Course Flyer

UEE30811 (CRICOS code 094821G) Certificate III in Electrotechnology Electrician

Course Description

This qualification provides competencies to select, install, set up, test, fault find, repair and maintain electrical systems and equipment in building and premises. It includes ERAC requirements for an 'Electrician's licence'. The duration of the 094821G Certificate III in Electrotechnology Electrician is 20 contact hours per week for 94 weeks (training and work placement) and 18 weeks of holidays throughout the course.

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. International students must meet visa, financial (fees/relevant costs) and English language proficiency requirements.

RTO Entry

This course is recommended for students who wish to enter the industry or are currently employed in the Electrotechnology industry but without any formal qualifications. Students are required to have a limited knowledge and skill base in a variety of Electrotechnology contexts including making judgements, completing routine activities and taking limited responsibility in the Electrotechnology workplace.

Students are required to have language, literacy and numeracy skills as required to undertake these workplace functions. Proof of IELTS 5.5 is required as well as year 12 high school level completed.

Intake

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

Further Learning

Students who complete the 094821G Certificate III in Electrotechnology Electrician can continue their studies by advancing to the UEE40611 Certificate IV in Electrotechnology – Systems Electrician or any other relevant Certificate IV level qualification.

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Course Structure

This course comprises all the required 20 Core competency units to a total of 920 points and elective units totalling 140 points. Where each stream reflects different work outcomes. The following units of competency will be delivered for this qualification

Core units

UEENEEC020B	Participate in electrical work and competency development activities
UEENEEE101A	Apply Occupational Health and Safety regulations, codes and practices in the workplace
UEENEEE102A	Fabricate, assemble and dismantle utilities industry components
UEENEEE104A	Solve problems in d.c. circuits
UEENEEE105A	Fix and secure electrotechnology equipment
UEENEEE107A	Use drawings, diagrams, schedules, standards, codes and specifications
UEENEEE137A	Document and apply measures to control OHS risks associated with electrotechnology work
UEENEEG006A	Solve problems in single and three phase low voltage machines
UEENEEG033A	Solve problems in single and three phase low voltage electrical apparatus and circuits
UEENEEG063A	Arrange circuits, control and protection for general electrical installations
UEENEEG101A	Solve problems in electromagnetic devices and related circuits
UEENEEG102A	Solve problems in low voltage a.c. circuits
UEENEEG103A	Install low voltage wiring and accessories
UEENEEG104A	Install appliances, switchgear and associated accessories for low voltage electrical installations
UEENEEG105A	Verify compliance and functionality of low voltage general electrical installations
UEENEEG106A	Terminate cables, cords and accessories for low voltage circuits
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits
UEENEEG109A	Develop and connect electrical control circuits
UEENEEK142A	Apply environmentally and sustainable procedures in the energy sector

(20 Units – Total 920 points)

Elective units

Group A Electives (maximum 60 points)	
UEENEEC010B	Deliver a service to customers
Group B Electives (maximum 140 points)	
UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services

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Core Units Syllabus

(20 Units – Total 920 points)

Subject	Outcome (Required Skills & Knowledge)
UEENEEC020B - Participate in electrical work and competency development activities	Understand responsibilities under a competency development plan Understand methods of monitoring and reporting competency development activities Understand enterprise work activities policies and procedures
UEENEEE101A - Apply Occupational health Safety regulations, codes and practices in the workplace	Understand the basic legal requirements covering occupational health and safety in the workplace Understand the work environment Understand manual Handling Understand chemicals in the workplace Understand working at heights Understand confined spaces Understand physical and psychological hazards Understand working safely with electricity Understand life support - CPR in the workplace
UEENEEE102A - Fabricate, dismantle, assemble of utilities industry components	Understand mechanical drawing interpretation and sketching Understand workshop planning and materials Understand measuring and marking out Understand holding and cutting Understand drills and drilling Understand tapping and threading Understand general Hand Tools Understand joining techniques Understand portable electric power tools Understand sheet metal work Understand low tolerance measurement Understand dismantling and assembly techniques
UEENEEE104A - Solve problems in d.c. circuits	Understand Basic electrical concepts Understand Basic electrical circuit Understand Ohm's Law Understand Electrical power Understand Effects of electrical current Understand EMF sources energy sources and conversion electrical energy Understand Resistors Understand Series circuits Understand Parallel circuits Understand Series/parallel circuits Understand Factors affecting resistance

