



Australian Government

UEECD0005 Apply physics to solving electrotechnology engineering problems

Release: 1

UEECD0005 Apply physics to solving electrotechnology engineering problems

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to apply physics to solving electrotechnology engineering problems.

It includes identifying and solving physics-related problems and documenting justifications. It also includes applying knowledge of measurement techniques.

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

Pre-requisite Unit

Not applicable

Competency Field

Cross Discipline

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Identify electrotechnology-related problems

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) processes and workplace procedures for a given work area are identified, obtained and applied
- 1.2** WHS/OHS risk control work preparation measures and workplace procedures are followed

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| | 1.3 | Scope of electrotechnology problem is identified from documentation and/or work supervisor |
| | 1.4 | Problems are stated in writing and/or diagrammatic form to ensure appropriate methods are used to resolve them |
| | 1.5 | Equipment and testing devices required for problem solving are obtained and checked for correct operation and safety |
| 2 Apply physics to developing solutions | 2.1 | WHS/OHS risk control work measures and workplace procedures are followed |
| | 2.2 | Tests and measurements are undertaken in accordance with WHS/OHS requirements and workplace procedures |
| | 2.3 | Tests, measurements and results are used to develop resolutions in static and dynamic problems |
| | 2.4 | Theoretical and measured values are applied to develop solutions to static and dynamics problems |
| | 2.5 | Results are applied to develop solutions to problems |
| | 2.6 | Unplanned situations are dealt with in accordance with WHS/OHS requirements and approval of relevant person/s |
| 3 Report solution | 3.1 | Proposed solutions to electrotechnology problems are documented with justification for the solutions |
| | 3.2 | Adverse effects and outcomes of developed solution are reported |
| | 3.3 | Solution report is forwarded to relevant person/s in accordance with workplace procedures |

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package

Companion Volume Implementation Guide.

Unit Mapping Information

This unit replaces and is equivalent to UEENEEE082A Apply physics to solving electrotechnology engineering problems.

Links

Companion Volume implementation guides are found in VETNet - -

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

Assessment Requirements for UEECD0005 Apply physics to solving electrotechnology engineering problems

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two separate occasions and include:

- applying measured values to developing solutions to static and dynamic problems
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including
 - using risk control measures
- applying the laws of physics to developing solutions to electrotechnology problems
- dealing with unplanned events in accordance with problem-solving techniques and workplace procedures
- developing resolutions in static and dynamics problems
- identifying the scope of electrotechnology problems
- obtaining and using equipment and testing devices for problem solving
- reporting adverse effects in the developed solutions
- reporting developed solutions and justification.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- problem-solving techniques
- relevant adverse effects and outcomes of solution
- relevant equipment and testing devices
- relevant industry standards
- relevant manufacturer specifications and operating instructions
- relevant measurement values
- relevant physics theorems
- relevant job safety assessments or risk mitigation processes
- relevant tests and measurements
- relevant WHS/OHS legislated requirements
- relevant workplace documentation, including:

- diagrammatic form
- solution report
- relevant workplace instructions, policies and procedures.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated suitable workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, tools, facilities and equipment currently used in industry
- resources that reflect current industry practices in relation to physics and how they apply to solving electrotechnology-related problems
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

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