



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **UEENEEE050B Undertake computations in an electrotechnology environment**

**Release: 1**

## **UEENEEE050B Undertake computations in an electrotechnology environment**

### **Modification History**

Not Applicable

### **Unit Descriptor**

#### **Unit Descriptor**

**1)**

##### **1.1) Descriptor**

This unit covers computational and mathematical procedures to solve problems or to enhance given data. It encompasses working safely, applying knowledge of undertaking computations in electrotechnology environment.

### **Application of the Unit**

#### **Application of the Unit    4)**

This unit shall apply to persons entering work in electrotechnology and may be used in school-based vocational programs.

## Licensing/Regulatory Information

### 1.2) License to practice

The skills and knowledge described in this unit do not require a license to practice in the workplace. However practice in this unit is subject to regulations directly related to occupational health and safety and contracts of training such as new apprenticeships.

## Pre-Requisites

**Prerequisite Unit(s)**      2)

### 2.1) Competencies

There are no prerequisite competencies for this unit.

## Employability Skills Information

**Employability Skills**      3)

This unit contains Employability Skills

The required outcomes described in this unit of competency contain applicable facets of Employability Skills. The Employability Skills Summary of the qualification in which this unit of competency is packaged will assist in identifying Employability Skill requirements.

## Elements and Performance Criteria Pre-Content

6) Elements describe the essential outcomes of a unit of competency

Performance criteria describe the required performance needed to demonstrate achievement of the Element. Assessment of performance is to be consistent with the evidence guide.

## Elements and Performance Criteria

| ELEMENT                              | PERFORMANCE CRITERIA                                                                                                                                                             |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Prepare to undertake computations. | 1.1 Computational activities are planned and prepared to ensure OHS policies and procedures are followed, with the work appropriately sequenced in accordance with requirements. |
|                                      | 1.2 Data for computations are obtained and verified in accordance with established procedures and to comply with requirements.                                                   |
|                                      | 1.3 Location in which activities are undertaken or data gathered is determined from job requirements.                                                                            |
|                                      | 1.4 Materials/devices needed to carry out the computations are obtained in accordance with established procedures.                                                               |
| 2 Undertake computations.            | 2.1 OHS policies and procedures for undertaking monitoring activities are followed.                                                                                              |
|                                      | 2.2 Computations are undertaken in accordance with requirements.                                                                                                                 |
|                                      | 2.3 Unplanned events or conditions are responded to in accordance with established procedure.                                                                                    |
|                                      | 2.4 Ongoing checks of the quality/accuracy of the work are undertaken in accordance with established procedures.                                                                 |
| 3 Complete monitoring activities.    | 3.1 Computations are verified and checked against estimates.                                                                                                                     |
|                                      | 3.2 Documentation/reports/computations are completed to ensure all requirements are met.                                                                                         |
|                                      | 3.3 Work completion is notified in accordance with established procedures.                                                                                                       |

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

7) This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and undertaking computations in an electrotechnology environment.

All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

The extent of the essential knowledge and associated skills (EKAS) required is given in Volume 2 - Part 2.2 EKAS. It forms an integral part of this unit.

2.8.15.1 Applied mathematical concepts

2.8.10.4 Engineering mathematics with calculus

2.18.1 Occupational Health and Safety principles

## Evidence Guide

### EVIDENCE GUIDE

9) The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of the unit and performed in accordance with the Assessment Guidelines of this Training Package.

#### Overview of Assessment

##### 9.1)

Longitudinal competency development approaches to assessment, such as Profiling, require data to be reliably gathered in a form that can be consistently interpreted over time. This approach is best utilised in Apprenticeship programs and reduces assessment intervention. It is the industry-preferred model for apprenticeships. However, where summative (or final) assessment is used it is to include the application of the competency in the normal work environment or, at a minimum, the application of the competency in a realistically simulated work environment. It is recognised that, in some circumstances, assessment in part or full can occur outside the workplace. However, it must be in accordance with industry and regulatory policy.

Methods chosen for a particular assessment will be influenced by various factors. These include the extent of the assessment, the most effective locations for the assessment activities to take place, access to physical resources, additional safety measures that may be required and the critical nature of the competencies being assessed.

The critical safety nature of working with electricity, electrical equipment, gas or any other hazardous substance/material carries risk in deeming a person competent. Sources of evidence need to be 'rich' in nature to minimise error in judgment.

