Design, install and verify of general electrical safety WHS/OHS Output Output Design, install and verify of general electrical safety WHS/OHS Output Output Design, install and verify of general electrical safety WHS/OHS Output Output			
DESELO039 - Design, install and verify compliance and functionality of general electrical installations			
UEEEL0039 - Design, install and verify compliance and functionality of general electrical installations • electrical installations • electrical safety WHS/OHS methods to rescue a person in contact with live electrical conductors or equipment • application of emergency first aid requirements for an electric shock victim • dangers of high voltage (HV) equipment and distribution systems • effects of electric current • single path d.c. circuits • multiple path d.c. circuits • multiple path d.c. circuits • alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit • working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements • main types, arrangements and configurations of alternative supplies (generating system), including renewable and non-renewable generating systems • fundamental requirements • safe isolation of the generator/energy source • labelling and identification of alternate supply systems • battery storage systems, including regulatory and manufacturer requirements • relevant industry standards to which the selection, installation and control equipment of each type of system must comply • site and regulatory documentation requirements			
Design, install and verify compliance and functionality of general electrical installations WHS/OHS methods to rescue a person in contact with live electrical conductors or equipment application of emergency first aid requirements for an electric shock victim dangers of high voltage (HV) equipment and distribution systems effects of electric current single path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit UEEEL0047 - Identify, shut down and restart systems with alternate supplies Werking safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating system), including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements		o relevant manufacturer specifications	
Design, install and verify compliance and functionality of general electrical installations WHS/OHS	UEEEL0039 -	·	
methods to rescue a person in contact with live electrical conductors or equipment application of emergency first aid requirements for an electric shock victim application of emergency first aid requirements for an electric shock victim dangers of high voltage (HV) equipment and distribution systems effects of electric current single path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit WEEEL0047 - Identify, shut down and restart systems with alternate supplies Working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating systems), including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements			
application of emergency first aid requirements for an electric shock victim dangers of high voltage (HV) equipment and distribution systems effects of electric current single path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating systems) including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements	functionality of general	o methods to rescue a person in contact with live electrical conductors	s or
dangers of high voltage (HV) equipment and distribution systems effects of electric current single path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating system), including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements	electrical installations	o application of emergency first aid requirements for an electric shock	
effects of electric current single path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit UEEEL0047 - Identify, shut down and restart systems with alternate supplies working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating systems), including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements			
single path d.c. circuits multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit UEEEL0047 - Identify, shut down and restart systems with alternate supplies main types, arrangements and configurations of alternative supplies (generating system), including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements			
 multiple path d.c. circuits alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit Working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating system), including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements 			
alternating voltage and current generation, phase relationships, energy in an alternating current (a.c.) circuit UEEEL0047 - Identify, shut down and restart systems with alternate supplies alternate supplies working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements main types, arrangements and configurations of alternative supplies (generating system), including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements			
UEEEL0047 - Identify, shut down and restart systems with alternate supplies Working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements Working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements Working safely with alternate supplies, including identifying hazards and controlling risks in compliance with regulatory and enterprise requirements Working safely with alternate supplies, including requirements			rav
Identify, shut down and restart systems with alternate supplies o main types, arrangements and configurations of alternative supplies (generating system), including renewable and non-renewable generating systems o fundamental requirements o safe isolation of the generator/energy source o labelling and identification of alternate supply systems o battery storage systems, including regulatory and manufacturer requirements o relevant industry standards to which the selection, installation and control equipment of each type of system must comply o site and regulatory documentation requirements			igy
 main types, arrangements and configurations of alternative supplies (generating system), including renewable and non-renewable generating systems fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements 	Identify, shut down and	and controlling risks in compliance with regulatory and enterprise	
 fundamental requirements safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements 		o main types, arrangements and configurations of alternative supplies	
 safe isolation of the generator/energy source labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements 		generating systems	
 labelling and identification of alternate supply systems battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements 		 fundamental requirements 	
 battery storage systems, including regulatory and manufacturer requirements relevant industry standards to which the selection, installation and control equipment of each type of system must comply site and regulatory documentation requirements 		 safe isolation of the generator/energy source 	
requirements o relevant industry standards to which the selection, installation and control equipment of each type of system must comply o site and regulatory documentation requirements		○ labelling and identification of alternate supply systems	
control equipment of each type of system must comply site and regulatory documentation requirements			
o site and regulatory documentation requirements			
NEEDE COOK			
	UEERE0001 -	o sustainable work practices	

