Unit Title: **Designing and Developing a Web Site**

OCR unit number	42
Level:	4
Credit value:	15
Guided learning hours:	90
Unit reference number:	L/601/3315

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 provide the learner with the skills and competencies to carry out a Web site development from design to testing in a professional capacity and to understand a range of issues concerned with Web development activities.

Learning Outcomes	Assessment Criteria	Knowledge, understanding and skills

The Learner will:
1 Design a Web site to address loosely-defined requirements
	The Learner can:
	1.1 Identify the key design features inherent within a requirements specification
	1.2 Use planning tools and techniques to create a site map
	1.3 Evaluate different design models and select the most appropriate to meet requirements
		Candidates must:
		• understand the features that would be expected to be seen in a design specification eg
		  - navigation,
		  - accessibility,
		  - optimisation for search engines, pages, layout.
		• produce a site map thinking about navigation, orphan pages.
		• evaluate their different design models and then from this select and give some justification as to why they have selected this model.

2 Use web development tools to build (X)HTML- and CSS-based websites to address well-defined specifications	2.1 Describe the use of (X)HTML to develop websites 2.2 Describe how to use CSS to standardise the overall style of a website 2.3 Write the source code for a simple web page in clean XHTML according to a specification. 2.4 Write the source code for a CSS according to a specification 2.5 Explain the contextual application of a variety of web development	Candidates must: • describe how Mark up languages can be used within a website in order to build content. • describe the use of CSS usage in web design and explain the benefits of using it for website creation. • write the code in (X)HTML for a single webpage based on the given scenario and saved

Learning Outcomes	Assessment Criteria	Knowledge, understanding and skills
	tools 2.6 Explain the advantages and disadvantages of various web development methodologies and technologies	using recognised conventions and an awareness of mark up validation. • write the source code for the CSS of a website as specified. • explore the development stages of web technologies
3 Understand the technology and tools needed to use multimedia in the context of a website	3.1 Explain the advantages and disadvantages of various types of multimedia file format 3.2 Explain the advantages and disadvantages of different types of multimedia element in relation to different contexts 3.3 Embed functional multimedia components in an (X)HTML site	Candidates must: • explore different file formats for video, audio and images commenting on quality versus download times, pluggins and codex and explain the advantages and disadvantages of each (this could be in relation to method of delivery to the user eg broadband, 3G etc.) and the context to which they arte being used. • embed their multimedia components into a (X)HTML site ensuring that links are dynamic.
4 Develop test strategies and apply these to a Web site	4.1 Develop and apply a test strategy consistent with the design 4.2 Determine expected test results 4.3 Record actual test results to enable comparison with expected results 4.4 Analyse actual test results against expected results to identify discrepancies 4.5 Investigate test discrepancies to identify and rectify their causes 4.6 Explain the need for testing on different platforms and browsers	Candidates must: • create a detailed test strategy and test plan. Testing should be carried out with the target audience in mind and include user acceptance testing. The test should be carried out across different browsers and versions of browser eg Opera, IE, firefox etc and across different platforms eg PC, mobile phone, gaming platform etc • determine what results they would expect to see in some detail and then compare these with the actual results obtained and highlight any discrepancies which should then be rectified
5 Understand the need for Web standards	5.1 Explain the role of the W3C 5.2 Explain W3C standards and their application in site coding 5.3 Discuss web accessibility and usability issues from the viewpoint of an IT professional	Candidates must: • explain what W3C is and the way it has lead to a standardisation of website formats. • be aware of the latest standards with regard to site coding. • be aware of issues regarding

Learning Outcomes	Assessment Criteria	Knowledge, understanding and skills
		accessibility and usability including device independence, web accessibility initiative (WAI),
6 Understand the concepts associated with using the Internet and the World Wide Web for business	6.1 Explain the underlying physical and operational properties of the Internet and World Wide Web, including the difference between the two 6.2 Discuss the Internet and the Web as a business tool, including (but not limited to) as a tool for communications, research, sales and marketing 6.3 Discuss the advantages and disadvantages of various internet-based models, in different contexts 6.4 Discuss the advantages and disadvantages of various e-Commerce models, in different contexts	Candidates must: • explore the internet (in its broadest sense including dissemination of information across its medium) and the World Wide web • look at the way the internet is used by businesses this may include web marketing, communications (email etc), viral marketing, flash mobs, • look at e-commerce and the way that portals have been set up to other websites eg price comparison sites.

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 produce a report as evidence for;

- key design features

- planning tools and techniques

- evaluation of different design models and appropriateness to meet needs

The evidence can include print outs of the site map created.

Assessment Criterion 2

Candidates must;

- describe the use of (X)HTML and CSS in the form of a report

- print out their source code for their page this could be annotated to show an understanding of the coding that has been used

- produce a report as evidence of their investigations

Assessment Criterion 3

Candidates must give examples of different types of multimedia formats, this must include;

- screen captures of file formats to enhance their arguments as to advantages and disadvantages

- evidence the finished look for their multimedia components and show the coding in which they are placed

Assessment Criterion 4

Candidates must

- develop a testing table to test their work which must include multiple tests and expected outcomes for these tests

- evidence the finished testing table being submitted showing expected verses actual results and identification of the causes

- show how they have rectified the areas that did not work as expected, which can be done with screen shots

- evidence their testing in different platforms and browsers in the form of a presentation or report

Assessment Criterion 5

Candidates must

- document their explanations with regard to W3C standards and their application

- document their discussions in terms of web accessibility and usability from the point of an IT professional

Assessment Criterion 6

- candidates must produce a report or presentation which will include operational properties and differences between the Internet and World Wide Web and how they can be used as a business tool

- a table may be used to highlight the advantages verses the disadvantages of internet models in different context and in terms of ecommerce models, which may include some examples and screen shots of ecommerce models to reinforce these arguments

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.

You should refer to the '*Admin Guide: Vocational Qualifications* (A850)' for *Notes on Preventing Computer-Assisted Malpractice*.

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 .