Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

RTO ID NUMBER 41122 CRICOS PROVIDER 03591C

Course Description

This qualification covers competencies to select components, install, set up, test, fault find, repair and maintain refrigeration systems and equipment that apply to food storage and preservation, and air conditioning and air distribution equipment in buildings and premises. It includes regulatory requirements for purchasing and handling refrigerants.

Competency development activities in this qualification are subject to regulations directly related to licencing. A relevant contract of training through an apprenticeship or relevant employment may be required to enable the application of the required knowledge and skills to on-the-job work activities and environments.

Refrigerant Handling Licence:
The achievement of the qualification meets the training components for the full national Refrigerant Handling Licence which is required to work on refrigeration and air conditioning equipment that carries the risk of a fluorocarbon refrigerant being emitted while decanting the refrigerant or manufacturing, installing, commissioning, servicing, maintaining or decommissioning refrigeration and air conditioning equipment.

Refrigeration and Air Conditioning Occupational Licence:
Additional and/or other conditions may apply in some jurisdictions subject to regulations related to refrigeration/air conditioning work. Practice in the workplace and during training is also subject to work health and safety (WHS)/occupational health and safety (OHS) regulations.

Electrical Occupation Licence:
The achievement of this qualification with the core restricted electrical units meets the electrical regulatory requirements for related restricted electrical work in most state/territories. This is required to work 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.).

Job Roles and Career Pathways

The qualification is designed for students wishing to enter the Electrotechnology industry for roles including an Air Conditioning and Refrigeration mechanic covering domestic, industrial and commercial premises. 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

T Electrotechnology Training Package requires a minimum language, literacy and numeracy skill levels needed to successfully complete unit undertaken within this qualification. In addition, students should be employed in the industry.

Apprenticeship Students
Superior Training Centre specific course entry requirements for UEE32225 - Certificate III in Air Conditioning and Refrigeration for Apprenticeship students are as follows:

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

- 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

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 UEE32225 - Certificate III in Air Conditioning and Refrigeration.

Where it is determined that an applicant may not have sufficient English language skills to complete the qualification and work successfully as Air Conditioner, 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 UEE32225 - Certificate III in Air Conditioning and Refrigeration. Students not obtaining a competent result for all units in this course will receive a Statement of Attainment.

Participants completing UEE32225 - Certificate III in Air Conditioning and Refrigeration may enter into workplace or continue current roles including:

- **Air Conditioning and Refrigeration Mechanic in domestic, commercial and industrial Premises.**

Alternatively, participants in UEE32225 - Certificate III in Air Conditioning and Refrigeration may continue their vocational education by undertaking a Certificate IV level course from the UEE20 Electrotechnology Training Package such as the UEE42920 - Certificate IV in Refrigeration and Air Conditioning Systems.

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

Course Structure

This course comprises all the required Core competency units to a total of 1070 points and elective unit totalling 140 points. The following units of competency will be delivered for this qualification.

Core units

UEECD0007	Apply work health and safety regulations, codes and practices in the workplace
UEECD0016	Document and apply measures to control WHS risks associated with electrotechnology work
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications
UEERA0036	Establish the basic operating conditions of vapour compression systems
UEECD0019	Fabricate, assemble and dismantle utilities industry components
UEERA0035	Establish the basic operating conditions of air conditioning systems
UEECD0020	Fix and secure electrotechnology equipment
UEERA0059	Prepare and connect refrigerant tubing and fittings
UEERE0001	Apply environmentally and sustainable procedures in the energy sector
UEERA0050	Install refrigerant pipe work, flow controls and accessories
UEECD0042	Solve problems in ELV single path circuits
UEERL0004	Disconnect – reconnect electrical equipment connected to low voltage (LV) installation wiring*
UEERL0005	Locate and rectify faults in low voltage (LV) electrical equipment using set procedures*
UEERL0001	Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply
UEERL0002	Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c.
UEERA0062	Recover and charge refrigerants*
UEERA0079	Safely handle refrigerants and lubricants*
UEERA0092	Solve problems in low voltage refrigeration and air conditioning circuits
UEERA0044	Find and rectify faults in single phase motors and associated
UEERA0045	Find and rectify faults in three phase motors and associated controls*
UEERA0081	Select refrigerant piping, accessories and associated controls
UEERA0031	Diagnose and rectify faults in air conditioning and refrigeration control systems
UEERA0099	Install, commission, service and maintain air conditioning systems*
UEERA0052	Install, commission, service and maintain low temperature systems*
UEERA0053	Install, commission, service and maintain medium temperature systems*
UEECO0010	Participate in refrigeration and air conditioning work and competency development activities
UEERA0094	Verify functionality and compliance of refrigeration and air conditioning installations

