Australian Government

UEE51120 Diploma of Engineering Technology - Refrigeration and Air Conditioning

Release: 4

UEE51120 Diploma of Engineering Technology - Refrigeration and Air Conditioning

Modification History

Release	Comments
4	Updated Group A electives.
3	Updated superseded imported elective units.
2	Updated superseded imported elective units.
1	This qualification was first released in UEE Electrotechnology Training Package Release 2.0.

Qualification Description

This qualification covers competencies to develop systems and select equipment for heating, ventilation, air conditioning and/or refrigeration systems.

This qualification has no minimum work placement hours.

Licensing/Regulatory Information

No licensing, legislative or certification requirements apply to this qualification at the time of publication.

Entry Requirements

There are no entry requirements for this qualification

Packaging Rules

A total of **1600 weighting points** comprising:

920 core weighting points listed below; plus

680 general elective weighting points from the general elective units listed below.

Choose a total of **680 weighting points** elective units from the list below, of which between **0 and 270 weighting points** can be taken from Group A; and between **0 and 100 weighting points** must be taken from Group B; and between **60 and 170 weighting points** must be taken from Group C; and between **270 and 620 weighting points** must be taken from Group D.

Up to **270 weighting points** of the general elective units Group A, may be selected, with appropriate contextualisation, from any relevant nationally endorsed Training Package or accredited course, provided selected units contribute to the vocational outcome of the qualification. Previously assigned weighting points are listed in the UEE Electrotechnology Companion Volume Implementation Guide (CVIG), if not listed weighting points will be 10 points, unless directed from the Electrotechnology Industry Reference Committee (IRC).

There are units of competency within this qualification that contain pre-requisites. Units of competency that have a pre-requisite requirement are identified by this symbol *. Refer directly to the units of competency to identify pre-requisite requirements to ensure all are complied with. A list of all pre-requisites is also provided in the UEE Pre-requisite Companion Volume.

Where imported units are selected, care must be taken to ensure all pre-requisite units specified are complied with.

Core units		**Weighting Points**
UEECD0007	Apply work health and safety regulations, codes and practices in the workplace	20
UEECD0010	Compile and produce an energy sector detailed report	60
UEECD0016	Document and apply measures to control WHS risks associated with electrotechnology work*	20
UEECD0019	Fabricate, assemble and dismantle utilities industry components*	40
UEECD0022	Identify building techniques, methods and materials used in energy sector work activities*	40
UEECD0027	Participate in development and follow a personal competency development plan	20
UEECD0039	Provide solutions to basic engineering computational problems*	60
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications*	40

UEERA0001	Analyse the operation of HVAC air and hydronic systems*	80
UEERA0002	Analyse the psychrometric performance of HVAC/R systems*	50
UEERA0003	Analyse the thermodynamic performance of HVAC/R systems	50
UEERA0028	Determine noise and vibration encountered in HVAC/R applications*	80
UEERA0034	Establish heat loads for commercial refrigeration and/or air conditioning applications*	80
UEERA0038	Establish the thermodynamic parameters of refrigeration and air conditioning systems*	80
UEERA0042	Evaluate thermodynamic and fluid parameters of refrigeration systems*	100
UEERA0061	Produce HVAC/R system design drawings*	80
UEERE0013	Develop strategies to address environmental and sustainability issues in the energy sector	20
Group A: Imported and common elective units		**Weighting Points**
BSBOPS203	Deliver a service to customers	20
CPCWHS1001	Prepare to work safely in the construction industry	10
CPPBDN6106	Produce building information modelling for building design projects	100
HLTAID009	Provide cardiopulmonary resuscitation	10
ICTICT214	Operate application software packages	20
MEM16006	Organise and communicate information*	20
MEM16008	Interact with computing technology*	20
MEM30031	Operate computer-aided design (CAD) system to produce basic drawing elements	40

