Australian Government

UEE51020 Diploma of Instrumentation and Control Engineering

Release: 4

UEE51020 Diploma of Instrumentation and Control Engineering

Modification History

Release	Comments
4	Updated superseded elective units.
3	This is the second release of this qualification in the UEE Electrotechnology Training Package. Modifications include: • Updated superseded imported elective units • The following units added to electives (see UEE Release 5.0 Companion Volume Implementation Guide for mapping of deleted UEE units to imported ICT and MEM units): o ICTNWK426 o ICTTEN409 o MEM234010A o ICTPRG549 o ICTPRG534 o ICTWEB447.
2	Updated superseded elective units.
1	This qualification was first released in UEE Electrotechnology Training Package Release 2.0.

Qualification Description

This qualification covers competencies to install, set up, test, develop, select, commission, maintain and diagnose faults/malfunctions of equipment and systems for the measurement, recording, monitoring and control of physical/chemical phenomenon and related process control 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:

1120 core weighting points listed below; plus

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

Choose a total of **480 weighting points** elective units from the list below, of which between **0 and 180 weighting points** can be taken from Group A; and between **0 and 100 weighting points** must be taken from Group B; and between **0 and 120 weighting points** must be taken from Group C; and between **260 and 480 weighting points** must be taken from Group D or all minimum **480 weighting points** can be taken from Group D

Up to **180 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. If weighting points are not listed for an imported unit in any other UEE qualification, default weighting will be 10 points.

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

UEECD0020	Fix and secure electrotechnology equipment*	20
UEECD0024	Implement and monitor energy sector WHS policies and procedures	20
UEECD0027	Participate in development and follow a personal competency development plan	20
UEECD0043	Solve problems in direct current circuits*	80
UEECD0045	Solve problems in multiple path extra-low voltage (ELV) a.c. circuits*	40
UEECD0051	Use drawings, diagrams, schedules, standards, codes and specifications*	40
UEECD0055	Write specifications for industrial electronics and control projects	40
UEEIC0013	Develop, enter and verify discrete control programs for programmable controllers*	60
UEEIC0018	Diagnose and rectify faults in digital controls systems*	60
UEEIC0020	Fault find and repair analogue circuits and components in electronic control systems*	60
UEEIC0021	Find and rectify faults in process final control elements*	40
UEEIC0022	Install instrumentation and control apparatus and associated equipment*	20
UEEIC0023	Install instrumentation and control cabling and tubing*	20
UEEIC0029	Set up and adjust PID control loops*	40
UEEIC0030	Set up and adjust advanced PID process control loops*	40
UEEIC0031	Set up and configure human-machine interface (HMI) and industrial networks*	60

UEEIC0038	Solve problems in density/level measurement components and systems*	40
UEEIC0039	Solve problems in flow measurement components and systems*	40
UEEIC0041	Solve problems in pressure measurement components and systems*	40
UEEIC0043	Solve problems in temperature measurement components and systems*	40
UEEIC0047	Use instrumentation drawings, specifications, standards and equipment manuals*	40
UEEIC0048	Verify compliance and functionality of instrumentation and control installations*	40
UEERE0013	Develop strategies to address environmental and sustainability issues in the energy sector	20
UEERL0004	Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring*	60
Group A: Imported and common elective units		**Weighting Points**
BSBINS501	Implement information and knowledge management systems	50
BSBLDR522	Manage people performance	70
BSBOPS203	Deliver a service to customers	20
BSBSTR501	Establish innovative work environments	50
BSBSTR502	Facilitate continuous improvement	60
BSBTWK502	Manage team effectiveness	60
ICTICT214	Operate application software packages	20
UEECD0011	Comply with scheduled and preventative maintenance program processes	20