(27 Units - Total 1070 points)

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

Elective units

Group A electives (a minimum of 0 points and maximum of 60 points)	
BSBOPS203	Deliver a service to customers
UEECO0002	Maintain documentation
HLTAID009	Provide cardiopulmonary resuscitation
CPCWHS1001	Prepare to work safely in the construction industry

Group B Electives: (a minimum of 80 points and maximum of 140 points)	
UEERA0070	Resolve problems in central plant air conditioning systems
UEERA0097	Install, commission, service and maintain variable refrigerant flow air conditioning systems

Core Units Syllabus

(27 Units-Total 1070 points)

Subject	Outcome (Required Skills & Knowledge)
UEECD0007 - Apply work health and safety regulations, codes and practices in the workplace	○ Effective verbal and written communication techniques ○ Electrotechnology work environment, including ○ Legal requirements relevant to WHS/OHS in the workplace ○ Life support - cardiopulmonary resuscitation (CPR) in the workplace ○ Relevant safe work method statements (SWMS)/job safety analysis (JSA) or risk mitigation processes ○ Typical hazards associated with electrotechnology work environments and their control ○ Silica ○ Hazardous gases ○ Chemicals in the workplace ○ Confined spaces ○ Physical and psychological hazards, including excessive noise, vibration, thermal stress, radiation, lasers, occupational overuse syndrome, stress, drugs and alcohol ○ working at heights ○ working safely with electricity

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

UEECD0016 - Document and apply measures to control WHS risks associated with electrotechnology work	○ risk management and assessment of risks ○ recognising and assigning a level of risk ○ identifying control measures to eliminate or control risk ○ control measure documentation ○ construction site hazards, risks and control measures ○ hazards, risks and control measures associated with HV ○ hazards, risks and control measures associated with LV equipment ○ hazards associated with extra-low voltage (ELV), LV and high currents
UEECD0051 - Use drawings, diagrams, schedules, standards, codes and specifications	○ architectural drawings ○ building construction drawings and diagrams ○ circuit diagrams ○ electrical drawings ○ 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 ○ 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 ○ wiring diagrams
UEERA0036 - Establish the basic operating conditions of vapour compression systems	○ operating condition of vapour compression systems ○ working safely with refrigeration vapour compression system relevant industry standards, codes of practice, regulations and WHS/OHS legislated requirements ○ relevant manufacturer specifications ○ relevant risk mitigation processes ○ relevant workplace documentation ○ relevant workplace policies and procedures
UEECD0019 - Document and apply measures to control WHS risks associated with electrotechnology work	○ mechanical drawing interpretation and sketching ○ workshop planning and materials ○ measuring and marking out ○ holding and cutting materials ○ drills and drilling

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ tapping and threading including type and size of commonly used threads used in electrotechnology work ○ general hand tools used in electrotechnology work ○ joining techniques ○ portable power tools in electrotechnology work ○ compressed gas operated tools in electrotechnology work ○ sheet metal work ○ low tolerance measurement ○ dismantling and assembly techniques, including procedures for ensuring the safe treatment of dismantled components ○ relevant tools for specific tasks
UEERA0035 - Establish the basic operating conditions of air conditioning systems	○ operating condition of air conditioning system ○ relevant industry standards, codes of practice, regulations and WHS/OHS legislated requirements ○ relevant manufacturer specifications ○ relevant risk mitigation processes ○ relevant workplace documentation ○ relevant workplace policies and procedures
UEECD0020 - Fix and secure electrotechnology equipment	○ devices, tools, equipment and methods for supporting, fixing and protecting electrotechnology equipment wiring/cabling/piping and functional accessories ○ relevant electrical regulations and legislations ○ relevant job safety assessments or risk mitigation processes ○ relevant electrotechnology equipment manufacturer specifications ○ relevant WHS/OHS legislated requirements ○ relevant workplace documentation ○ relevant workplace policies and procedures ○ sustainable energy principles and practices
UEERA0059 - Prepare and connect refrigerant tubing and fittings	○ copper tube grades, including types, properties, applications and handling ○ dissimilar metals ○ potential hazards with refrigerant tubing and fittings ○ refrigerant tubing and fittings techniques ○ refrigeration copper tube fittings and access valves ○ relevant legislation, industry standards, codes of practice and regulations ○ relevant manufacturer specifications

