

## PERFORM COMPUTER REPAIR AND MAINTENANCE

UNIT CODE: SEC/OS/CS/CR/01/6/A

### UNIT DESCRIPTION

This unit covers the competencies required to perform computer repair and maintenance. It entails performing troubleshooting, dismantling faulty components, repairing/replacing faulty components, upgrading computer software/hardware, and preparing and documenting maintenance reports.

### ELEMENTS AND PERFORMANCE CRITERIA

| <b>ELEMENT</b><br>These describe the key outcomes which make up workplace function. | <b>PERFORMANCE CRITERIA</b><br>These are assessable statements which specify the required level of performance for each of the elements.<br><i>(Bold and italicised terms are elaborated in the Range)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| 1. Perform troubleshooting                                                          | 1.1 Performance issues in the machine are identified as per the workplace procedures<br>1.2 <b>Hardware and software are</b> diagnosed in line with the standard operating procedure<br>1.3 Testing and troubleshooting tools are established as per the industry best practices                                                                                                                                                                                                                                                                                                                                                                                           |
| 2. Dismantle faulty components                                                      | 2.1 Components to be dismantled are identified<br>2.2 Components are dismantled in line with the manufacturer's manuals<br>2.3 Dismantling tools and components are established in standard operating procedures<br>2.4 Component handling is aligned to the standard operating procedures                                                                                                                                                                                                                                                                                                                                                                                 |
| 3. Repair/Replace faulty components                                                 | 3.1 Diagnostic tools and instruments are identified as per the workplace policy<br>3.2 Components functionality is tested as per the manufacturer's manuals<br>3.3 Test parameters are compared with the expected output in line with the manufacturer's manuals<br>3.4 Faulty components are identified and removed as per the standard operating procedure<br>3.5 Faulty components are repaired/replaced in line with manufacturers manuals<br>3.6 Repaired/replaced components are tested for their functionality according to standard operating procedure<br>3.7 Components are reassembled, and continuous monitoring performed as per the industries best practice |

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| <p>4. Upgrade computer hardware/software</p>                                                   | <p>4.1 Tools in managing software updates are established as per the industry best practice</p> <p>4.2 Test environment is developed for hardware and software as per industry best practices</p> <p>4.3 Licensed software and hardware are used in computer upgrades as per the organizations <b>ICT policy</b></p> <p>4.4 Schedule updates in lines with the organization policy</p> <p>4.5 Upgraded computer hardware and software are tested in line with the organization policy</p> |
| <p>5. Prepare and document maintenance report</p>                                              | <p>5.1 Maintenance report is prepared in line with the organizations approved format</p> <p>5.2 Maintenance report is shared with the relevant parties</p> <p>5.3 Prepared report is filed as per the organizations policy</p>                                                                                                                                                                                                                                                            |

## RANGE

This section provides work environment and conditions to which the performance criteria apply. It allows for different work environment and situations that will affect performance.

| Variable                                           | Range                                                                                                                                                                                                                                |
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| <p>1. Hardware may include but not limited to:</p> | <ul style="list-style-type: none"> <li>• Desktops</li> <li>• Central process unit (CPU)</li> <li>• Laptops</li> <li>• Mobile phones</li> <li>• Server boxes</li> <li>• Hard drives</li> <li>• Routers</li> <li>• Switches</li> </ul> |
| <p>2. Software may include but not limited to:</p> | <ul style="list-style-type: none"> <li>• Preventive</li> <li>• Detective</li> <li>• Responsive</li> </ul>                                                                                                                            |

## REQUIRED KNOWLEDGE AND UNDERSTANDING

*The individual needs to demonstrate knowledge and understanding of:*

- Security risk management techniques and procedures
- Types of security threats and their control measures
- Security audit procedures
- ICT security policy
- Strategies for Mitigating risks
- Categories of Security threats
- Penetration testing skills

## FOUNDATION SKILLS

The individual needs to demonstrate the following foundation skills:

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| <ul style="list-style-type: none"><li>• Communications (verbal and written);</li><li>• Time management;</li><li>• Penetration Skills</li><li>• Problem solving;</li><li>• Planning;</li></ul> | <ul style="list-style-type: none"><li>• Decision making;</li><li>• Report writing;</li></ul> |
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## EVIDENCE GUIDE

This provides advice on assessment and must be read in conjunction with the performance criteria, required skills and understanding and range.

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| 1. Critical Aspects of Competency | Assessment requires evidence that the candidate:<br>1.1 Diagnosed software and hardware in line with the standard operating procedure<br>1.2 Dismantled components in line with the manufacture's manuals<br>1.3 Tested components functionality as per the manufacturer's manuals<br>1.4 Tested repaired/replaced components functionality according to standard operating procedure<br>1.5 Monitoring reassembled components as per the industries best practice<br>1.6 Test environment was developed for hardware and software as per industry best practices<br>1.7 Prepared maintenance report in line with organizations approved format<br>1.8 Tested upgraded computer hardware and software were tested in line with the organization policy<br>1.9 Security threats were identified and classified as per the organization ICT policy<br>1.10 Security control measures were identified and |
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|                                                      | categorized                                                                                                                                                                                                                                            |
| 2. Resource Implications for competent certification | The following resources should be provided:<br>2.1 Access to relevant workplace where assessment can take place<br>2.2 Appropriately simulated environment where assessment can take place<br>2.3 Materials relevant to the proposed activity or tasks |
| 3. Methods of Assessment                             | Competency may be assessed through:<br>3.1 Observation<br>3.2 Oral questioning<br>3.3 Practical test in conducting test<br>3.4 Demonstration of interpretation of test results                                                                         |
| 4. Context of Assessment                             | Competency may be assessed individually<br>4.1 In the actual workplace<br>4.2 Simulated environment of the work place                                                                                                                                  |
| 5. Guidance information for assessment               | Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.                                                                                                                                           |

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