



Australian Government

Department of Education, Employment and Workplace Relations

ICASAS301A Run standard diagnostic tests

Release: 1

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Modification History

| Version | Comments |
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| ICASAS301A | This version first released with <i>ICA11 Information and Communications Technology Training Package version 1.0</i> |

Unit Descriptor

This unit describes the performance outcomes, skills and knowledge required to troubleshoot problems and conduct diagnostic tests on a range of platforms.

Application of the Unit

This unit applies to workers who require the information and communications technology (ICT) skills to run diagnostics to determine the status of a computer.

Licensing/Regulatory Information

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

| Element | Performance Criteria |
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| <p><i>Elements describe the essential outcomes of a unit of competency.</i></p> | <p><i>Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.</i></p> |

Elements and Performance Criteria

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| <p>1. Identify common symptoms and preventative maintenance techniques</p> | <p>1.1 Develop a <i>troubleshooting process</i> to help resolve problems</p> <p>1.2 Determine the <i>specific symptoms</i> relevant to different types of hardware, operating system and printer problems</p> <p>1.3 Identify <i>common preventative maintenance</i> techniques to support maintenance strategies</p> |
| <p>2. Operate system diagnostics</p> | <p>2.1 Run the system diagnostic program according to specification</p> <p>2.2 Modify the system configuration as indicated by the diagnostic program</p> <p>2.3 Carry out preventative maintenance in line with <i>organisational guidelines</i></p> |
| <p>3. Scan system for viruses</p> | <p>3.1 Scan the system to check and maintain virus protection</p> <p>3.2 Report identified viruses to an <i>appropriate person</i></p> <p>3.3 Remove virus infections found by the scan using <i>software</i> tools and procedures, or by restoring backups</p> <p>3.4 Document relevant symptom and removal information</p> |

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required skills

- analytical skills to interpret test results
- communication skills to present information
- literacy skills to interpret computer manuals
- numeracy skills to:
 - interpret results
 - take test measurements
- planning and organisational skills to plan, prioritise and monitor own work
- problem-solving skills for a defined range of predictable problems
- technical skills to use diagnostic tools.

Required knowledge

- client business domain, including client organisation structure and business functionality
- current industry-accepted hardware and software diagnostic tools, including products that manage:
 - backup procedures
 - configuration procedures
 - diagnostic software and hardware
 - hardware maintenance
 - organisational security procedures
- desktop applications and operating systems.

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

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| <p>Overview of assessment</p> | |
| <p>Critical aspects for assessment and evidence required to demonstrate competency in this unit</p> | <p>Evidence of the ability to:</p> <ul style="list-style-type: none"> • troubleshoot hardware and OS problems • conduct diagnostic tests on a range of platforms according to preventative maintenance and diagnostic policy • identify the root causes of the problems • scan systems for computer viruses • remove viruses using software tools and procedures • remove viruses by restoring backups. |
| <p>Context of and specific resources for assessment</p> | <p>Assessment must ensure access to:</p> <ul style="list-style-type: none"> • security guidelines • backup procedures • diagnostic software • organisational guidelines • appropriate learning and assessment support when required • modified equipment for people with special needs. |
| <p>Method of assessment</p> | <p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> • direct observation of candidate: <ul style="list-style-type: none"> • troubleshooting problems • conducting diagnostic tests • adhering to organisation’s operational procedures • review of candidate’s documented report of symptom and its removal • verbal or written questioning to assess candidate’s knowledge of preventative maintenance within organisational guidelines. |
| <p>Guidance information for assessment</p> | <p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, where appropriate.</p> <p>Assessment processes and techniques must be culturally appropriate, and suitable to the communication skill level, language, literacy and numeracy capacity of the candidate and</p> |

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| | <p>the work being performed.</p> <p>Indigenous people and other people from a non-English speaking background may need additional support.</p> <p>In cases where practical assessment is used it should be combined with targeted questioning to assess required knowledge.</p> |
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Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

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| <p><i>Troubleshooting process</i> may include:</p> | <ul style="list-style-type: none"> • identifying the problem by questioning the user and identifying user changes to computer • performing backups before making changes • establishing a theory of probable cause • testing the theory to determine cause: <ul style="list-style-type: none"> • once theory is confirmed determine next steps to resolve problem • if theory is not confirmed re-establish new theory or escalate • establishing a plan of action to resolve the problem and implement the solution • verifying full system functionality and if applicable implementing preventative measures • documenting findings, actions and outcomes. |
| <p><i>Specific symptoms</i> may include:</p> | <ul style="list-style-type: none"> • hardware-related symptoms: <ul style="list-style-type: none"> • alerts • excessive heat • noise • odours • status light indicators • visible damage to cable or plastic • laptop or mobile devices: <ul style="list-style-type: none"> • issues: <ul style="list-style-type: none"> • keyboard • pointer • power conditions • stylus • video • wireless card issues • methods: <ul style="list-style-type: none"> • check LCD cut-off switch • check switch for built-in wi-fi or external antennas • plug in external monitor • remove unneeded peripherals |

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| | <ul style="list-style-type: none"> • toggle Fn keys or hardware switches • verify backlight functionality and pixilation • verify power (e.g. LEDs, swap AC adapter) • operating system (OS) related symptoms: <ul style="list-style-type: none"> • application install • bluescreen • incorrect or incompatible driver • input or output device • print spool stalled • start or load • system lock-up • Windows-specific printing problems • printers: <ul style="list-style-type: none"> • manage print jobs • failure to print a test page • print spooler • printer properties and settings • use documentation and resources: <ul style="list-style-type: none"> • internet or web-based • training materials • user or installation manuals. |
| <p><i>Common preventative maintenance</i> may include:</p> | <ul style="list-style-type: none"> • backup procedures • ensuring proper environment • optimising hard drives • power devices appropriate source: <ul style="list-style-type: none"> • power strip • surge protector • UPS • physical inspection • scanning for viruses • scheduling fault-finding • scheduling preventative maintenance: <ul style="list-style-type: none"> • check disk • defrag • scandisk • start-up programs • updates: <ul style="list-style-type: none"> • driver • firmware • OS |

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| | <ul style="list-style-type: none"> • security • use of appropriate repair tools and cleaning materials: <ul style="list-style-type: none"> • compressed air • computer vacuum and compressors • lint-free cloth. |
| <i>Organisational guidelines</i> may include: | <ul style="list-style-type: none"> • communication methods • content of emails • dispute resolution • document procedures and templates • downloading information and accessing particular websites • financial control mechanisms • opening mail with attachments • personal use of emails and internet access • virus risk. |
| <i>Appropriate person</i> may include: | <ul style="list-style-type: none"> • authorised business representative • client • supervisor. |
| <i>Software</i> may include: | <ul style="list-style-type: none"> • diagnostic tools • OS and modules for configuration • types of virus and impact • virus protection software. |

Unit Sector(s)

Systems administration and support