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ relevant risk mitigation processes, including safe working practices ○ relevant WHS/OHS legislated requirements ○ relevant workplace documentation ○ relevant workplace policies and procedures ○ SDS/MSDS ○ sustainable energy principles and practices ○ tools and equipment, including care and maintenance
UEERE0001 - Apply environmentally and sustainable procedures in the energy sector	○ sustainable work practices ○ 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
UEERA0050 - Install refrigerant pipe work, flow controls and accessories	○ installation of pipe work, flow controls and accessories requirements and practices for refrigeration and air conditioning systems ○ relevant legislation, industry standards, codes of practice and regulations ○ relevant manufacturer specifications ○ relevant risk mitigation processes ○ relevant WHS/OHS legislated requirements ○ relevant workplace documentation ○ relevant workplace policies and procedures
UEECD0042 - Solve problems in ELV single path circuits	○ basic electrical concepts ○ basic electrical circuit ○ effects of electrical current ○ electromotive force (EMF) sources, energy sources and conversion electrical energy ○ resistors ○ Ohm's law ○ electrical power ○ relevant electrical regulations and legislations ○ relevant manufacturer specifications

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes ○ relevant WHS/OHS legislated requirements ○ relevant workplace documentation ○ relevant workplace policies and procedures ○ series circuits ○ sustainable energy principles and practices ○ techniques to confirm that a circuit is isolated ○ techniques to check if tools, equipment and testing devices are operating correctly and safely
UEERL0004 - Disconnect – reconnect electrical equipment connected to low voltage (LV) installation wiring	○ the basic electrical circuit ○ relationships in an electrical circuit ○ test equipment selection and care ○ test equipment - voltage measurement ○ test equipment - resistance measurement ○ test equipment - current measurement, including advantage/s of the clip-on method of current measurement ○ cable connections ○ protection for safety ○ safety testing preparation and procedures ○ isolating supplies ○ disconnecting electrical equipment – LV ○ reconnecting electrical equipment – LV ○ produce documentation and reports in accordance with workplace, industry and regulatory requirements
UEERL0005 - Locate and rectify faults in low voltage (LV) electrical equipment using set procedures	○ safe fault finding ○ types of single and multi-phase equipment ○ problem-solving techniques ○ documentation and reporting- including ○ relevant job safety assessments or risk mitigation processes include safe working methods statements ○ relevant industry standards, including AS/NZS 4836 Safe working on or near low-voltage electrical installations and equipment ○ relevant manufacturer specifications ○ relevant WHS/OHS legislated requirements

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

UEERL0001 - Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply	○ electrical safety requirements, including the requirements of AS/NZS 4836 Safe working on low-voltage electrical installations ○ basic electrical circuits ○ relationships in an electrical circuit ○ test equipment - resistance measurement ○ selection of flexible cords and plugs to suit given applications ○ connecting flexible cords and plugs to appliances ○ testing ○ producing documentation and reports ○ relevant WHS/OHS legislated requirements including inspection and testing of electrical equipment ○ relevant industry standards ○ relevant manufacturer specifications and operating instruction for tools, equipment and testing devices ○ relevant safe job safety assessments or risk mitigation processes ○ relevant workplace policies, procedures and instructions, including relevant workplace quality procedures
UEERL0002 - Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c.	○ safety ○ selection of flexible cords, cables and plugs to suit given applications ○ flexible cords, cables and plugs connected to multi-phase equipment ○ determine that a flexible cord, cable and plug is safe and is connected correctly ○ producing documentation and reports ○ problem-solving techniques ○ producing documentation and reports ○ relevant industry standards ○ relevant job safety assessments or risk mitigation processes ○ relevant manufacturer specifications and operating instruction for tools, equipment and testing devices ○ relevant WHS/OHS legislated requirements, including relevant inspections and tests ○ relevant workplace policies, procedures and instructions