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: General elective units		**Weighting Points**
UEECD0050	Use and maintain the integrity of a portable gas detection device*	20
UEECS0033	Use engineering applications software on personal computers	40
UEEEC0060	Repairs basic electronic apparatus faults by replacement of components*	40
UEEEC0069	Troubleshoot digital sub-systems*	80
UEEEC0075	Troubleshoot single phase input d.c power supplies*	40
UEEHA0025	Install explosion-protected equipment and associated apparatus and wiring systems*	60
UEEHA0026	Maintain equipment associated with hazardous areas*	60
UEEIC0004	Calibrate, adjust and test measuring instruments*	40
UEEIC0033	Set up gas analysis measuring and control instruments*	20
UEEIC0035	Set up scientific analysis measuring and control instruments*	20
UEEIC0036	Set up water analysis measuring and control instruments*	20

UEEIC0037	Set up weighting measuring and control instruments*	20
UEEIC0045	Troubleshoot medical equipment control systems*	120
UEEIC0046	Troubleshoot process control systems*	60
Group C: General elective units		**Weighting Points**
ICTNWK426	Install and configure client-server applications and services	60
UEECO0001	Estimate electrotechnology projects	40
UEECS0014	Develop computer network services*	120
UEEHA0004	Enter a classified hazardous area to undertake work related to electrical equipment	40
UEEHA0020	Conduct detailed inspection of electrical installations for hazardous areas*	40
UEEHA0022	Determine the explosion-protection requirements to meet a specified classified hazardous area*	40
UEEHA0025	Install explosion-protected equipment and associated apparatus and wiring systems*	60
UEEHA0026	Maintain equipment associated with hazardous areas*	60
UEEHA0038	Conduct visual and close inspection of electrical installations for hazardous areas*	40
UEEIC0003	Assist in commissioning process and instrumentation control systems*	40
UEEIC0012	Develop structured programs to control external devices*	40
UEEIC0014	Develop, enter and verify programs in supervisory control and data acquisition systems*	60

UEEIC0015	Develop, enter and verify word and analogue control programs for programmable logic controllers*	60
UEEIC0026	Provide solutions to fluid circuit operations*	60
UEEIC0027	Provide solutions to pneumatic-hydraulic system operations*	80
UEEIC0042	Solve problems in single phase electronic power control circuits*	60
UEEIC0044	Troubleshoot measuring and analysis systems*	40
Group D: General elective units		**Weighting Points**
ICTPRG534	Deploy applications to production environments	40
ICTPRG549	Apply intermediate object-oriented language skills	60
ICTTEN409	Commission an electronic system	50
ICTWEB447	Build basic website using development software and ICT tools	20
MEM234010	Design microcontroller applications	40
UEECO0014	Prepare tender submissions for electrotechnology projects*	60
UEECS0004	Commission industrial computer systems*	20
UEECS0012	Design embedded controller control systems	80
UEECS0019	Develop, implement and test object-oriented code*	140
UEECS0025	Modify/redesign industrial computer systems*	20

UEECS0031	Set up, create and implement content for a web server*	120
UEEEL0006	Develop detailed and complex drawings for electrical systems using CAD systems*	60
UEEEL0011	Evaluate performance of low voltage electrical apparatus*	40
UEEIC0001	Analyse complex electronic circuits controlling fluids	80
UEEIC0005	Configure and maintain industrial control system networks*	60
UEEIC0010	Develop and test code for microcontroller devices	60
UEEIC0016	Diagnose and rectify faults in a.c. motor drive systems*	60
UEEIC0017	Diagnose and rectify faults in d.c. motor drive systems*	60
UEEIC0019	Diagnose and rectify faults in servo drive systems*	60

Pre-requisite Requirements

Unit of competency	Prerequisite requirement
UEEIC0029 Set up and adjust PID control loops	UEECD0043 Solve problems in direct current circuits UEEIC0043 Solve problems in temperature measurement components and systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications