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	Understand Effects of meters in a circuit Understand Resistance measurement Understand Capacitors and Capacitance Understand Capacitors in Series and Parallel
UEENEEE105A - Fix and secure Electrotechnology equipment	Understand device for securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories to hollow walls Understand device for securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories to solid walls Understand device for securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories to metal fixing Understand securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories using fixing adhesives and tapes
UEENEEE107A - Use drawings, diagrams, schedules, standards, codes and specifications	Understand architectural drawings Understand electrical drawings Understand circuit diagrams Understand wiring diagrams Understand building construction drawings and diagrams Understand regulation for undertaking electrical work Understand standards philosophy and format Understand purpose, format and content of typical job specifications
UEENEEE137A - Documents and apply measures to control OHS risks associated with electrical work	Understand risk management and assessment of risk encompassing Understand hazards and risks and control measures in working on construction sites Understand hazards associated with extra-low voltage, low-voltage and high-currents Understand hazards and risks and control measures associated with high-voltage Understand hazards and risks and control measures in working with low voltage equipment Understand hazards and risks and control measures associated with harmful, devices, materials, gases, dusts and airborne contaminant Understand how to determine the degree of the risk Understand use control measures to eliminate or control the risk Understand engaging in monitoring and reviewing processes to ensure control measures remain valid
UEENEEG006A - Solve problems in single and three phase low voltage machines	Understand transformer construction Understand transformer operation Understand transformer losses, efficiency and cooling

