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| **Unit Title:** | **Testing ICT Systems** | |
| OCR unit number | 30 | |
| Level: | 3 | |
| Credit value: | 12 | |
| Guided learning hours: | 100 | |
| Unit reference number: | F/500/7355 | |

Candidates undertaking this unit must complete real work activities in a work environment. Simulation is only allowed in exceptional circumstances (please refer to the centre handbook for further details).

## Unit purpose and aim

To develop knowledge, understanding and skills to carry out testing of ICT systems and provide expertise to others in testing.

| Learning Outcomes | Assessment Criteria | Knowledge, understanding and skills |
|---|---|---|
| **The Learner will:** | **The Learner can:** | Candidates must: |
| 1 Know technical information about a wide range of products, testing procedures and associated activities, equipment to be used and the reasons for the test | 1.1 Describe the testing process to be followed: <br> • how to select tests and collect relevant and sufficient information for the test to be successful <br> • how to minimise service disruption during testing and avoid detrimental effects or changes to performance <br> • ways to configure tests <br> • how to record, maintain or restore configurations, data and functionality <br> • types of service level agreements <br> • individual responsibility and authority <br> • escalation procedures and risks associated with using a testing process <br> • information analysis <br> 1.2 Describe the purposes of testing: <br> • aiding the diagnostic | • have a detailed understanding of the testing process to include: <br>   - how to create an appropriate test plan <br>   - how to select appropriate tests in order to collate information <br>   - timing of the plans and associated timescales <br>   - how to configure and record the tests <br>   - who to refer to if there is a problem outside of their control <br>   - risks involved <br>   - how to analyse the information <br> • have an understanding of different types of service level agreements and how these can affect the testing that they can carry out <br> • have a clear understanding of the purpose of carrying out tests and how they prepare and conclude testing activities <br> • be able to interpret technical |

| Learning Outcomes | Assessment Criteria | Knowledge, understanding and skills |
|---|---|---|
| | process<br>• comparing actual and expected performance<br>• testing performance<br>1.3 Describe what test preparation and conclusion activities are necessary for specific tests, such as:<br>• Health & safety legislation and regulations<br>• need to obtain work permissions<br>• site access and security<br>• system or equipment integrity (e.g. ensuring network service continuity)<br>• data integrity (e.g. taking data backups before commencing work)<br>• resource availability<br>• level of service allowed by the SLA<br>• environment legislation and regulations (e.g. disposal of materials)<br>• work sign off and reporting<br>• site restoration, system and equipment integrity (e.g. restoring service)<br>• data integrity (e.g restoring data backups as necessary)<br>1.4 Interpret detailed technical information on a specified range of products | information from a range of sources for a range of products |
| 2   Carry out testing and support others in the testing process | 2.1 Provide technical advice to support testing<br>2.2 Select any necessary preparation and conclusion activities and ensure that they have been completed<br>2.3 Select, adapt and use appropriate testing tools:<br>• electrical/electronic test instruments<br>• on-board self-test | Candidates must:<br>• be able to carry out routine testing following test plans produced by them, and support others in the testing process<br>• be able to carry out the preparation and conclusion activities as required<br>• have a detailed understanding of and be able to use a wide range of testing tools based |

| Learning Outcomes | Assessment Criteria | Knowledge, understanding and skills |
|---|---|---|
| | programs<br>• loopback devices<br>• on-line/remote monitoring software<br>• software debuggers<br>• runtime analysers<br>• diagnostic software<br>2.4 Gather, record and respond to test information and results by:<br>• interpreting error codes/messages<br>• comparing with specifications<br>• identifying inconsistent data<br>• examining results from multiple tests or trend analysis<br>• using analytical tools to extract information from test data | on the requirements of the test plan<br>• be able to gather and record test information and interpret results. They must be able to judge the reliability of the results and make judgements based on the results |

## Assessment

Candidates undertaking this unit must complete real work activities in order to produce evidence to demonstrate they are occupationally competent. Real work is where the candidate is engaged in activities that contribute to the aims of the organisation by whom they are employed, for example in paid employment or working in a voluntary capacity.