	UEEIC0041 Solve problems in pressure measurement components and systems UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals UEEIC0039 Solve problems in flow measurement components and systems UEEIC0038 Solve problems in density/level measurement components and systems
UEECD0019 Fabricate, assemble and dismantle utilities industry components	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEIC0003 Assist in commissioning process and instrumentation control systems	UEEIC0031 Set up and configure human-machine interface (HMI) and industrial networks UEECD0043 Solve problems in direct current circuits UEEIC0043 Solve problems in temperature measurement components and systems UEEIC0048 Verify compliance and functionality of instrumentation and control installations UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEEIC0029 Set up and adjust PID control loops UEEIC0030 Set up and adjust advanced PID process control loops UEECD0046 Solve problems in single path circuits

	UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0041 Solve problems in pressure measurement components and systems UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals UEEIC0039 Solve problems in flow measurement components and systems UEEIC0038 Solve problems in density/level measurement components and systems UEECD0044 Solve problems in multiple path circuits
UEECS0025 Modify/redesign industrial computer systems	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEIC0017 Diagnose and rectify faults in d.c. motor drive systems	UEEEL0025 Test and connect transformers UEEEL0024 Test and connect alternating current (a.c.) rotating machines
UEEIC0022 Install instrumentation and control apparatus and associated equipment	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals

UEEIC0020 Fault find and repair analogue circuits and components in electronic control systems	UEEEL0021 Solve problems in magnetic and electromagnetic devices UEEEL0003 Arrange circuits, control and protection for electrical installations UEEIC0031 Set up and configure human-machine interface (HMI) and industrial networks UEECD0043 Solve problems in direct current circuits UEEIC0043 Solve problems in temperature measurement components and systems UEEIC0048 Verify compliance and functionality of instrumentation and control installations UEEEL0014 Isolate, test and troubleshoot low voltage electrical circuits UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEEIC0029 Set up and adjust PID control loops UEEEL0010 Evaluate and modify low voltage socket outlets circuits UEEIC0030 Set up and adjust advanced PID process control loops UEECD0046 Solve problems in single path circuits UEEEL0025 Test and connect transformers UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0041 Solve problems in pressure measurement components and systems

	UEEEL0020 Solve problems in low voltage a.c. circuits UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals UEEEL0023 Terminate cables, cords and accessories for low voltage circuits UEEEL0024 Test and connect alternating current (a.c.) rotating machines UEEEL0009 Evaluate and modify low voltage lighting circuits, equipment and controls UEECD0045 Solve problems in multiple path extra-low voltage (ELV) a.c. circuits UEEEL0019 Solve problems in direct current (d.c.) machines UEEIC0039 Solve problems in flow measurement components and systems UEEEL0008 Evaluate and modify low voltage heating equipment and controls UEEIC0038 Solve problems in density/level measurement components and systems UEECD0020 Fix and secure electrotechnology equipment UEECD0044 Solve problems in multiple path circuits
UEEEC0069 Troubleshoot digital sub-systems	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEEEC0060 Repairs basic electronic apparatus faults by replacement of components

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEIC0019 Diagnose and rectify faults in servo drive systems	UEEIC0042 Solve problems in single phase electronic power control circuits UEEIC0020 Fault find and repair analogue circuits and components in electronic control systems UEEIC0040 Solve problems in polyphase electronic power control circuits UEEEL0025 Test and connect transformers UEEEL0024 Test and connect alternating current (a.c.) rotating machines
UEECD0043 Solve problems in direct current circuits	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEIC0044 Troubleshoot measuring and analysis systems	UEEIC0048 Verify compliance and functionality of instrumentation and control installations UEEIC0036 Set up water analysis measuring and control instruments UEEIC0033 Set up gas analysis measuring and control instruments UEEIC0035 Set up scientific analysis measuring and control instruments UEEIC0037 Set up weighting measuring and control instruments
UEECD0045 Solve problems in multiple path extra-low voltage (ELV) a.c. circuits	UEECD0043 Solve problems in direct current circuits

