

<b>Training Package</b>	Information and Communications Technology (ICA05)		<b>HSC Requirements and Advice</b>
<b>Title</b>	<b>Run standard diagnostic tests</b>		
<b>Unit code</b>	<b>Unit sector</b>	<b>HSC Indicative Hours</b> <b>10</b>	
<b>ICAT3025B</b>	Test		
<b>Unit descriptor</b>	<p>This unit defines the competency required to conduct diagnostic tests on a range of platforms.</p> <p>There may be benefit in concurrent learning with the following unit:</p> <ul style="list-style-type: none"> <li>• ICAS3234B Care for computer hardware</li> </ul> <p>The following units are linked and form an appropriate cluster:</p> <ul style="list-style-type: none"> <li>• ICAI3020B Install and optimise operating system software</li> <li>• ICAS3024B Provide basic system administration</li> <li>• ICAU3019B Migrate to new technology</li> </ul> <p>No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication.</p>		
<b>Prerequisite units</b>	There are no prerequisites for this unit		
<b>Employability skills</b>	This unit contains employability skills.		

<b>Required skills and knowledge</b>		<b>HSC Requirements and Advice</b>
This section describes the skills and knowledge required for this unit.		
<b>Required skills</b>	<b>Required knowledge</b>	<b>Key Terms and Concepts</b>
<ul style="list-style-type: none"> <li>• Problem solving skills for a defined range of predictable problems</li> <li>• Literacy skills in regard to interpretation of computer manuals</li> <li>• Plain English literacy and communication skills in relation to analysis, evaluation and presentation of information</li> <li>• Use of diagnostic tools.</li> </ul>	<ul style="list-style-type: none"> <li>• Configuration procedures</li> <li>• Back-up procedures</li> <li>• Organisational security procedures</li> <li>• Diagnostic software/hardware</li> <li>• Hardware maintenance</li> <li>• Security procedures.</li> </ul>	<ul style="list-style-type: none"> <li>• computer problems</li> <li>• configuration procedures</li> <li>• diagnostic policy and procedures</li> <li>• preventative maintenance</li> <li>• problem-solving process</li> <li>• reporting and recording.</li> </ul>

## 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.

<b>Critical aspects for assessment and evidence required to demonstrate competency in this unit</b>	<b>Context of and specific resources for assessment</b>	<b>Method of assessment</b>	<b>Guidance information for assessment</b>
<p>Evidence of the following is essential:</p> <ul style="list-style-type: none"> <li>assessment must confirm the ability to conduct diagnostic tests on a range of platforms according to preventative maintenance and diagnostic policy, and to correctly identify the root causes of the problems.</li> </ul> <p>To demonstrate competency in this unit the person will require access to:</p> <ul style="list-style-type: none"> <li>security guidelines</li> <li>back-up procedures</li> <li>diagnostic software.</li> </ul>	<p>Demonstrating competence in basic diagnostic testing will include knowledge by recall in a narrow range of areas; demonstrating basic practical skills, such as the use of relevant tools; perform a sequence of routine tasks given clear direction; and receive and pass on messages/information.</p> <p>Demonstration of these competence would involve:</p> <ul style="list-style-type: none"> <li>demonstration of basic testing and adherence to operational procedures</li> <li>applying knowledge solutions to a limited range of unpredictable problems</li> <li>performing a range of diagnostic tasks where suspected breakdowns or irregularities of performance have appeared</li> <li>assessing and recording information from varied sources.</li> </ul> <p>The breadth, depth and complexity of knowledge and skills in this competency would cover selecting, adapting and transferring skills and knowledge to new environments and providing technical advice and some leadership in resolution of specified problems. This would be applied across a range of roles in a variety of contexts with some complexity in the extent and choice of options available.</p> <p>Assessment must ensure:</p> <ul style="list-style-type: none"> <li>performance of a defined range of skilled operations, usually within a range of broader related activities involving known routines, methods and procedures, where some discretion and judgement is required in the section of equipment, services or contingency measures and within known time constraints would be characteristic</li> <li>applications may involve some responsibility for others. Participation in teams including group or team coordination may be involved.</li> </ul>	<p>The purpose of this unit is to define the standard of performance to be achieved in the workplace. In undertaking training and assessment activities related to this unit, consideration should be given to the implementation of appropriate diversity and accessibility practices in order to accommodate people who may have special needs. Additional guidance on these and related matters is provided in ICA05 Section 1.</p> <ul style="list-style-type: none"> <li>Competency in this unit should be assessed using summative assessment to ensure consistency of performance in a range of contexts. This unit can be assessed either in the workplace or in a simulated environment. However, simulated activities must closely reflect the workplace to enable full demonstration of competency.</li> <li>Assessment will usually include observation of real or simulated work processes and procedures and/or performance in a project context as well as questioning on underpinning knowledge and skills. The questioning of team members, supervisors, subordinates, peers and clients where appropriate may provide valuable input to the assessment process. The interdependence of units for assessment purposes may vary with the particular project or scenario.</li> </ul>	<p>Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended, for example:</p> <ul style="list-style-type: none"> <li>ICAI3020B Install and optimise operating system software</li> <li>ICAS3024B Provide basic system administration</li> <li>ICAU3019B Migrate to new technology.</li> </ul> <p>An individual demonstrating this competency would be able to:</p> <ul style="list-style-type: none"> <li>demonstrate some relevant theoretical knowledge</li> <li>apply a range of well-developed skill</li> <li>apply known solutions to a variety of predictable problems</li> <li>perform processes that require a range of well-developed skills where some discretion and judgement is required</li> <li>interpret available information, using discretion and judgement</li> <li>take responsibility for own outputs in work and learning</li> <li>take limited responsibility for the output of others</li> <li>maintain knowledge of industry products and services.</li> </ul>

