

Training Package	Electrotechnology (UEE07)		HSC Requirements and Advice
Unit title	Solve basic problems in electronic and digital equipment		HSC Indicative Hours
Unit code	UEENEEE023B	Competency field	40
		Electrotechnology	

Unit descriptor	This unit covers determining correct operation of basic electronic and digital equipment and providing solutions as they apply to various electronic and computer work functions. It encompasses working safely, problem solving procedures, including the use of basic measuring devices, providing solutions derived from equipment behaviour and measurements to predictable problems.
Application of the unit	This unit is intended for competency development entry-level employment based programs incorporated in approved contracts of training.
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 Skills requirements.
Prerequisite unit(s)	<p>Competencies There are no prerequisite competencies for this unit.</p> <p>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 <i>Appendix 1</i> of this Syllabus.</p> <p>Reading 3 Writing 3 Numeracy 3</p>
Licence to practise	The skills and knowledge described in this unit do not require a licence to practise in the workplace. However, practice in this unit is subject to regulations directly related to occupational health and safety and where applicable contracts of training such as apprenticeships.

Required Skills and Knowledge

This describes the essential skills and knowledge and their level **required** for this unit. All knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

Evidence shall show that knowledge has been acquired of safe working practices and solving problems in electronic and digital equipment.

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 *Appendix 2* of this Syllabus. It forms an integral part of this unit.

2.9.1.5 Basic electronic principles

2.9.1.6 Basic digital principles

2.18.1 Occupational Health and Safety principles.

Evidence Guide

This provides essential advice for assessment of the unit. It must be read in conjunction with the Performance Criteria and the Range Statement of the unit and the Training Package Assessment Guidelines. All Knowledge and skills detailed in this unit should be contextualised to current industry practices and technologies.

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	Critical aspects of evidence required to demonstrate competency in this unit
<p>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.</p> <p>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.</p> <p>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.</p> <p>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 the Assessment Guidelines of this Training Package.</p>	<p>Before the critical aspects of evidence are considered all prerequisites must be met.</p> <p>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:</p> <ul style="list-style-type: none"> • a representative body of performance criteria 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: <ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - solving problems in electronic and digital equipment as described in the Range Statement and including: <ul style="list-style-type: none"> ▪ using methodical problem solving methods ▪ taking and recording measurements correctly and accurately using relevant measuring equipment ▪ deducing equipment behaviour correctly and accurately ▪ providing written justification for the solutions to problems ▪ 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.

Evidence Guide cont/d

Context of and specific resources for assessment	Method of assessment	Concurrent assessment and relationship with other units
<p>This unit should be assessed as it relates to normal work practice using procedures, information and resources typical of a workplace.</p> <p>This should include:</p> <ul style="list-style-type: none"> • OHS policy and work procedures and instructions • suitable work environment, facilities, equipment and materials to undertake actual work as prescribed in this unit. <p>These should be used in the formal learning/assessment environment.</p> <p>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.</p> <p>The resources used for assessment should reflect current industry practices in relation to solving basic problems in electronic and digital equipment.</p>	<p>This unit shall be assessed by methods given in <i>Appendix 3</i> of this Syllabus.</p> <p>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.</p>	<p>There are no concurrent assessment recommendations for this unit.</p> <p>The critical aspects of occupational health and safety covered in UEENEEE001B and other discipline specific occupational health and safety unit(s) shall be reassessed in relation to this unit.</p>

Element	Performance Criteria	Range Statement
1 Prepare to work electronic and digital equipment	1.1 OHS procedures for a given work area are identified, obtained and understood.	<p>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.</p> <p>This unit shall be demonstrated in relation to:</p> <ul style="list-style-type: none"> • electronic and digital equipment problems as they apply to setting-up, fault finding, maintenance or development work functions in any of the following disciplines: <ul style="list-style-type: none"> - computers - data communications - electronics, and • in relation to the following types of electronic and digital equipment problems: <ul style="list-style-type: none"> - determining the operating parameters of existing operating equipment - alternating existing equipment to comply with specified operating parameters. <p>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 <i>Appendix 4</i> of this Syllabus.</p>
	1.2 OHS risk control work preparation measures and procedures are followed.	
	1.3 The nature of the problem is obtained from documentation or from work supervisor to establish the scope of work to be undertaken.	
	1.4 Advice is sought from the work supervisor to ensure the work is coordinated effectively with others.	
	1.5 Sources of materials that may be required for the work are identified and accessed in accordance with established procedures.	
	1.6 Tools, equipment and testing devices needed to carry out the work are obtained and checked for correct operation and safety.	
2 Solve electronic and digital equipment problems	2.1 OHS risk control work measures and procedures are followed.	
	2.2 The need to test or measure live is determined in strict accordance with OHS requirements and when necessary conducted within established safety procedures.	
	2.3 Circuits are checked as being isolated where necessary in strict accordance OHS requirements and procedures.	
	2.4 Established methods are used to solve electronic and digital equipment problems from observation or equipment behaviour and measured values.	
	2.5 Unexpected situations are dealt with safely and with the approval of an authorised person.	

Element	Performance Criteria	Range Statement
	2.6 Problems are solved without damage to apparatus, circuits, the surrounding environment or services and using sustainable energy practices.	
3 Complete work and document problem solving activities	3.1 OHS work completion risk control measures and procedures are followed.	
	3.2 Work site is cleaned and made safe in accordance with established procedures.	
	3.3 Justification for solutions used to solve circuit problems is documented.	
	3.4 Work completion is documented and appropriate person(s) notified in accordance with established procedures.	