	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0046 Solve problems in single path circuits UEECD0044 Solve problems in multiple path circuits
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
UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications
UEECS0031 Set up, create and implement content for a web server	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEIC0016 Diagnose and rectify faults in a.c. motor drive systems	UEEEL0025 Test and connect transformers UEEEL0024 Test and connect alternating current (a.c.) rotating machines
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
UEEIC0012 Develop structured programs to control external devices	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEEIC0048 Verify compliance and functionality of instrumentation and control installations	UEEIC0031 Set up and configure human-machine interface (HMI) and industrial networks UEECD0043 Solve problems in direct current circuits UEEIC0043 Solve problems in temperature measurement components and systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEEIC0029 Set up and adjust PID control loops UEEIC0030 Set up and adjust advanced PID process control loops UEECD0046 Solve problems in single path circuits UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0041 Solve problems in pressure measurement components and systems UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals UEEIC0039 Solve problems in flow measurement components and systems UEEIC0038 Solve problems in density/level measurement components and systems UEECD0044 Solve problems in multiple path circuits

UEEIC0026 Provide solutions to fluid circuit operations	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0019 Fabricate, assemble and dismantle utilities industry components
UEECS0004 Commission industrial computer systems	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEEC0075 Troubleshoot single phase input d.c power supplies	UEEEL0021 Solve problems in magnetic and electromagnetic devices UEEEC0065 Solve problems in basic electronic circuits UEECD0043 Solve problems in direct current circuits UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0046 Solve problems in single path circuits UEEEC0060 Repairs basic electronic apparatus faults by replacement of components UEEEL0020 Solve problems in low voltage a.c. circuits UEECD0019 Fabricate, assemble and dismantle utilities industry components UEEEC0074 Troubleshoot resonance circuits in an electronic apparatus UEECD0045 Solve problems in multiple path extra-low voltage (ELV) a.c. circuits

	UEEEL0019 Solve problems in direct current (d.c.) machines UEECD0044 Solve problems in multiple path circuits
UEEIC0042 Solve problems in single phase electronic power control circuits	UEEEL0021 Solve problems in magnetic and electromagnetic devices UEEEC0065 Solve problems in basic electronic circuits UEEEL0003 Arrange circuits, control and protection for electrical installations UEEIC0031 Set up and configure human-machine interface (HMI) and industrial networks UEECD0043 Solve problems in direct current circuits UEEIC0043 Solve problems in temperature measurement components and systems UEEIC0048 Verify compliance and functionality of instrumentation and control installations UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEEIC0029 Set up and adjust PID control loops UEEEL0010 Evaluate and modify low voltage socket outlets circuits UEEIC0030 Set up and adjust advanced PID process control loops UEECD0046 Solve problems in single path circuits UEEEL0025 Test and connect transformers

	UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0041 Solve problems in pressure measurement components and systems UEEEC0060 Repairs basic electronic apparatus faults by replacement of components UEEEC0067 Troubleshoot basic amplifier circuits UEEEL0020 Solve problems in low voltage a.c. circuits UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals UEEEL0023 Terminate cables, cords and accessories for low voltage circuits UEEEC0074 Troubleshoot resonance circuits in an electronic apparatus UEEEL0024 Test and connect alternating current (a.c.) rotating machines UEEEL0009 Evaluate and modify low voltage lighting circuits, equipment and controls UEECD0045 Solve problems in multiple path extra-low voltage (ELV) a.c. circuits UEEEL0019 Solve problems in direct current (d.c.) machines UEEIC0039 Solve problems in flow measurement components and systems UEEEL0008 Evaluate and modify low voltage heating equipment and controls UEEIC0038 Solve problems in density/level measurement components and systems