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ relevant workplace quality procedures ○ selection of flexible cords, cables and plugs to suit given applications
UEERA0062 - Recover and charge refrigerants	○ evacuation and dehydration, including vacuum pump types, use and care, suitable vacuum measuring instruments, drop testing and evacuation methods, including triple and deep ○ pressure testing, including suitable gases, test values in accordance with standards and safe working procedures ○ refrigerant charging procedures and methods, including vapour and liquid ○ refrigerant recovery, including pump types, procedures for vapour and liquid recovery, disposal of recovered refrigerant and safety issues ○ relevant legislation, industry standards, codes of practice and regulations
UEERA0079 - Safely handle refrigerants and lubricants	○ compressor lubricant transferring equipment, procedures and requirements ○ compressor lubricant types, applications, properties and safe handling ○ decanting methods, including pressure differential, including pumping and temperature differential ○ environmental impact of climate change, including global warming potential (GWP) ○ environmental impact of ozone depletion, including ozone depletion potential (ODP) ○ leak detection methods, equipment, procedures and requirements ○ properties of an ideal refrigerant ○ refrigerant cylinder requirements and safe handling, including recovery cylinders ○ refrigerant properties, including classes, types and applications, boiling point, glide, composition, including components and safe handling, including flammability, toxicity and high pressure ○ relevant legislation, industry standards, codes of practice and regulations

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ relevant risk mitigation processes while handling refrigerants and lubricants, including potential hazards, risk control methods and safe working practices ○ safe fill ratios and relevant calculations ○ system contamination, prevention and removal, including types of contaminants and their effects on the operation of a system ○ terms, including primary, secondary, expendable, pure, azeotropic, zeotropic, blends, bubble point, dew point and critical point
UEERA0092 - Solve problems in low voltage refrigeration and air conditioning circuits	○ circuit protection and isolation ○ devices used for circuit protection and circuit isolation, including fuses, circuit breakers, residual current devices (RCDs) and over/under voltage ○ factors affecting resistance ○ impedance ○ parallel circuits and calculating equivalent circuit resistance and current ○ power ○ relevant standards, codes of practice and regulations ○ single phase a.c. ○ three phases a.c. ○ types of magnetic devices, including relays, contractors, solenoids, transformers and motors ○ types of meters/testers suitable for measuring capacitance ○ types of meters/testers suitable for measuring current flow ○ types of meters/testers suitable for measuring insulation resistance ○ types of meters/testers suitable for measuring resistance values and circuit conductivity ○ types of meters/testers suitable for measuring voltage ○ types, uses and safety considerations of capacitors used in the refrigeration and air conditioning industry ○ types, uses, and construction of transformers
UEERA0044 - Find and rectify faults in single phase motors and associated	○ circuit diagrams for single phase motors

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ relevant risk mitigation processes while finding and rectifying faults in motors and associated controls, including potential hazards, risk control methods and safe working practices ○ relevant standards, codes of practice, regulations and manufacturer specifications ○ single phase motor speed control in refrigeration and air conditioning systems ○ types and applications of single-phase motor starting relays and protection devices used in refrigeration and air conditioning systems ○ types and applications of single-phase motors used in refrigeration and air conditioning systems ○ typical faults in single phase motors and associated controls for refrigeration and air conditioning systems
UEERA0045 - Find and rectify faults in three phase motors and associated controls*	○ circuit diagrams for three phase motors ○ relevant risk mitigation processes while finding and rectifying faults in motors and associated controls, including potential hazards, risk control methods and safe working practices ○ relevant standards, codes of practice, regulations and manufacturer specifications ○ three phase motor speed control in refrigeration and air conditioning systems ○ types and applications of three phase motor starting and protection devices used in refrigeration and air conditioning systems ○ types and applications of three phase motors used in refrigeration and air conditioning systems ○ typical faults in three phase motors and associated controls for refrigeration and air conditioning systems
UEERA0081 - Select refrigerant piping, accessories and associated controls	○ refrigerant liquid and vapour flow control selection, including expansion valves, solenoids and pressure regulators ○ refrigerant piping layout and routing ○ refrigerant piping sizing and accessories selection for suction, discharge and liquid lines ○ refrigeration and air conditioning controls and capacity control selection, including pressure controls and thermostats