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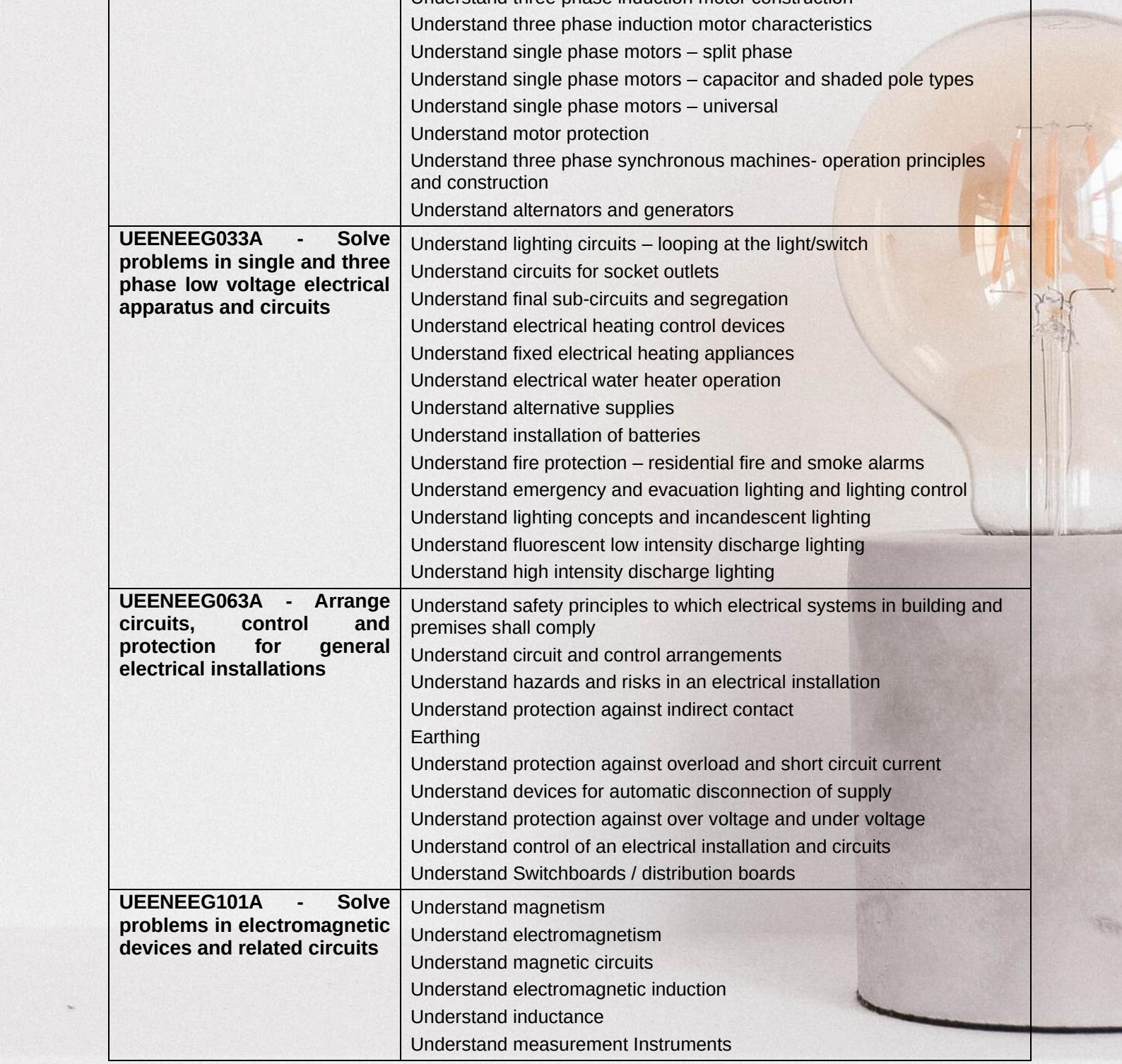
	Understand transformer voltage regulation and percent impedance Understand parallel operation of transformers and transformer auxiliary equipment Understand auto-transformers and instrument transformers Understand operating Principles of three phase induction motors Understand three phase induction motor construction Understand three phase induction motor characteristics Understand single phase motors – split phase Understand single phase motors – capacitor and shaded pole types Understand single phase motors – universal Understand motor protection Understand three phase synchronous machines- operation principles and construction Understand alternators and generators
UEENEEG033A - Solve problems in single and three phase low voltage electrical apparatus and circuits	Understand lighting circuits – looping at the light/switch Understand circuits for socket outlets Understand final sub-circuits and segregation Understand electrical heating control devices Understand fixed electrical heating appliances Understand electrical water heater operation Understand alternative supplies Understand installation of batteries Understand fire protection – residential fire and smoke alarms Understand emergency and evacuation lighting and lighting control Understand lighting concepts and incandescent lighting Understand fluorescent low intensity discharge lighting Understand high intensity discharge lighting
UEENEEG063A - Arrange circuits, control and protection for general electrical installations	Understand safety principles to which electrical systems in building and premises shall comply Understand circuit and control arrangements Understand hazards and risks in an electrical installation Understand protection against indirect contact Earthing Understand protection against overload and short circuit current Understand devices for automatic disconnection of supply Understand protection against over voltage and under voltage Understand control of an electrical installation and circuits Understand Switchboards / distribution boards
UEENEEG101A - Solve problems in electromagnetic devices and related circuits	Understand magnetism Understand electromagnetism Understand magnetic circuits Understand electromagnetic induction Understand inductance Understand measurement Instruments



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	Understand magnetic devices Understand machine principles Understand rotating machine construction, testing and maintenance Understand generators Understand machine efficiency
UEENEEG102A - Solve problems in low voltage a.c. circuits	Understand Alternating Current Quantities Understand Phasors Diagrams Understand Single Element a.c. circuits Understand RC and RL Series a.c. circuits Understand RLC Series a.c. circuits Understand Parallel a.c. Circuits Understand Power in an a.c. circuit Understand Power Factor Improvement Understand Harmonics and Resonance Effect in a.c. Systems Understand Three Phase Systems Understand Three phase star-connections Understand Three phase four wire systems Understand Three phase delta-connections and Interconnected systems Understand Energy and power requirements of a.c. systems Understand Fault Loop Impedance
UEENEEG103A - Install low voltage wiring and accessories	Understand standards, codes and requirements applicable to the installation of wiring systems Understand use of other installation standards called up by the Wiring Rules for special situations Understand hazardous areas Understand requirement for the installation of cables and accessories in damp situations and Understand ELV installations Understand aerial cabling Underground cabling Understand techniques for installing cables and wiring systems
UEENEEG104A - Install appliances, switchgear and associated accessories for low voltage electrical installations	Understand installation standards, codes and requirements applicable to installing electrical equipment Understand terminal configuration for connection of phase, neutral and protective earthing conductors for each type of equipment Understand building codes affecting the installation of current-using equipment and accessories in buildings, structures and premises Understand issues affecting electrical installations in heritage buildings and premises
UEENEEG105A - Verify compliance and functionality of low voltage general electrical installations	Understand electrical safety Understand legislated regulations Understand how to conduct visual inspection of installations for compliance with the Wiring Understand rules Understand testing installations Understand documentation Understand effects of electric current