	UEECD0020 Fix and secure electrotechnology equipment UEECD0044 Solve problems in multiple path circuits
UEEIC0005 Configure and maintain industrial control system networks	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEIC0038 Solve problems in density/level measurement components and systems	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0041 Solve problems in pressure measurement components and systems UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals
UEEIC0027 Provide solutions to pneumatic-hydraulic system operations	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0019 Fabricate, assemble and dismantle utilities industry components UEEIC0026 Provide solutions to fluid circuit operations
UEEIC0013 Develop, enter and verify discrete control programs for programmable controllers	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEEIC0033 Set up gas analysis measuring and control instruments	UEECD0043 Solve problems in direct current circuits UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0046 Solve problems in single path circuits UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals UEECD0044 Solve problems in multiple path circuits
UEEIC0014 Develop, enter and verify programs in supervisory control and data acquisition systems	UEEIC0013 Develop, enter and verify discrete control programs for programmable controllers UEEIC0015 Develop, enter and verify word and analogue control programs for programmable logic controllers UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEECD0050 Use and maintain the integrity of a portable gas detection device	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEIC0021 Find and rectify faults in process final control elements	UEEIC0022 Install instrumentation and control apparatus and associated equipment UEEIC0023 Install instrumentation and control cabling and tubing

	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals
UEECO0014 Prepare tender submissions for electrotechnology projects	UEECO0001 Estimate electrotechnology projects
UEEHA0022 Determine the explosion-protection requirements to meet a specified classified hazardous area	UEEHA0004 Enter a classified hazardous area to undertake work related to electrical equipment
UEECS0019 Develop, implement and test object-oriented code	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEIC0037 Set up weighting measuring and control instruments	UEECD0043 Solve problems in direct current circuits UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0046 Solve problems in single path circuits UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals UEECD0044 Solve problems in multiple path circuits

UEEEL0011 Evaluate performance of low voltage electrical apparatus	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEIC0031 Set up and configure human-machine interface (HMI) and industrial networks	UEECD0043 Solve problems in direct current circuits UEEIC0043 Solve problems in temperature measurement components and systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEEIC0029 Set up and adjust PID control loops UEEIC0030 Set up and adjust advanced PID process control loops UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0041 Solve problems in pressure measurement components and systems UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals UEEIC0039 Solve problems in flow measurement components and systems UEEIC0038 Solve problems in density/level measurement components and systems
UEECS0014 Develop computer network services	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

UEEIC0015 Develop, enter and verify word and analogue control programs for programmable logic controllers	UEEIC0013 Develop, enter and verify discrete control programs for programmable controllers UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEECD0020 Fix and secure electrotechnology equipment	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEIC0004 Calibrate, adjust and test measuring instruments	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals
UEEIC0043 Solve problems in temperature measurement components and systems	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals
UEEHA0020 Conduct detailed inspection of electrical installations for hazardous areas	UEEHA0022 Determine the explosion-protection requirements to meet a specified classified hazardous area UEEHA0038 Conduct visual and close inspection of electrical installations for hazardous areas

	UEEHA0004 Enter a classified hazardous area to undertake work related to electrical equipment
UEEIC0035 Set up scientific analysis measuring and control instruments	UEECD0043 Solve problems in direct current circuits UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0046 Solve problems in single path circuits UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals UEECD0044 Solve problems in multiple path circuits
UEEIC0041 Solve problems in pressure measurement components and systems	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals
UEEIC0030 Set up and adjust advanced PID process control loops	UEECD0043 Solve problems in direct current circuits UEEIC0043 Solve problems in temperature measurement components and systems

	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEEIC0029 Set up and adjust PID control loops UEECD0046 Solve problems in single path circuits UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0041 Solve problems in pressure measurement components and systems UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals UEEIC0039 Solve problems in flow measurement components and systems UEEIC0038 Solve problems in density/level measurement components and systems UEECD0044 Solve problems in multiple path circuits
UEEHA0025 Install explosion-protected equipment and associated apparatus and wiring systems	UEEHA0022 Determine the explosion-protection requirements to meet a specified classified hazardous area UEEHA0004 Enter a classified hazardous area to undertake work related to electrical equipment
UEEIC0018 Diagnose and rectify faults in digital controls systems	UEEEL0021 Solve problems in magnetic and electromagnetic devices UEEEL0003 Arrange circuits, control and protection for electrical installations