Activities associated with normal everyday work have a bearing on the decision as to how much and how detailed the data gathered will contribute to its 'richness'. Some skills are more critical to safety and operational requirements while the same skills may be more or less frequently practised. These points are raised for the assessors to consider when choosing an assessment method and developing assessment instruments. Sample assessment instruments are included for Assessors in

## EVIDENCE GUIDE

the Assessment Guidelines of this Training Package.

### **Critical aspects of evidence required to demonstrate competency in this unit**

#### **9.2)**

Before the critical aspects of evidence are considered all prerequisites must be met.

Evidence for competence in this unit shall be considered holistically. Each element and associated performance criteria shall be demonstrated on at least two occasions in accordance with the 'Assessment Guidelines - UEE07'. Evidence shall also comprise:

- A representative body of work performance demonstrated within the timeframes typically expected of the discipline, work function and industrial environment. In particular this shall incorporate evidence that shows a candidate is able to:
  - Implement Occupational Health and Safety workplace procedures and practices, including the use of risk control measures as specified in the performance criteria and range statement
  - Apply sustainable energy principles and practices as specified in the performance criteria and range statement
  - Demonstrate an understanding of the essential knowledge and associated skills as described in this unit. It may be required by some jurisdictions that RTOs provide a percentile graded result for the purpose of regulatory or licensing requirements.
  - Demonstrate an appropriate level of skills enabling employment
  - Conduct work observing the relevant Anti Discrimination legislation, regulations, policies and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - A Understanding transporting instructions.
  - B Checking transport details against job instruction.
  - C Obtaining relevant plant and equipment.
  - D Transporting plant and equipment in accordance

## EVIDENCE GUIDE

with requirements.

- E Undertaking computations in accordance with requirements.
- F Notifying work completing.
- G Dealing with unplanned events by drawing on essential knowledge and skills to provide appropriate solutions incorporated in a holistic assessment with the above listed items.

**Note:**

Successful completion of relevant vendor training may be used to contribute to evidence on which competency is deemed. In these cases the alignment of outcomes of vendor training with performance criteria and critical aspects of evidence shall be clearly identified.

### **Context of and specific resources for assessment**

#### **9.3)**

This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace. This should include:

- OHS policy and work procedures and instructions.
- Suitable work environment, facilities, equipment and materials to undertake actual work as prescribed in this unit.

These should be used in the formal learning/assessment environment.

**Note:**

Where simulation is considered a suitable strategy for assessment, conditions for assessment must be authentic and as far as possible reproduce and replicate the workplace and be consistent with the approved industry simulation policy.

The resources used for assessment should reflect current industry practices in relation to undertaking computations in an electrotechnology environment.

## EVIDENCE GUIDE

### Method of assessment

#### 9.4)

This unit shall be assessed by methods given in Volume 1, Part 3 'Assessment Guidelines'.

#### Note:

Competent performance with inherent safe working practices is expected in the Industry to which this unit applies. This requires that the specified essential knowledge and associated skills are assessed in a structured environment which is primarily intended for learning/assessment and incorporates all necessary equipment and facilities for learners to develop and demonstrate the essential knowledge and skills described in this unit.

### Concurrent assessment and relationship with other units

#### 9.5)

There are no concurrent assessment recommendations for this unit.

## Range Statement

### RANGE STATEMENT

8) This relates to the unit as a whole providing the range of contexts and conditions to which the performance criteria apply. It allows for different work environments and situations that will affect performance.

This unit shall be demonstrated in relation to undertaking computations in an electrotechnology environment in any of the following disciplines:

- Appliances
- Business equipment
- Computers
- Data Communications
- Electrical
- Electrical Machines
- Electronics
- Fire protection
- Instrumentation
- Refrigeration and Air Conditioning
- Renewable / sustainable energy
- Security technology

Generic terms used throughout this Vocational Standard shall be regarded as part of the Range Statement in which competency is demonstrated. The definition of these and other terms that apply are given in Volume 2, Part 2.1.

## Unit Sector(s)

Not Applicable

## Competency Field

### 2.2) Literacy and numeracy skills

Participants are best equipped to achieve competency in this unit if they have reading, writing and numeracy skills indicated by the following scales. Description of each scale is given in Volume 2, Part 3 'Literacy and Numeracy'

|         |   |         |   |          |   |
|---------|---|---------|---|----------|---|
| Reading | 3 | Writing | 3 | Numeracy | 3 |
|---------|---|---------|---|----------|---|

## Custom Content Section

|                  |                   |
|------------------|-------------------|
| Competency Field | 5)                |
|                  | Electrotechnology |