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	Understand single path practical circuit Understand single-source multiple-path d.c. circuits Understand alternating voltage and current generation, phase relationships, energy in an a.c. circuit Understand fundamental safety principles of the AS/NZS 3000 Part 1 (Section 1) and deemed to comply solution given in Part 2 Understand electric motor selection, starting method and overload protection Understand ability to apply AS/NZ 3000 requirements for protective and functional earthing MEN system and its application Understand knowledge of the application of transformers Understand ability to apply AS/NZ 3000 requirements for protection of circuit against overcurrent and abnormal voltages Understand additional protection by use of RCDs and use of extra-low voltage for basic and fault protection Understand ability to select cables for single and three phase mains and sub-mains for single and multiple installations that comply with requirements of AS/NZS 3000 and AS/NZS 3008.1 Understand ability to select cables for final sub-circuits that comply with requirements of AS/NZS 3000 and AS/NZS 3008.1 Understand ability to apply AS/NZS 3000 requirements for control and protection of installations Understand ability to apply AS/NZS 3000 requirements for the installation of electrical equipment in given damp situations Understand ability to install, modify and test electrical equipment for construction and demolition sites, complying with AS/NZS 3012 and applicable workplace safety legislation Understand knowledge of AS/NZS 3000 requirements for the installation of aerial conductors and underground wiring Understand knowledge of AS/NZS 3000 requirements for electrical installations in hazardous areas Understand ability to perform effective safe isolation of any equipment Understand ability to apply AS/NZS 3000 requirements to install and terminate thermoplastic insulated cables; elastomer sheathed cables; XLPE sheathed cables; and high temperature cables; armoured cables; and neutral screened cables in a wide range of applications Understand ability to perform the circuit tests required for electrical cables in a range of installations and final sub-circuit Understand ability to install final sub-circuit wiring into switchboards and connect to switchboard equipment in accordance with AS/NZS 3000 and electricity distributor's requirements Understand ability to apply AS/NZS 3000 and electricity distributor's requirements for the installation and connect consumers mains Understand ability to read, sketch and interpret electrical diagrams Understand knowledge and understanding occupational safety and health Understand knowledge and understanding of the requirements for personal safety in the workplace

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	Understand process in rescuing a person in contact with live electrical conductors or equipment and the primary importance of the safety of the rescuer Understand application of emergency first aid requirements for an electric shock victim Understand dangers of high voltage equipment and distribution systems Understand systematic method of commissioning and decommissioning electrical equipment and installations Understand diagnosing and rectifying faults in electrical apparatus and associated circuits.
UEENEEG106A - Terminate cables, cords and accessories for low voltage circuits	Understand cable types and terminations Understand cords, cables and plugs Understand flat TPS wiring systems Understand circular TPS wiring systems Understand thermoplastic insulated cables in non-metallic enclosures Understand thermoplastic insulated cables in metallic enclosures Understand fire protection cabling and systems Understand steel wire armoured (SWA) cables Understand trailing cables and catenary systems
UEENEEG107A - Select wiring systems and cables for low voltage general electrical installations	Understand performance requirements - design and safety Understand final sub-circuit arrangements Understand factors affecting the suitability of wiring systems Understand maximum demand on consumer's mains/sub-mains Understand cable selection based on current carrying capacity requirements Understand cable selection based on voltage drop requirements Understand cable selection based on fault loop impedance requirements Understand selecting protection devices Understand selecting devices for isolation and switching Switchboards
UEENEEG108A - Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	Understand troubleshooting concepts Understand troubleshooting water heater and appliance circuits/equipment Understand troubleshooting electrical appliance circuits/equipment Understand troubleshooting lighting circuits Understand troubleshooting single phase motor and control circuits Understand troubleshooting three phase induction motor Understand troubleshooting electrical installations
UEENEEG109A - Develop and connect electrical control circuits	Understand basic relay circuits Understand relay circuits and drawing conventions Understand remote STOP-START control and electrical interlocking Understand time delay relays Understand circuits using contactors Understand jogging and interlocking Understand control devices

