



**Australian Government**

# **UEE31225 Certificate III in Instrumentation and Control**

# UEE31225 Certificate III in Instrumentation and Control

## Modification History

| Release | Comments   |
|---------|--|
| 1       | This qualification was first released in UEE Electrotechnology Training Package Release 8.0. |

## Qualification Description

This qualification covers competencies to select, install, set up, test, fault find, repair and maintain systems and devices for measurement and recording of physical/chemical phenomenon and related process control.

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 1060 weighting points comprising:

**920 core weighting points** listed below; **plus**

**140 general elective weighting points** from the general elective units listed below.

Choose a total of 140 **weighting points** elective units from the list below, of which between 0 and 60 **weighting points** can be taken from Group A; and between 80 and 140 **weighting points** must be taken from Group B; or all minimum 140 **weighting points** can be taken from Group B

**Up to 60 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               |
| 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               |
| 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               |
| UEECO0028 Engage in instrumentation, control, machine repair or switchgear work and competency development activities | 60               |
| UEEIC0013 Develop, enter and verify discrete control programs for programmable controllers*                           | 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               |

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| 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                      |
| UEERE0001  | Apply environmentally and sustainable procedures in the energy sector                          | 20                      |
| UEERL0004  | Disconnect - reconnect electrical equipment connected to low voltage (LV) installation wiring* | 60                      |
| <b>Group A: Imported and common elective units</b> |  | <b>Weighting Points</b> |
| BSBOPS203  | Deliver a service to customers   | 20                      |
| CPCWHS1001   | Prepare to work safely in the construction industry  | 10                      |
| HLTAID009  | Provide cardiopulmonary resuscitation  | 10                      |
| HLTAID011  | Provide First Aid  | 10                      |
| 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                      |

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| 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                      |
| <b>Group B: General elective units</b> |  | <b>Weighting Points</b> |
| UEECD0050                              | Use and maintain the integrity of a portable gas detection device*                             |                         |
| UEECS0033                              | Use engineering applications software on personal computers                                    |                         |
| UEEEC0060                              | Repairs basic electronic apparatus faults by replacement of components*                        |                         |
| UEEEC0069                              | Troubleshoot digital sub-systems*  |                         |
| UEEEC0075                              | Troubleshoot single phase input d.c power supplies*  |                         |
| UEEIC0004                              | Calibrate, adjust and test measuring instruments*  |                         |
| UEEIC0033                              | Set up gas analysis measuring and control instruments*   |                         |
| UEEIC0035                              | Set up scientific analysis measuring and control instruments*                                  |                         |
| UEEIC0036                              | Set up water analysis measuring and control instruments*                                       |                         |
| UEEIC0037                              | Set up weighting measuring and control instruments*  |                         |
| UEEIC0045                              | Troubleshoot medical equipment control systems*  |                         |
| UEEIC0046                              | Troubleshoot process control systems*  |                         |
| UEEHA0004                              | Enter a classified hazardous area to undertake work related to electrical equipment            |                         |
| UEEHA0022                              | Determine the explosion-protection requirements to meet a specified classified hazardous area* |                         |
| UEEHA0025                              | Install explosion-protected equipment and associated apparatus and wiring systems*             |                         |

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| UEEHA002<br>6 | Maintain equipment associated with hazardous areas* | 60 |
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## Pre-requisite Requirements

| Unit of competency   | Prerequisite requirement   |
|--|--|
| UEEEC0075 Troubleshoot single phase input d.c power supplies | <p>UEEEL0021 Solve problems in magnetic and electromagnetic devices</p> <p>UEEEC0065 Solve problems in basic electronic circuits</p> <p>UEECD0043 Solve problems in direct current circuits</p> <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0046 Solve problems in single path circuits</p> <p>UEEEC0060 Repairs basic electronic apparatus faults by replacement of components</p> <p>UEEEL0020 Solve problems in low voltage a.c. circuits</p> <p>UEECD0019 Fabricate, assemble and dismantle utilities industry components</p> <p>UEEEC0074 Troubleshoot resonance circuits in an electronic apparatus</p> <p>UEECD0045 Solve problems in multiple path extra-low voltage (ELV) a.c. circuits</p> <p>UEEEL0019 Solve problems in direct current (d.c.) machines</p> <p>UEECD0044 Solve problems in multiple path circuits</p> |

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

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

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

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|   | UEECD0044 Solve problems in multiple path circuits   |
| UEECD0045 Solve problems in multiple path extra-low voltage (ELV) a.c. circuits                         | <p>UEECD0043 Solve problems in direct current circuits</p> <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0046 Solve problems in single path circuits</p> <p>UEECD0044 Solve problems in multiple path circuits</p>           |
| 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   |
| UEEHA0025 Install explosion-protected equipment and associated apparatus and wiring systems             | <p>UEEHA0022 Determine the explosion-protection requirements to meet a specified classified hazardous area</p> <p>UEEHA0004 Enter a classified hazardous area to undertake work related to electrical equipment</p>  |
| UEEIC0023 Install instrumentation and control cabling and tubing  | <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications</p> <p>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals</p> |