Elements	Performance criteria	Range Statement	HSC requirements and advice
1 Operate systems diagnostics.	1.1 Run the system diagnostic program according to specification.	The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. <b><i>Bold italicised</i></b> 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.	<p><b>Learning experiences for the HSC must address:</b></p> <p>A basic understanding of company/organisation:</p> <ul style="list-style-type: none"> <li>• system security guidelines</li> <li>• preventative maintenance and diagnostic policy</li> <li>• hardware maintenance procedures</li> <li>• diagnostic procedures.</li> </ul> <p>An awareness of major areas in which computer problems arise including:</p> <ul style="list-style-type: none"> <li>• electrical or electronic failure</li> <li>• hardware failure</li> <li>• software failure</li> <li>• operator/user-generated error.</li> </ul> <p>Sources of technical data and information that may be required when fault-finding including:</p> <ul style="list-style-type: none"> <li>• manufacturer manuals</li> <li>• data reference books</li> <li>• textbooks</li> <li>• industry publications/magazines</li> <li>• websites</li> <li>• discussion groups.</li> </ul> <p>Identifying the root cause of problems including:</p> <ul style="list-style-type: none"> <li>• remove hardware/software that may mask/confuse the issue</li> <li>• use diagnostic tools</li> <li>• test theory</li> </ul> <p>A definition of:</p> <ul style="list-style-type: none"> <li>• system diagnostic program.</li> </ul> <p>Hardware and software diagnostic tools including:</p> <ul style="list-style-type: none"> <li>• those supplied with the computer operating system</li> <li>• those supplied by the manufacturer of the hardware and software installed</li> <li>• those purchased or found as shareware/freeware on the internet.</li> </ul>