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ relevant environmental and sustainable principles and practices ○ relevant drawings and specifications ○ relevant equipment, including software applications ○ relevant industry standards, codes of practice and regulations ○ relevant manufacturer instructions ○ relevant problem-solving techniques ○ relevant refrigerant piping, accessories and controls for refrigeration and air conditioning installations ○ relevant safe work method statements (SWMS)/job safety assessments or risk mitigation processes ○ relevant WHS/OHS legislated requirements ○ relevant workplace documentation ○ relevant workplace policies and procedures
UEERA0031 - Diagnose and rectify faults in air conditioning and refrigeration control systems	○ diagnose and rectify faults in refrigeration and air conditioning control systems ○ refrigeration and air conditioning direct digital control applications and basic operation ○ relevant legislation, industry standards, codes of practice and regulations ○ relevant manufacturer specifications ○ relevant risk mitigation processes ○ relevant WHS/OHS legislated requirements ○ relevant workplace documentation ○ relevant workplace policies and procedures ○ WiFi/router controls for variable air volume (VAV) and remote access controls for refrigeration and air conditioning
UEERA0099 - Install, commission, service and maintain air conditioning systems	○ air distribution ○ basic ducted split system selection for a residential application ○ cable selection based on the existing cable, current-carrying capacity requirements ○ cable selection based on voltage-drop requirements ○ commissioning air conditioning systems requirements and procedures ○ common items identified on a preventative maintenance schedule

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ defrost (de-ice) operation, including activation and termination conditions ○ equipment installation requirements and procedures ○ fault finding and rectification of air conditioning systems requirements and procedures ○ package units, including construction, applications and installation ○ reading and interpreting single phase wiring and pipe work schematics for a typical cooling only room air conditioner ○ reading and interpreting single phase wiring and pipe work schematics for a typical reverse cycle high wall split air conditioner ○ reading and interpreting three phase wiring and pipe work schematics for a typical reverse cycle package unit ○ relevant standards, codes and requirements applicable to the installation of cables ○ techniques for installing cables and wiring systems encompassing ○ ventilation
UEERA0052 - Install, commission, service and maintain low temperature systems	○ freezer room protection components encompassing purpose of implosion ports and floor, door and drain heaters ○ common items identified on a preventative maintenance schedule for a low temperature cabinet and freezer room ○ commissioning typical general-purpose low temperature refrigeration systems requirements and procedures ○ definition and purpose of hazard analysis and critical control points (HACCP) ○ defrost methods, including electric element and hot gas defrost employing a time initiated and pressure or temperature terminated control ○ fault finding and rectification of low temperature systems requirements and procedures ○ low temperature display cabinet types, construction and applications, including solid door cabinets, glass door displays and under-bars

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ low temperature freezer rooms, including construction and ancillary fittings ○ low temperature merchandiser types, construction and applications, including island and reach-in ○ reading and interpreting single phase wiring and pipe work schematics for a typical low temperature cabinet or freezer room employing electric element or hot gas defrost ○ reading and interpreting three phase wiring schematics for a typical low temperature freezer room employing electric element or hot gas defrost ○ requirements for condensate removal/drainage ○ typical range of products stored in low temperature cabinets/freezer rooms and required storage conditions, including frozen food and ice cream products ○ refrigeration equipment installation requirements and procedures
UEERA0053 - Install, commission, service and maintain medium temperature systems	○ commissioning typical general-purpose medium temperature refrigeration system requirements and procedures ○ common items identified on a preventative maintenance schedule for a medium temperature cabinet or cool room ○ definition and purpose of hazard analysis and critical control points (HACCP) ○ defrost methods, including natural off-cycle defrost and forced off-cycle defrost employing a time initiated and time terminated control ○ fault finding and rectification of medium temperature systems requirements and procedures ○ medium temperature cool rooms, including construction and ancillary fittings ○ medium temperature display cabinet types, construction and applications, including solid door cabinets, glass door displays, countertops, under-bars and open decks ○ medium temperature merchandiser types, construction and applications, including single deck, multi-deck, island, reach-in and serviced