UEE30820 Certificate III in Electrotechnology Electrician



Apply environmentally and sustainable procedures in the energy sector	 techniques for reducing carbon produced energy and hence greenhouse gases trade-related technologies and methods relevant risk mitigation processes relevant WHS/OHS legislated requirements relevant workplace documentation relevant workplace policies and procedures
UETTDRRF04 - Perform rescue from a LV panel	 emergency procedures for the rescue of a victim from a live LV panel encompassing emergency procedures required for the rescue of a victim from a live LV panel encompassing

Elective units (group A) – Syllabus

(maximum 120 points)

Subject	17	Outcome (Required Skills & Knowledge)
UEEDV0005 - Install and maintain for multiple access to telecommunication services	69 70 71 72 73 74 75 76 77	 customer interfaces, devices and system distribution installation and termination requirements Cabling Provider Rules general installation requirements cable distribution devices network boundaries indoor cabling underground cabling aerial cabling earthing protection surge suppression and system purpose, types and operation miscellaneous regulation cable identification telecommunication cable types cable installation techniques for general cable installation techniques to terminate and test earthing concepts
	7 68	 cable shielding and interference end-to-end testing hazards
UEEEL0033 - Conduct electrical tests of LV electrical machines	on	 connection of test/measuring devices into a circuit, including safety procedures and circuit arrangement current industry practices and technologies

UEE30820 Certificate III in Electrotechnology



Electrician	
	 electric motor/machine mechanical measuring, inspecting and testing devices and techniques
	o relevant job safety assessments or risk mitigation processes
	o relevant manufacturer specifications
	 relevant safe working practices, including safety procedures when using test/measuring devices
	 relevant WHS/OHS legislated requirements
	 relevant workplace documentation
	 relevant workplace policies and procedures
_	 storage, maintenance and care of test/measuring devices
= ∞	 sustainable energy principles and practices
	 taking and interpreting readings for continuity, insulation resistance, and short circuit tests on a magnetic circuit
	 test/measuring devices and their application, including a multimeter, growler, insulation resistance, continuity and short circuit testers

UEE30820 Certificate III in Electrotechnology Electrician



Volume of Learning

The volume of learning allocated to this qualification includes all teaching, learning and assessment activities that are required to be undertaken by the targeted student to achieve the learning outcomes of this qualification.

UEE30820 Certificate III in Electrotechnology Electrician are often the basis for trade outcomes and undertaken as part of a traineeship or apprenticeship. In these cases, the volume of learning for UEE30820 Certificate III in Electrotechnology Electrician may be required up to four years to achieve the learning outcomes.

The Volume of Learning is 1,486 hours consisting of scheduled delivery, self-paced study; and 2,340 hours of workplace evidence additional to scheduled hours.

Duration

Total duration for UEE30820 Certificate III in Electrotechnology Electrician is 3,826 hours over 129 weeks as follows:

- 105 weeks delivery and assessment
 - 856 hours scheduled mandatory face to face classes (8 hours per week during term time: theory, assessment, practical – classroom and simulated Electrician environment)
 - 315 hours online learning (3 hours per week during term time)
 - 315 hours self-paced learning (3 hours per week during term time)
 - 2,340 minimum hours approximately of workplace training (It is expected that the learner completes a minimum of 15 hrs per week over the duration of the course of 52 weeks for 3 years)
- 24 weeks break

If students have previous relevant experience, where RPL/CT is awarded, the total volume of learning may be reduced below the Australian Qualifications Framework Indicators.