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	1.2 Modify the system configuration as indicated by the diagnostic program.		<p>General features, selection and use of diagnostic tools and software appropriate to the task including:</p> <ul style="list-style-type: none"> <li>• third party diagnostic software or tool</li> <li>• diagnostic card.</li> </ul> <p>Standard diagnostic testing of:</p> <ul style="list-style-type: none"> <li>• disk integrity</li> <li>• memory faults</li> <li>• system performance.</li> </ul> <p><b>Learning experiences for the HSC must address:</b></p> <p>A knowledge of appropriate backups required prior to modifying the system.</p> <p>Interpretation of results of diagnostic program and application of appropriate configuration procedures.</p>
	1.3 Carry out <i>preventative maintenance</i> in line with <i>organisational guidelines</i> .	<p><i>Preventative maintenance</i> includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• scheduled fault-finding</li> <li>• optimising of hard drives</li> <li>• scanning for viruses.</li> </ul> <p><i>Organisational guidelines</i> may include but are not limited to:</p> <ul style="list-style-type: none"> <li>• personal use of emails and internet access</li> <li>• content of emails</li> <li>• downloading information and accessing particular websites</li> <li>• opening mail with attachments</li> <li>• virus risk</li> <li>• dispute resolution</li> <li>• document procedures and templates</li> <li>• communication methods</li> <li>• financial control mechanisms.</li> </ul>	<p><b>Learning experiences for the HSC must address:</b></p> <p>Preventative maintenance including:</p> <ul style="list-style-type: none"> <li>• scheduled fault-finding</li> <li>• hard disk maintenance</li> <li>• scanning for viruses.</li> </ul> <p>Hard disk maintenance including:</p> <ul style="list-style-type: none"> <li>• cleaning-up unwanted files</li> <li>• checking the disk for errors</li> <li>• optimising the storage of data</li> <li>• using the defragment utility.</li> </ul>
2 Scan system for viruses.	2.1 Scan the system to check and maintain virus protection.		<p><b>Learning experiences for the HSC must address:</b></p> <p>A basic understanding of:</p> <ul style="list-style-type: none"> <li>• a computer virus</li> <li>• how a virus can affect a computer system</li> <li>• virus signature.</li> </ul>

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			<p>A knowledge of:</p> <ul style="list-style-type: none"> <li>• virus types <ul style="list-style-type: none"> <li>- system sector</li> <li>- file</li> <li>- email</li> <li>- macro</li> </ul> </li> <li>• destructive software <ul style="list-style-type: none"> <li>- logic bombs</li> <li>- trojans</li> <li>- worms</li> <li>- hoaxes.</li> </ul> </li> </ul> <p>Virus protection software:</p> <ul style="list-style-type: none"> <li>• operating system</li> <li>• commercially available</li> <li>• network server.</li> </ul> <p>Detection of viruses using anti-virus software through:</p> <ul style="list-style-type: none"> <li>• a full scan of the computer (local or network)</li> <li>• a scan in real-time as each file is accessed.</li> </ul> <p>The importance of regularly updating virus protection including:</p> <ul style="list-style-type: none"> <li>• virus pattern files</li> <li>• virus scanning software.</li> </ul> <p>Performing a complete scan of the hard disk.</p>
	<p>2.2 Report identified viruses to an <i>appropriate person</i>.</p>	<p><i>Appropriate person</i> may include:</p> <ul style="list-style-type: none"> <li>• supervisor</li> <li>• teacher</li> <li>• authorised business representative</li> <li>• client.</li> </ul>	<p><b>Learning experiences for the HSC must address:</b></p> <p>Reporting:</p> <ul style="list-style-type: none"> <li>• verbal/written</li> <li>• formal/informal.</li> </ul> <p>Appropriate person/s including:</p> <ul style="list-style-type: none"> <li>• supervisor/team leader</li> <li>• information technology (IT) technical support staff</li> <li>• help desk operator</li> <li>• system administrator</li> <li>• network administrator</li> <li>• trainer</li> <li>• supplier.</li> </ul>

Elements	Performance criteria	Range Statement	HSC requirements and advice
	2.3 Remove virus infections found by the scan using <i>software</i> tools and/or procedures or by restoring back-ups.	<i>Software</i> may include but are not limited to: <ul style="list-style-type: none"> <li>• diagnostic tools and their operation</li> <li>• virus protection software and operation</li> <li>• operating systems and modules for configuration</li> <li>• types of virus and impact.</li> </ul>	<p><b>Learning experiences for the HSC must address:</b></p> <p>A knowledge of company/organisation procedures when a virus is detected:</p> <ul style="list-style-type: none"> <li>• deactivate the virus</li> <li>• clean (remove) the virus</li> <li>• recover any lost/damaged data</li> <li>• prevent a recurrence</li> <li>• rebuild the system (if necessary).</li> </ul> <p>Source of virus removal tools including:</p> <ul style="list-style-type: none"> <li>• vendors</li> <li>• internet sites.</li> </ul> <p>Accessing anti-virus software vendor website and download and use most current version of their software.</p> <p>A basic knowledge of company/organisation backup policy and procedures.</p>
	2.4 Document relevant symptom and removal information.		<p><b>Learning experiences for the HSC must address:</b></p> <p>Completion of workplace documentation, for example a central register of detected viruses, including details about the virus, its source and action taken.</p>