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ off-cycle pump-down, including thermostat controlling liquid line solenoid valve purpose and components required ○ range of products stored in medium temperature cabinets and cool rooms and required storage conditions, including fresh meat, dairy, delicatessen, mixed drinks, fruit and vegetables ○ reading and interpreting single phase wiring and pipe work schematics for a typical medium temperature cabinet or cool room incorporating basic off-cycle, including thermostat controlling compressor ○ reading and interpreting single phase wiring and pipe work schematics for a typical medium temperature cabinet or cool room incorporating off-cycle pump-down, including thermostat controlling liquid line solenoid valve ○ reading and interpreting three phase wiring schematics for a typical medium temperature cool room incorporating off-cycle pump-down, including thermostat controlling liquid line solenoid valve ○ refrigeration equipment installation requirements and procedures ○ requirements for condensate removal/drainage
UEECO0010 - Participate in refrigeration and air conditioning work and competency development activities	○ competency development plan or training plan responsibilities ○ methods of monitoring and reporting competency development activities ○ relevant job safety assessments or risk mitigation processes ○ relevant refrigeration and air conditioning manufacturer specifications ○ relevant WHS/OHS legislated requirements ○ relevant workplace documentation ○ relevant workplace policies and procedures
UEERA0094 - Verify functionality and compliance of refrigeration and air conditioning installations	○ refrigeration and air conditioning installation functionality tests and verification methods ○ refrigeration and air conditioning installation tests and verification methods, including visual inspections, mandatory tests and verification requirements ○ refrigeration testing requirements and procedures ○ vacuum electrical testing requirements and procedures

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ relevant environmental and sustainable principles and practices ○ relevant equipment, materials, tools and testing devices ○ relevant industry standards, codes of practice and regulations ○ relevant installation specifications and drawings ○ relevant job safety assessments or risk mitigation processes, including electrical safe working practices ○ relevant refrigeration and air conditioning manufacturer specifications and instructions ○ relevant WHS/OHS legislated requirements ○ relevant workplace documentation ○ relevant workplace policies and procedures ○ verifying compliance and functionality of refrigeration and air conditioning installations

Elective units group A
(a minimum of 0 and maximum 60 points)

Subject	Outcome (Required Skills & Knowledge)
BSBOPS203 - Deliver a service to customers	○ key provisions of customer service legislation and consumer law ○ requirements for responding to the needs of customers from a diverse background ○ workplace organisational policies and procedures relating to customer service and the customer service process
UEECO0002 - Maintain documentation	○ computers and applications ○ relevant risk mitigation processes, including risk control measures ○ relevant WHS/OHS legislated work records requirements ○ relevant workplace communication methods ○ relevant workplace documentation and work activities records ○ relevant workplace record management policies and procedures

HLTAID009 Provide cardiopulmonary resuscitation	○ guidelines and procedures including:
	  ○ relevant ARC guidelines to managing the unconscious breathing and non-breathing casualty and provision of CPR
	  ○ potential incident hazards and risk minimisation processes when providing first aid

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ infection control procedures, including use of standard precautions and resuscitation barrier devices ○ requirements for currency of skill and knowledge ○ first aid codes of practice ○ appropriate workplace or site procedures relevant to the provision of first aid ○ legal, workplace and community considerations, including: ○ duty of care requirements ○ own skills and limitations ○ consent and how it relates to the conscious and unconscious casualty ○ privacy and confidentiality requirements ○ awareness of potential need for stress management techniques and available support for rescuers ○ considerations when providing CPR, including: ○ upper airway and effect of positional change ○ appropriate duration and cessation of CPR ○ appropriate use of an AED ○ safety and maintenance procedures for an AED ○ chain of survival ○ how to access emergency services ○ techniques for providing CPR to adults, children and infants including: ○ how to recognise that a casualty is unconscious and not breathing normally ○ rate, ratio and depth of compressions and ventilations ○ correct hand positioning for compressions ○ basic anatomy, physiology and the differences between adults, children and infants relating to CPR.
CPCWHS1001 Prepare to work safely in the construction industry	○ basic duty of care, and the roles, rights and responsibilities of business owners and workers in relation to working safely while undertaking construction work ○ basic meaning of the terms ‘hazard’ and ‘risk’ ○ basic principles of risk management ○ basic procedures for accessing first aid ○ construction hazards ○ construction work that requires a high-risk work licence ○ types, purpose and use of PPE used in construction, as specified in the performance evidence, and including safety footwear, harnesses and respiratory protection, and UV protective clothing and sunscreen ○ construction emergencies ○ construction incidents