Alternatively, for new entrants or inexperienced students' timeframes may need to be increased to allow sufficient time to acquire required skills and knowledge.

Delivery

This qualification is delivered fourteen (14) hours per week, on one (1) day per week, over a hundred and five (105) weeks (approximately 2 years and 6 months duration).

Note: This course duration does not include workplace (on the job-training) hours but is required to obtain the qualification UEE30820 - Certificate III in Electrotechnology Electrician.

UEE30820 Certificate III in Electrotechnology Electrician



Assessment Methods

Assessment is structured throughout the course. If students are unable to achieve competency, additional support is provided through mentoring and access to re-assessment as outlined in our policies and procedures. Assessment requires achievement across all tasks to demonstrate competence and includes:

- Written Assessment
- Simulated/Practical Assessment (demonstration of skills)
- Portfolio of Evidence including Third party Report*

Recognition of Prior Learning (RPL)

Students who have completed corresponding units of competency and/or units contained within the packaging rules can apply for Credit Transfer. RPL evidence must include some of the following:

- Work Experience
- Life Experience
- Previous Study e.g. qualifications, industry training
- Professional Development Programs and/or Course

Resources

Students will be provided with the following resources required to complete the UEE30820 Certificate III in Electrotechnology Electrician upon enrolment:

- Peter Philips: Electrical Principles
- Ralph Berry, Phillip Chadwick: Electrical Trade Practices

Relevant Industry Standards

Superior Training Centre's delivery and assessment of the 108501D UEE30820 Certificate III in Electrotechnology Electrician complies with the following Australian standards:

- AS/NZS 3000
- AS/NZS 3008
- AS/NZS 3012
- AS/NZS 3160
- AS/NZS 3017

^{*}Supplementary and Indirect workplace evidence: Successful completion of this course will require students to submit a portfolio of work performed, additional evidence will be asked to the student to support competence in the unit: referee testimonials and employment history declaration.

UEE30820 Certificate III in Electrotechnology Electrician



Total Course Fees

This training is subsidised by the NSW Government under the Smart and Skilled program. Additional fees may apply for books and Exemplar Profiling.

Campus Details and Facilities

Superior Training Centre is located at Level 1/8 Oxford Rd, Ingleburn NSW 2565.

The campus at Ingleburn provides quality teaching and learning facilities for students. The training facilities have been set up to run classroom based straining sessions, to support the learning and assessment programs we offer.

The campus includes well-appointed facilities that offer a comfortable learning environment.

Library Services

Ingleburn Library is available to students to assist them with their study. The library is located at 76 Oxford Rd, Ingleburn NSW 2565 and is just a 15-minute walk from the campus.

How to Apply

Please contact Superior Training Centre by:

****** +61 2 9618 6809

UEE30820 Certificate III in Electrotechnology Electrician



Important Information – Student Handbook, Policies and Procedures, Fees and Charges

Information about our training and assessment policies and procedures are included on our website www.stc.nsw.edu.au and should be read by you, prior to enrolment in addition to the Student Handbook which is also located on our website. These documents contain important information about your training course, fees and charges including our refund policy.

Identification of Student Needs and Student Support

Student needs are declared by the applicant at the time of enrolment: the application form allows the applicant to self-declare where they have learning disabilities.

Every student is interviewed either face to face or over the telephone to attempt to establish the applicant skill and knowledge levels, their current employment and how that relates to the course content and interaction.

Where language literacy and numeracy are in question, Superior Training Centre has a language literacy and numeracy assessment they may undertake to confirm their level of language, literacy and numeracy skills.

Reasonable adjustments to training and assessment will be made and additional support (e.g. LLN, assistive technology, additional training, alternative delivery and assessment modes and methods) provided where students with physical attributes or specific learning needs are identified as requiring these changes to complete their training and assessment.