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| <p>UEEIC0046 Troubleshoot process control systems</p>                                   | <p>UEECD0043 Solve problems in direct current circuits</p> <p>UEEIC0043 Solve problems in temperature measurement components and systems</p> <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEEIC0029 Set up and adjust PID control loops</p> <p>UEEIC0030 Set up and adjust advanced PID process control loops</p> <p>UEECD0046 Solve problems in single path circuits</p> <p>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications</p> <p>UEEIC0041 Solve problems in pressure measurement components and systems</p> <p>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals</p> <p>UEEIC0039 Solve problems in flow measurement components and systems</p> <p>UEEIC0038 Solve problems in density/level measurement components and systems</p> <p>UEECD0044 Solve problems in multiple path circuits</p> |
| <p>UEEEC0060 Repairs basic electronic apparatus faults by replacement of components</p> | <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0019 Fabricate, assemble and dismantle utilities industry components</p>   |

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| UEEIC0013 Develop, enter and verify discrete control programs for programmable controllers | UEECD0007 Apply work health and safety regulations, codes and practices in the workplace   |
| UEEIC0039 Solve problems in flow measurement components and systems                        | UEECD0007 Apply work health and safety regulations, codes and practices in the workplace<br><br>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications<br><br>UEEIC0041 Solve problems in pressure measurement components and systems<br><br>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<br><br>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications<br><br>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals  |
| UEEIC0033 Set up gas analysis measuring and control instruments                            | UEECD0043 Solve problems in direct current circuits<br><br>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace<br><br>UEECD0046 Solve problems in single path circuits  |

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|  | <p>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications</p> <p>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals</p> <p>UEECD0044 Solve problems in multiple path circuits</p>   |
| UEEHA0026 Maintain equipment associated with hazardous areas | <p>UEEHA0022 Determine the explosion-protection requirements to meet a specified classified hazardous area</p> <p>UEEHA0004 Enter a classified hazardous area to undertake work related to electrical equipment</p>  |
| UEEIC0045 Troubleshoot medical equipment control systems     | 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   |
| UEEIC0029 Set up and adjust PID control loops                | <p>UEECD0043 Solve problems in direct current circuits</p> <p>UEEIC0043 Solve problems in temperature measurement components and systems</p> <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications</p> |

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|   | <p>UEEIC0041 Solve problems in pressure measurement components and systems</p> <p>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals</p> <p>UEEIC0039 Solve problems in flow measurement components and systems</p> <p>UEEIC0038 Solve problems in density/level measurement components and systems</p> |
| UEEIC0004 Calibrate, adjust and test measuring instruments  | <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications</p> <p>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals</p>   |
| UEECD0019 Fabricate, assemble and dismantle utilities industry components                               | UEECD0007 Apply work health and safety regulations, codes and practices in the workplace   |
| 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  |
| 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   |
| UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications                        | UEECD0007 Apply work health and safety regulations, codes and practices in the workplace   |

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|  | <p>UEEEC0069 Troubleshoot digital subsystems</p> <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEEEC0060 Repairs basic electronic apparatus faults by replacement of components</p>   |
| <p>UEEIC0021 Find and rectify faults in process final control elements</p>                               | <p>UEEIC0022 Install instrumentation and control apparatus and associated equipment</p> <p>UEEIC0023 Install instrumentation and control cabling and tubing</p> <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications</p> <p>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals</p> |
| <p>UEECD0016 Document and apply measures to control WHS risks associated with electrotechnology work</p> | <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p>  |
| <p>UEEIC0041 Solve problems in pressure measurement components and systems</p>                           | <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications</p> <p>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals</p>   |

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| <p>UEEIC0037 Set up weighting measuring and control instruments</p>                            | <p>UEECD0043 Solve problems in direct current circuits</p> <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0046 Solve problems in single path circuits</p> <p>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications</p> <p>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals</p> |
| <p>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals</p> | <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications</p>   |
| <p>UEEIC0035 Set up scientific analysis measuring and control instruments</p>                  | <p>UEECD0043 Solve problems in direct current circuits</p> <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0046 Solve problems in single path circuits</p> <p>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications</p> <p>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals</p> |

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|  | UEECD0044 Solve problems in multiple path circuits  |
| UEEIC0022 Install instrumentation and control apparatus and associated equipment | <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications</p> <p>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals</p>  |
| UEEIC0038 Solve problems in density/level measurement components and systems     | <p>UEECD0007 Apply work health and safety regulations, codes and practices in the workplace</p> <p>UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications</p> <p>UEEIC0041 Solve problems in pressure measurement components and systems</p> <p>UEEIC0047 Use instrumentation drawings, specifications, standards and equipment manuals</p> |

## Qualification Mapping Information

| Current Code and Title   | Previous Code and Title  | Comments   | Equivalence |
|--|--|--|-------------|
| UEE31225<br>Certificate III in<br>Instrumentation and<br>Control | UEE31220<br>Certificate III in<br>Instrumentation and<br>Control | This qualification replaces and is equivalent to UEE31220 Certificate III in | Equivalent  |

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|  |  | Instrumentation and Control |  |
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## Links

Companion volumes, including implementation guides, are found in TGA -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>