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

	○ safe work practices that should be followed in construction work ○ meanings and symbols associated with construction safety signs, symbols and tags

Elective units group B

(minimum of 80 points and maximum of 140 points)

Subject	Outcome (Required Skills and Knowledge)
UEERA0070 - Resolve problems in central plant air conditioning systems	○ central plant air conditioning systems ○ maintenance schedules ○ normal operating parameters of central plant air conditioning systems ○ operating and control principles of central plant air conditioning systems ○ relevant manufacturer specifications ○ relevant measurements and calculations ○ relevant risk mitigation processes ○ relevant standards, codes and regulations ○ relevant tools, equipment and testing devices ○ relevant WHS/OHS legislated requirements ○ relevant workplace documentation ○ relevant workplace policies and procedures ○ system faults and testing methods ○ system specifications, including 'as-installed' drawings, maintenance and service records
UEERA0097 Install, commission, service and maintain variable refrigerant flow air conditioning systems	○ VRF air conditioning systems ○ VRF pipework ○ VRF wiring ○ requirements for branch box installation location ○ requirements for installation of multiple outdoor VRF units ○ working with refrigerants in VRF systems ○ symptoms of typical faults and repair techniques ○ maintenance requirements specific to VRF systems ○ commissioning requirements specific to VRF systems ○ manufacturer programs and tools

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

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.

UEE32225 Certificate III in Air-conditioning and Refrigeration are often the basis for trade outcomes and undertaken as part of a traineeship or apprenticeship. In these cases, the volume of learning for UEE32225 Certificate III in Air-conditioning and Refrigeration may be required up to four years to achieve the learning outcomes.

The Volume of Learning is 1,414 hours consisting of scheduled delivery, self-paced study; and 2,340 hours of project and workplace evidence additional to scheduled hours.

Duration
Total duration for UEE32225 Certificate III in Air-conditioning and Refrigeration is 3,754 hours over 125 weeks as follows:

- 101 weeks delivery and assessment
  - 808 hours scheduled mandatory face to face classes (8 hours per week during term time: theory, assessment, practical – classroom and simulated Air-conditioning and Refrigeration environment)
  - 303 hours online learning (3 hours per week during term time)
  - 303 hours self-paced learning
    (3 hours per week during term time)
  - 2,340 hours approximately of workplace evidence (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

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

Delivery

This qualification is delivered fourteen (14) hours per week, on one (1) day per week, over one hundred one (101) weeks. (Approximately 2 years and 6 months duration).

Note: This course duration does not include workplace (on-the-job training) hours.

This qualification is delivered to apprentice's students fulltime integrating the following blended modes of delivery:

- Scheduled face to face class hours
- Online learning hours
- Self-study

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*

**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.*

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

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

Resources

Students are required to purchase essential textbooks to complete the UEE32225 Certificate III in Air Conditioning and Refrigeration upon enrolment:

- Australian Refrigeration and Air-Conditioning Vol 1 & Vol 2 by Graham Boyle

Relevant Industry Standards

Superior Training Centre's delivery and assessment of the UEE32225 Certificate III in Air Conditioning and Refrigeration complies with the following Australian standards:

- AS1668
- AS/NZS 3000
- AS/NZS 5149
- HB40
- AS/NZS 3666
- AS 2913

Course Fees

This training is subsidised by the NSW Government under the Smart and Skilled program. The following fees apply:
Exemplar Profiling for 3 years - $150 GST inclusive
Essential Textbooks and High Vis Shirt - $320 GST inclusive

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 training 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.

Course Outline
UEE32225 Certificate III in Air Conditioning and Refrigeration

How to Apply

Please contact Superior Training Centre by:
☎ +61 2 9618 6809
✉ Info@stc.nsw.edu.au

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.