Simulation is only allowed for aspects of units when a candidate is required to complete a work activity that does not occur on a regular basis and therefore opportunities to complete a particular work activity do not easily arise. When simulation is used, assessors must be confident that the simulation replicates the workplace to such an extent that candidates will be able to fully transfer their occupational competence to the workplace and real situations.

Internal quality assurance personnel must agree the use of simulated activities before they take place and must sample all evidence produced through simulated activities.

It is the assessor's role to satisfy themselves that evidence is available for all performance, knowledge and evidence requirements before they can decide that a candidate has finished a unit. Where performance and knowledge requirements allow evidence to be generated by other methods, for example by questioning the candidate, assessors must be satisfied that the candidate will be competent under these conditions or in these types of situations in the workplace in the future. Evidence of questions must include a written account of the question and the candidate's response. Observations and/or witness testimonies must be detailed and put the evidence into context ie the purpose of the work etc.

All of the assessment criteria in the unit must be achieved and clearly evidenced in the submitted work, which is externally assessed by OCR.

Evidence for the knowledge must be explicitly presented and not implied through other forms of evidence.

## Evidence requirements

**All aspects of the assessment criteria must be covered and evidence must be available that shows where and how the assessment criteria have been achieved.**

**Assessment Criterion 1**

Candidates must be provide evidence of creating at least 4 test plans to test at least two hardware components and two software component of an ICT system. The activities must enable the candidate to fully demonstrate their knowledge and skills against the full range of assessment criteria. Candidates must provide detailed reports explaining their test plans and the choices/decisions they have made as well as the testing process they will follow.

Candidates must provide a detailed report explaining the purpose of testing and the preparation and conclusion activities that must be carried out.

Candidates must provide examples of interpreting technical information on a range of different products. They should include the specification for each product and their interpretation.

**Assessment Criterion 2**

Candidates must provide evidence of providing technical support to testing. This can be in the form of a report, detailed witness testimony or other forms of documentary evidence. The content of the evidence must put the activity in context and provide an explanation as to the purpose of the testing, why technical advice was required and what technical advice was provided by the candidate.

Candidates must provide evidence of carrying out preparation activities prior to testing eg recording documentation, reports. They must provide evidence of carrying out a range of tests following their plans using a wide range of testing tools. The evidence should include the test results supported by appropriate screenshots and/or printouts and validation. Candidates must provide evidence of analysing the results of the tests and make judgements and recommendations based on the results.

Candidates are encouraged to choose activities which will allow them to cover all or a majority of the criteria at one time. It is not necessary to use different activities for each element of the criterion.

## Guidance on assessment and evidence requirements

Evidence can reflect how the candidate carried out the process or it can be the product of a candidate's work or a product relating to the candidate's competence.

For example: The process that the candidate carries out could be recorded in a detailed personal statement or witness testimony. It is the assessor's responsibility to make sure that the evidence a candidate submits for assessment meets the requirements of the unit.

Questioning the candidate is normally an ongoing part of the assessment process, and is necessary to:

- test a candidate's knowledge of facts and procedures

- check if a candidate understands principles and theories *and*

- collect information on the type and purpose of the processes a candidate has gone through

- candidate responses must be recorded

It is difficult to give a detailed answer to how much evidence is required as it depends on the type of evidence collected and the judgement of assessors. The main principles, however, are as follows: for a candidate to be judged competent in a unit, the evidence presented must satisfy:

- all the items listed, in the section 'Learning Outcomes'

- all the areas in the section 'Assessment Criteria'

The quality and breadth of evidence provided should determine whether an assessor is confident that a candidate is competent or not. Assessors must be convinced that candidates working on their own can work independently to the required standard.

## Additional information

For further information regarding administration for this qualification, please refer to the OCR document 'Admin Guide: Vocational Qualifications' (A850) on the OCR website www.ocr.org.uk .