



Australian Government

UEECS0032 Support computer hardware and software for engineering applications

Release: 1

UEECS0032 Support computer hardware and software for engineering applications

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 support computer hardware and software for engineering applications.

It includes applying safe working practices, installing and testing the upgrading components, locating faults in hardware components, replacing faulty sub-systems, installing and testing the operating system and application software, testing functionality, rectifying malfunctions, following work instructions and completing documentation.

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

Pre-requisite Unit

Not applicable

Competency Field

Computer Systems

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to upgrade and maintain computer hardware and software

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) requirements and workplace procedures for a given work area are identified, obtained and applied

- 1.2 Scope of computer and/or peripheral hardware/software upgrade or maintenance is determined in consultation with relevant person/s
 - 1.3 Relevant person/s is consulted to ensure work is coordinated effectively with others in accordance with workplace procedures
 - 1.4 Hardware sub-systems required to upgrade and/or maintain computers and peripherals are obtained in accordance with workplace procedures and job requirements
 - 1.5 Software versions are installed in accordance with workplace procedures and job requirements
- 2 Upgrade computer hardware and software**
 - 2.1 Computers are checked and isolated in accordance with WHS/OHS and workplace procedures
 - 2.2 Computers and/or peripherals are dismantled, as required, for upgrading and parts stored to prevent loss or damage in accordance with manufacturer instructions and/or relevant industry standards
 - 2.3 Upgrading components are fitted and computer/peripheral apparatus is reassembled in accordance with manufacturer instructions and/or relevant industry standards
 - 2.4 Upgrading software components are installed in accordance with manufacturer instructions and/or relevant industry standards
 - 2.5 Operating system, device drivers and application software are tested for return to service/customer in accordance with workplace procedures
 - 2.6 Computer/peripheral apparatus is tested and prepared for return to customer
- 3 Maintain operation of computer hardware and software**
 - 3.1 Need to test and measure live work is determined in accordance with WHS/OHS and workplace procedures
 - 3.2 Computers are checked and isolated in accordance with WHS/OHS and workplace procedures
 - 3.3 Computers and/or peripherals are dismantled, as required, to find and rectify faults and parts stored to

prevent loss or damage in accordance with manufacturer instructions and relevant industry standards

- 3.4** Faults are identified using tests and measured values of operating parameters of computer/peripheral hardware components in accordance with workplace procedures
- 3.5** Faulty components are re-checked and fault status confirmed
- 3.6** Operating system malfunctions are identified using tests of operating system configuration requirements in accordance with workplace procedures
- 3.7** Device driver malfunctions are identified using test of device driver software configuration requirements in accordance with workplace procedures
- 3.8** Application software malfunctions are identified and tests of software configuration requirements conducted in accordance with workplace procedures
- 3.9** Malfunctions are rectified using latest software versions, incremental updates and bug and security patches in accordance with workplace procedures
- 3.10** Computer hardware/peripheral device, operating system device drivers and application software are tested for return to service/customer in accordance with workplace procedures
- 3.11** Redundant files are removed and disposed or archived in accordance with workplace procedures
- 3.12** Methods for dealing with unplanned situations are selected in accordance with WHS/OHS and workplace procedures
- 3.13** Maintenance is carried out efficiently without waste of materials and energy or damage to apparatus, the surrounding environment or relevant services

4 Complete and report upgrade and maintenance activities

- 4.1** Work area is cleaned and made safe in accordance with workplace procedures
- 4.2** Written justification is produced for hardware software upgrade and maintenance

- 4.3** Upgrade and maintenance are documented and relevant person/s notified 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.

- | | |
|--|---|
| Maintaining and upgrading the operating system and device drivers must include at least the following: | <ul style="list-style-type: none">• two engineering application software types for a client device (e.g. computer, mobile device, embedded system) and server |
| Maintaining a computer and peripheral devices must include at least the following: | <ul style="list-style-type: none">• one computer• two external peripheral devices |

Unit Mapping Information

This unit replaces and is equivalent to UEENEED112A Support computer hardware and software for engineering applications.

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 UEECS0032 Support computer hardware and software for engineering applications

Modification History

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

Performance Evidence

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

- applying relevant work health and safety (WHS)/occupational health and safety (WHS/OHS) requirements
- completing and reporting upgrading and maintenance activities
- configuring authorisation and authentication
- configuring backup and recovery options
- configuring data access and usage
- configuring networking
- dealing with redundant files
- dealing with unplanned events
- dismantling, fitting upgrading sub-systems and reassembling correctly
- documenting maintenance activities
- documenting upgrading activities
- identifying application malfunctions
- identifying deployment or upgrade needs
- identifying device driver malfunctions
- identifying operating system malfunctions
- installing and configuring operating systems and applications software
- maintaining operation of computer hardware and software
- monitoring and maintaining an operating system using system tools
- obtaining appropriate upgrading sub-systems
- preparing to upgrade and maintain computer hardware and software
- rectifying software malfunctions
- testing and identifying faulty components
- testing maintenance repair
- testing upgraded software.

Knowledge Evidence

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

- authentication and authorisation
- configuring file and folder access
- configuring hardware, device drivers and applications
- configuring network connectivity
- file structure and management
- management of peripheral devices
- operating principles of computer peripheral hardware
- operating system components and structure
- operating system imaging and deployment
- operating system installation, upgrades and migration
- operating system malfunctions and solutions
- relevant manufacturer specifications and operating instructions
- relevant job safety assessments or risk mitigation processes
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures
- remote access
- troubleshooting techniques
- types and applications of computer peripherals
- WHS/OHS requirements
- computing device assembly/disassembly and computer operating systems.

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 used in industry

- resources that reflect current industry practices required to support computer hardware and software
- applicable documentation, including workplace procedures, equipment specifications, regulations, codes of practice and operation manuals.

Links

Companion Volume implementation guides are found in VETNet - -

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