	UEEIC0031 Set up and configure human-machine interface (HMI) and industrial networks UEECD0043 Solve problems in direct current circuits UEEIC0043 Solve problems in temperature measurement components and systems UEEIC0048 Verify compliance and functionality of instrumentation and control installations UEEEL0014 Isolate, test and troubleshoot low voltage electrical circuits UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEEIC0029 Set up and adjust PID control loops UEEEL0010 Evaluate and modify low voltage socket outlets circuits UEEIC0030 Set up and adjust advanced PID process control loops UEECD0046 Solve problems in single path circuits UEEEL0025 Test and connect transformers UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0041 Solve problems in pressure measurement components and systems UEEEL0020 Solve problems in low voltage a.c. circuits

	UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals UEEEL0023 Terminate cables, cords and accessories for low voltage circuits UEEEL0024 Test and connect alternating current (a.c.) rotating machines UEEEL0009 Evaluate and modify low voltage lighting circuits, equipment and controls UEECD0045 Solve problems in multiple path extra-low voltage (ELV) a.c. circuits UEEEL0019 Solve problems in direct current (d.c.) machines UEEIC0039 Solve problems in flow measurement components and systems UEEEL0008 Evaluate and modify low voltage heating equipment and controls UEEIC0038 Solve problems in density/level measurement components and systems UEECD0020 Fix and secure electrotechnology equipment UEECD0044 Solve problems in multiple path circuits
UEEEC0060 Repairs basic electronic apparatus faults by replacement of components	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0019 Fabricate, assemble and dismantle utilities industry components
UEEHA0026 Maintain equipment associated with hazardous areas	UEEHA0022 Determine the explosion-protection requirements to meet a specified classified hazardous area

	UEEHA0004 Enter a classified hazardous area to undertake work related to electrical equipment
UEEIC0039 Solve problems in flow measurement components and systems	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0041 Solve problems in pressure measurement components and systems UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals
UEEEL0006 Develop detailed and complex drawings for electrical systems using CAD systems	UEECD0031 Prepare engineering drawings using manual drafting and CAD for electrotechnology applications UEECD0043 Solve problems in direct current circuits UEEEL0007 Develop detailed electrical drawings UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0046 Solve problems in single path circuits UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEECD0032 Produce detailed electrotechnology/utilities drawings using CAD equipment and software UEECD0019 Fabricate, assemble and dismantle utilities industry components

	UEECD0030 Prepare electrotechnology/utilities drawings using manual drafting and CAD equipment and software UEECS0033 Use engineering applications software on personal computers UEECD0044 Solve problems in multiple path circuits
UEEIC0023 Install instrumentation and control cabling and tubing	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals
UEEHA0038 Conduct visual and close inspection of electrical installations for hazardous areas	UEEHA0004 Enter a classified hazardous area to undertake work related to electrical equipment
UEEIC0045 Troubleshoot medical equipment control systems	UEECD0007 Apply work health and safety regulations, codes and practices in the workplace
UEEIC0046 Troubleshoot process control systems	UEECD0043 Solve problems in direct current circuits UEEIC0043 Solve problems in temperature measurement components and systems UEECD0007 Apply work health and safety regulations, codes and practices in the workplace

	UEEIC0029 Set up and adjust PID control loops UEEIC0030 Set up and adjust advanced PID process control loops UEECD0046 Solve problems in single path circuits UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0041 Solve problems in pressure measurement components and systems UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals UEEIC0039 Solve problems in flow measurement components and systems UEEIC0038 Solve problems in density/level measurement components and systems UEECD0044 Solve problems in multiple path circuits
UEEIC0036 Set up water analysis measuring and control instruments	UEECD0043 Solve problems in direct current circuits UEECD0007 Apply work health and safety regulations, codes and practices in the workplace UEECD0046 Solve problems in single path circuits UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals

	UEECD0044 Solve problems in multiple path circuits

Qualification Mapping Information

Current Code and Title	Previous Code and Title	Comments	Equivalence
UEE51020 Diploma of Instrumentation and Control Engineering	UEE51011 Diploma of Instrumentation and Control Engineering		Equivalent

Links

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