MEM30032	Produce basic engineering drawings	80
MEM30033	Use computer-aided design (CAD) to create and display 3-D models*	40
UEECD0035	Provide basic instruction in the use of electrotechnology apparatus	20
UEECO0002	Maintain documentation	20
UEECO0015	Provide quotations for installation or service jobs	20
UEECO0017	Source and purchase material/parts for installation or service jobs	20
Group B: Qualification elective units		**Weighting Points**
UEECS0033	Use engineering applications software on personal computers	40
UEERA0005	Apply safety awareness and legal requirements for ammonia refrigerant	10
UEERA0006	Apply safety awareness and legal requirements for carbon dioxide refrigerant	10
UEERA0007	Apply safety awareness and legal requirements for flammable refrigerants	10
UEERA0036	Establish the basic operating conditions of vapour compression systems*	60
UEERA0081	Select refrigerant piping, accessories and associated controls*	40
Group C: Qualification elective units		**Weighting Points**
UEECO0001	Estimate electrotechnology projects	40
UEERA0060	Produce HVAC/R control system diagrams*	40
UEERA0080	Select basic commercial refrigeration system equipment, components and accessories*	40

UEERA0082	Select residential air conditioning system equipment, components and accessories*	40
UEERE0015	Implement and monitor energy sector environmental and sustainable policies and procedures	20
Group D: Qualification elective units		**Weighting Points**
UEECD0041	Solve electrotechnical engineering problems	60
UEECD0048	Undertake computations in an energy sector environment	120
UEECO0014	Prepare tender submissions for electrotechnology projects*	60
UEERA0014	Design ammonia refrigerated systems*	40
UEERA0015	Design carbon dioxide refrigerated systems*	40
UEERA0016	Design commercial refrigeration systems and select components*	80
UEERA0021	Design control systems for refrigeration or heating, ventilation and air conditioning systems*	80
UEERA0022	Design heating, ventilation and air conditioning (HVAC) systems and select components*	60
UEERA0023	Design hydrocarbon refrigerated systems*	40
UEERA0025	Design industrial refrigeration systems and select components*	80
UEERA0027	Design secondary refrigerant systems*	40
UEERA0039	Evaluate and report on building services energy management systems*	80
UEERA0040	Evaluate and report on the indoor air quality of buildings*	40
UEERE0066	Develop effective engineering strategies for energy reduction in buildings*	60

Pre-requisite Requirements

Unit of competency	Prerequisite requirement
UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEECD0039 Provide solutions to basic engineering computational problems	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEECO0014 Prepare tender submissions for electrotechnology projects	UEECO0001 Estimate electrotechnology projects
UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEECD0019 Fabricate, assemble and dismantle utilities industry components	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEERA0080 Select basic commercial refrigeration system equipment, components and accessories	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEECD0042 Solve problems in ELV single path circuits UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring

	UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEERA0038 Establish the thermodynamic parameters of refrigeration and air conditioning systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0050 Install refrigerant pipe work, flow controls and accessories UEERA0034 Establish heat loads for commercial refrigeration and/or air conditioning applications UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings

	UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0034 Establish heat loads for commercial refrigeration and/or air conditioning applications	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEERA0038 Establish the thermodynamic parameters of refrigeration and air conditioning systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

	UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0050 Install refrigerant pipe work, flow controls and accessories UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0082 Select residential air conditioning system equipment, components and accessories	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEECD0042 Solve problems in ELV single path circuits

	UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEERA0038 Establish the thermodynamic parameters of refrigeration and air conditioning systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0050 Install refrigerant pipe work, flow controls and accessories UEERA0034 Establish heat loads for commercial refrigeration and/or air conditioning applications UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations

	UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0022 Design heating, ventilation and air conditioning (HVAC) systems and select components	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERA0042 Evaluate thermodynamic and fluid parameters of refrigeration systems UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEERA0038 Establish the thermodynamic parameters of refrigeration and air conditioning systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

	UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0001 Analyse the operation of HVAC air and hydronic systems UEERA0050 Install refrigerant pipe work, flow controls and accessories UEERA0034 Establish heat loads for commercial refrigeration and/or air conditioning applications UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems

	UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0038 Establish the thermodynamic parameters of refrigeration and air conditioning systems	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0050 Install refrigerant pipe work, flow controls and accessories UEECD0019 Fabricate, assemble and dismantle utilities industry components

	UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0042 Evaluate thermodynamic and fluid parameters of refrigeration systems	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEERA0038 Establish the thermodynamic parameters of refrigeration and air conditioning systems

	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0001 Analyse the operation of HVAC air and hydronic systems UEERA0050 Install refrigerant pipe work, flow controls and accessories UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems

	UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0021 Design control systems for refrigeration or heating, ventilation and air conditioning systems	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0001 Analyse the operation of HVAC air and hydronic systems UEERA0050 Install refrigerant pipe work, flow controls and accessories

	UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEERA0060 Produce HVAC/R control system diagrams UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
MEM16006 Organise and communicate information	MEM13015 Work safely and effectively in manufacturing and engineering
MEM16008 Interact with computing technology	MEM16006 Organise and communicate information MEM13015 Work safely and effectively in manufacturing and engineering
UEERA0027 Design secondary refrigerant systems	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply

	UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERA0042 Evaluate thermodynamic and fluid parameters of refrigeration systems UEECD0042 Solve problems in ELV single path circuits UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEERA0038 Establish the thermodynamic parameters of refrigeration and air conditioning systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0001 Analyse the operation of HVAC air and hydronic systems UEERA0050 Install refrigerant pipe work, flow controls and accessories

	UEERA0034 Establish heat loads for commercial refrigeration and/or air conditioning applications UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0016 Design commercial refrigeration systems and select components UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0015 Design carbon dioxide refrigerated systems	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERA0042 Evaluate thermodynamic and fluid parameters of refrigeration systems

	UEECD0042 Solve problems in ELV single path circuits UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEERA0038 Establish the thermodynamic parameters of refrigeration and air conditioning systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0001 Analyse the operation of HVAC air and hydronic systems UEERA0006 Apply safety awareness and legal requirements for carbon dioxide refrigerant UEERA0050 Install refrigerant pipe work, flow controls and accessories UEERA0034 Establish heat loads for commercial refrigeration and/or air conditioning applications UEECD0019 Fabricate, assemble and dismantle utilities industry components

	UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0016 Design commercial refrigeration systems and select components UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0025 Design industrial refrigeration systems and select components	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERA0042 Evaluate thermodynamic and fluid parameters of refrigeration systems UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems

	UEERA0038 Establish the thermodynamic parameters of refrigeration and air conditioning systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0001 Analyse the operation of HVAC air and hydronic systems UEERA0050 Install refrigerant pipe work, flow controls and accessories UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0016 Design commercial refrigeration systems and select components UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings

	UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0016 Design commercial refrigeration systems and select components	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERA0042 Evaluate thermodynamic and fluid parameters of refrigeration systems UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEERA0038 Establish the thermodynamic parameters of refrigeration and air conditioning systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls

	UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0001 Analyse the operation of HVAC air and hydronic systems UEERA0050 Install refrigerant pipe work, flow controls and accessories UEERA0034 Establish heat loads for commercial refrigeration and/or air conditioning applications UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems

UEERA0001 Analyse the operation of HVAC air and hydronic systems	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0050 Install refrigerant pipe work, flow controls and accessories UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits

	UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0028 Determine noise and vibration encountered in HVAC/R applications	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c.

	UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0001 Analyse the operation of HVAC air and hydronic systems UEERA0050 Install refrigerant pipe work, flow controls and accessories UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0036 Establish the basic operating conditions of vapour compression systems	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEERA0002 Analyse the psychrometric performance of HVAC/R systems	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEECD0042 Solve problems in ELV single path circuits UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0050 Install refrigerant pipe work, flow controls and accessories UEECD0019 Fabricate, assemble and dismantle utilities industry components

	UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems
UEERA0023 Design hydrocarbon refrigerated systems	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERA0042 Evaluate thermodynamic and fluid parameters of refrigeration systems UEECD0042 Solve problems in ELV single path circuits UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems

	UEERA0038 Establish the thermodynamic parameters of refrigeration and air conditioning systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0001 Analyse the operation of HVAC air and hydronic systems UEERA0050 Install refrigerant pipe work, flow controls and accessories UEERA0034 Establish heat loads for commercial refrigeration and/or air conditioning applications UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0016 Design commercial refrigeration systems and select components UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment

	UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0007 Apply safety awareness and legal requirements for flammable refrigerants UEERA0002 Analyse the psychrometric performance of HVAC/R systems
MEM30033 Use computer-aided design (CAD) to create and display 3D models	MEM30031 Operate computer-aided design (CAD) system to produce basic drawing elements
UEERA0039 Evaluate and report on building services energy management systems	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls

	UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0050 Install refrigerant pipe work, flow controls and accessories UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems
UEERA0060 Produce HVAC/R control system diagrams	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems

	UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0001 Analyse the operation of HVAC air and hydronic systems UEERA0050 Install refrigerant pipe work, flow controls and accessories UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings

	UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0014 Design ammonia refrigerated systems	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERA0042 Evaluate thermodynamic and fluid parameters of refrigeration systems UEECD0042 Solve problems in ELV single path circuits UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEERA0038 Establish the thermodynamic parameters of refrigeration and air conditioning systems UEERA0005 Apply safety awareness and legal requirements for ammonia refrigerant UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

	UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0001 Analyse the operation of HVAC air and hydronic systems UEERA0050 Install refrigerant pipe work, flow controls and accessories UEERA0034 Establish heat loads for commercial refrigeration and/or air conditioning applications UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0016 Design commercial refrigeration systems and select components UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems

	UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0040 Evaluate and report on the indoor air quality of buildings	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c. UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0050 Install refrigerant pipe work, flow controls and accessories UEECD0019 Fabricate, assemble and dismantle utilities industry components

	UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems
UEERA0061 Produce HVAC/R system design drawings	UEERL0001 Attach cords and plugs to electrical equipment for connection to a single phase 230 Volt supply UEERL0005 Locate and rectify faults in low voltage (LV) electrical equipment using set procedures UEERA0036 Establish the basic operating conditions of vapour compression systems UEERL0004 Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring UEERA0003 Analyse the thermodynamic performance of HVAC/R systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEERL0002 Attach cords, cables and plugs to electrical equipment for connection to 1000 V a.c. or 1500 V d.c.

	UEERA0081 Select refrigerant piping, accessories and associated controls UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work UEERA0001 Analyse the operation of HVAC air and hydronic systems UEERA0050 Install refrigerant pipe work, flow controls and accessories UEECD0019 Fabricate, assemble and dismantle utilities industry components UEERA0092 Solve problems in low voltage refrigeration and air conditioning circuits UEERA0094 Verify functionality and compliance of refrigeration and air conditioning installations UEECD0020 Fix and secure electrotechnology equipment UEERA0059 Prepare and connect refrigerant tubing and fittings UEERA0031 Diagnose and rectify faults in air conditioning and refrigeration control systems UEERA0035 Establish the basic operating conditions of air conditioning systems UEERA0002 Analyse the psychrometric performance of HVAC/R systems
UEERA0081 Select refrigerant piping, accessories and associated controls	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEECD0022 Identify building techniques, methods and materials used in energy sector work activities	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

Qualification Mapping Information

Current Code and Title	Previous Code and Title	Comments	Equivalence
UEE51120 Diploma of Engineering Technology - Refrigeration and Air Conditioning	UEE51111 Diploma of Engineering Technology - Refrigeration and Air-conditioning		Equivalent

Links

Companion volumes, including implementation guides, are found in TGA - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6