Australian Government

Department of Education, Employment and Workplace Relations

UEENEED012B Support computer hardware and software

Release: 1

INDUSTRY SKILLS COUNCILS

Creating Australia's Future

UEENEED012B Support computer hardware and software

Modification History

Not Applicable

Unit Descriptor

Unit Descriptor **1**)

1.1) **Descriptor**

This unit covers upgrading and maintaining computers, computer devices and peripherals and installing, maintaining and configuring software. It encompasses safe working practices, installing and testing the upgrading components, locating faults in hardware components, replacing faulty subsystems, installing and testing the operating system and application software, testing functionality, rectifying malfunctions, following written and oral instruction and procedures and applying appropriate customer relations.

Note:
This unit applies to all aspects of Electrotechnology - engineering applications only. For general competencies related to Information Technologies refer to the latest endorsed IT Training Package.

Application of the Unit

Application of the Unit **4**)

This unit applies to any recognised development program that leads to the acquisition of a formal award at AQF level 2 or higher.

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 where applicable contracts of training such as apprenticeships.

Pre-Requisites

Prerequisite Unit(s) **2)**

2.1) Competencies

Granting competency in this unit shall be made only after competency in the following unit(s) has/have been confirmed.

UEENEED002B There are no pre-requisites for this unit

For the full prerequisite chain details for this unit please refer to Table 2 in Volume 1, Part 2

Employability Skills Information

Employability Skills **3)**

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 upgrade and maintain computer hardware and software.	1.1	OHS procedures for a given work area are identified, obtained and understood.
	1.2	Established OHS risk control measures and procedures are followed in preparation for the work.
	1.3	Appropriate person(s) are consulted to determine the nature of computer or peripheral hardware/software upgrading or maintenance.
	1.4	Appropriate personnel are consulted to ensure the work is co-ordinated effectively with others affected by the work.
	1.5	Hardware subsystems needed to upgrade or maintain computers and peripherals are obtained in accordance with established procedures and checked against job requirements. (See Note 1)

ELEMENT	PERFORMANCE CRITERIA	
	1.6	Software versions are deployed in accordance with established procedures and checked against job requirements. (See Note 2)
2 Upgrade computer hardware and software.	2.1	OHS risk control measures and procedures for carrying out the work are followed.
	2.2	Computers are checked as being isolated where necessary in strict accordance OHS requirements and procedures.
	2.3	Computers and peripherals are dismantled as needed for upgrading in accordance with service manual instructions or industry practices, and parts stored to prevent loss or damage.
	2.4	Upgrading components are fitted and computer/peripheral apparatus is reassembled in accordance with service manual instructions or industry practices.
	2.5	Upgrading software components are installed and accordance with service manual instructions or industry practices.
	2.6	Operating system, including device drivers and application software are tested in preparation for return to service/customer. (See Note 3)
	2.7	Computer/peripheral apparatus is tested and prepared for return to customer.
3 Maintain operation of computet hardware and software.	3.1	OHS risk control measures and procedures for carrying out the work are followed.
	3.2	The need to test or measure live is determined in strict accordance with OHS requirements and when necessary conducted within established safety procedures.
	3.3	Computers are checked as being isolated where necessary in strict accordance OHS requirements and procedures.
	3.4	Computers and peripherals are dismantled as needed to find and rectify faults in accordance with service manual instructions and industry

ELEMENT	PERFORMANCE CRITERIA
	practices, and parts stored to prevent loss or damage.
	3.5 Faults are identified using logical techniques drawing on knowledge of computer/peripheral hardware components and measured values of operating parameters.
	3.6 Faulty components are rechecked and their fault status confirmed.
	3.7 Operating system malfunctions are identified using logical techniques drawing on knowledge of operating system configuration requirements.
	3.8 Device driver malfunctions are identified using logical techniques drawing on knowledge of device driver software configuration requirements.
	3.9 Application software malfunctions are identified using logical techniques drawing on knowledge of software configuration requirements.
	3.10 Malfunctions are rectified using latest software versions, incremental updates and bug and security patches.
	3.11 Computer hardware/peripheral device, operating system, including device drivers, and application software are tested in preparation for return to service/customer.
	3.12 Redundant files are removed and disposed of or archived in accordance with established procedures.
	3.13 Methods for dealing with unexpected situations are selected on the basis of safety and specified work outcomes.
	3.14 Maintenance is carried out efficiently without waste of materials and energy or damage to apparatus, the surrounding environment or other services.

ELEMENT	PERFORMANCE CRITERIA
4 Complete and report upgrading and maintenance activities.	4.1 OHS work completion risk control measures and procedures are followed.
	4.2 Work area is cleaned and made safe in accordance with established procedures.
	4.3 Written justification is produced for hardware software upgrading and maintenance.
	4.4 Upgrading and maintenance is documented and appropriate person(s) notified in accordance with established procedures.

Note:
1. Example of materials are motherboards, processors and memory modules.
2. Example include complete version update, incremental (download) updates and security and bug patches.
3. Examples include Internet access, word processing, spreadsheet, graphics, publishing and industrial applications.

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 supporting computers hardware and software.

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.

2.4.13 Computer peripherals

2.4.15 Computer operating systems

Evidence Guide

EVIDENCE GUIDE

9) This provides essential advice for assessment of the unit and must be read in conjunction with the performance criteria and the range statement of the unit and the Training Package Assessment Guidelines.

The Evidence Guide forms an integral part of this unit. It must be used in conjunction with all parts of this 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

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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 shall 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, polices and workplace procedures
- Demonstrated consistent performance across a representative range of contexts from the prescribed items below:
  - Support computer hardware and software as described in 8) and including:
    - Upgrade a computer including:

      A Obtaining appropriate upgrading subsystems

      B Dismantling, fitting upgrading subsystems and reassembling correctly

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C Testing upgrade

D Documenting upgrading activities

- Upgrade computer software on at least two occasions including:

E Identifying upgrade needs

F Installing upgrade subsystems

G Testing upgraded software

H Documenting upgrade activities

- Maintain a computer and two external peripheral devices including:

I Testing and identifying faulty components

J Dismantling, fitting replacement components and reassembling correctly

K Testing maintenance repair

L Documenting maintenance activities

- Maintain computer software on at least two occasions including:

M Identifying operating system malfunctions

N Identifying device driver malfunctions

O Identifying application malfunctions

P Rectifying software malfunctions

Q Dealing with redundant files and backups

R Documenting maintenance activities

S 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

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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 support computers hardware and software.

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 assessment 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 maintaining and upgrading the operating system, including device drivers and at least three application software types for a personal computer and server.

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	4	Writing	4	Numeracy	4

Custom Content Section

Competency Field **5)**

Computer Systems