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	Understand programmable relays Understand three-phase induction motor starters Understand three-phase induction motor starters- reduced voltage Understand three-phase induction motor reversal and braking Understand three-phase induction motor speed control
UEENEEK142A – Apply Environmentally and sustainable procedures in the energy sector	Understand sustainable work practices encompassing Understand techniques for reducing carbon produced energy and hence greenhouse gases

Elective units (group A) – Syllabus

(maximum 60 points)

Subject	Outcome (Required Skills & Knowledge)
UEENEEC010B Deliver a service to customers	Understand enterprise communication methods Understand work activities records Understand Problem solving concepts and techniques Understand Enterprise customer relations protocols Understand Enterprise quality management system Understand how to instruct users in the use of specific items of equipment and systems

Elective units (group B) – Syllabus

(a minimum of 80 points and maximum of 140 points)

Subject	Outcome (Required Skills & Knowledge)
UEENEEF102A Install and maintain cabling for multiple access to telecommunication services	Understand principles and characteristics of sound Understand transmission of sound Understand telephone transmitters Understand telephone receivers Understand telephone circuits Understand an overview of earthing and protection

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Volume of Learning

The volume of learning allocated to a qualification will vary depending on the level of the qualification and the experience and competency of the student. Students must complete the allocated hours for the qualification they are undertaking in order to achieve competency. If the student applies for RPL or Credit Transfer, the volume of learning may be reduced. The hours that make up the volume of learning for 094821G Certificate III in Electrotechnology Electrician are:

Category	Hours
Classroom Based Learning	1200
Simulated/Practical Assessments	725
Workplace Learning	416
Total	**2341***

**The total volume of learning for a Certificate III level qualification must be at least 1200 hours*

Delivery

The duration for this course in training weeks will be as 20 contact hours per week for 94 weeks.

This will involve a blend of classroom based, simulated and supervised workplace based training to ensure full competency.

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
- Portfolio of Evidence including Third party Report
- Simulated/Practical Assessment (demonstration of skills)
- Workplace observation and demonstration

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 Courses

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Resources

Students will be provided with the following resources required to complete the 094821G 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 094821G 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

Total Course Fees

$ 1,000	Deposit ONSHORE (non-refundable). This amount comes out of subsequent course fees.
$ 5,000	Deposit OFFSHORE (AUD$1,000 non-refundable). This amount comes out of subsequent course fees.
$26,000	Course Fees (paid by payment plan)
$ 1,000	Resource Fee for all books and materials

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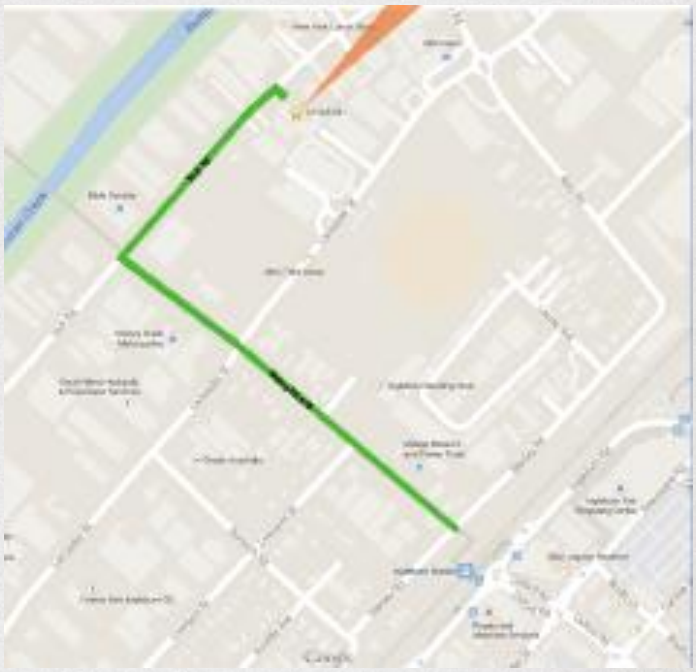
Campus Details and Facilities



Superior Training Centre is located at 1/13 York Road, 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

✉ info@stc.nsw.edu.au

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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.