Higher National Unit specification

General information for centres

Unit title: Web Development Fundamentals

Unit code: F203 34

Unit purpose: This Unit is designed to enable candidates to develop websites using Extensible Hypertext Markup Language (XHTML) (or a similar markup language). Candidates will also be introduced to insert images, create hyperlinks, and add tables and forms to webpages. Other topics introduced will include validating XHTML code, the use of Cascading Style Sheets (CSS) and website publishing. On completion of the Unit the candidate should be able to:

1   Identify front-end and back-end webpage design issues.
2   Create webpages using a markup language.
3   Enhance webpage design with graphics and Cascading Style Sheets (CSS).
4   Identify requirements for website publishing.

Credit points and level: 1 HN credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*)

*SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.

Recommended prior knowledge and skills: Access to this Unit is at the discretion of the centre. It is not necessary for candidates to have prior experience in using the Internet or developing webpages, however, candidates should be familiar with a computer operating system.

Core Skills: There are no opportunities to develop Core Skills in this Unit

Context for delivery: If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

Assessment: Evidence is required that candidates have achieved all Outcomes.

Candidates are encouraged to use the Internet in any research, etc, however, the evidence produced must be the candidate's own words. Assessors should assure themselves of the authenticity of candidate's evidence.

Written and/or oral recorded, performance and product evidence is required which demonstrates that the candidate has achieved the requirements of all of the Outcomes to show that the candidate has appropriate knowledge and understanding of the content of this Unit.

General information for centres (cont)

This Unit should be assessed by the following:

1   Outcome 1 is a closed-book assessment and should take the form of a set of objective questions. This assessment can be combined with the part 1 closed-book assessment for Outcome 2. This assessment must be carried out under supervised conditions.

2   Outcome 2 will be assessed in two parts. Part 1 is a closed-book assessment and should take the form of a set of objective questions. This assessment can be combined with the closed-book assessment for Outcome 1. The combined assessment must cover all knowledge and/or skills for both Outcome 1 and Outcome 2. (An assessor must ensure that a candidate has achieved both outcomes).

     Part 2 is an open-book assessment and should take the form of a practical assessment carried out under supervised conditions and is designed to demonstrate the candidate's knowledge and/or Skills in producing a small website. This practical assignment can combined with the practical assignment for Outcome 3.

3   Outcome 3 will be assessed in two parts. Part 1 is a closed-book assessment and should take the form of a set of objective questions. This assessment can be combined with the Part 1 closed-book assessment for Outcome 4.

     Part 2 is an open-book assessment and should take the form of a practical assessment carried out under supervised conditions and is designed to demonstrate the candidate's knowledge and/or Skills in producing a small website. This practical assignment can be combined with the practical assignment for Outcome 2.

4   Outcome 4 is a closed-book assessment and should take the form of a set of objective questions. This assessment can be combined with the part 1 closed-book assessment for Outcome 3. This assessment must be carried out under supervised conditions.

Assessors should ensure themselves of the authenticity of the candidate's evidence.

The Assessment Exemplar Pack for this Unit provides sample assessment materials including assessor checklists, practical tasks and an instrument of assessment for the knowledge. Centres wishing to develop their own assessments should refer to the Assessment Exemplar Pack to ensure a comparable standard.

Higher National Unit specification: statement of standards

Unit title: Web Development Fundamentals

Unit code: F203 34

The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Identify front-end and back-end webpage design issues

Knowledge and/or Skills

♦ Accessibility and usability
♦ Branding and use of graphics
♦ Content and target audience
♦ Navigation and file naming conventions
♦ Bandwidth and download time
♦ Database connectivity and types of databases

Outcome 2

Create webpages using a markup language

Knowledge and/or Skills

♦ Document structure tags
♦ Page elements
♦ Forms
♦ Identify types of development tools
♦ Code validation and standardised coding practises

Higher National Unit specification: statement of standards (cont)

Unit title: Web Development Fundamentals

Outcome 3

Enhance webpage design with graphics and Cascading Style Sheets (CSS)

Knowledge and/or Skills

♦   Web image formats
♦   Web-safe colours
♦   Horizontal rules
♦   Use of images on webpages
♦   Structuring documents
♦   Cascading Style Sheets

Outcome 4

Identify requirements for website publishing

Knowledge and/or Skills

♦   Compare the use of a service provider to hosting your own website
♦   Client-side and server-side scripting technologies
♦   Connecting webpages to databases
♦   Benefits of Dynamic HTML (DHTML)
♦   Document Object Model (DOM) and its relationship to browsers
♦   E-commerce terms and concepts

Evidence Requirements

Assessment 1 (Outcomes 1 and Outcome 2 (part only))

Evidence of all the Knowledge and/or Skills in Outcomes 1 and 2 will be assessed using a representative sample of series of questions covering the bullet points below:

♦   Identify the importance of accessibility and usability
♦   Identify the importance of branding and the use of graphics for the front-end
♦   Identify the importance of content and audience development
♦   Identify different types of navigation and the correct naming of webpage files
♦   Identify the relevance of bandwidth and download time
♦   Identify the different types of database connectivity and types of databases

Higher National Unit specification: statement of standards (cont)

Unit title: Web Development Fundamentals

Assessment 1 (Outcomes 1 and Outcome 2 (part only)) (cont)

♦ Explain document structure tags
♦ Explain page elements — paragraphs, hyperlinks, tables
♦ Explain forms
♦ Identify types of web development tools:
— web authoring tools, text editors, HTML editors
♦ Describe creating a webpage using a web authoring tool
♦ Identify code validation and standardised coding practises

The assessment will be supervised, controlled and under closed-book conditions and should last no more than 1.5 hour. The instrument of assessment must provide opportunities for the Outcome to be fulfilled by means of sampling across the range of the content of Outcomes 1 and 2. 50% of questions should be related to each Outcome covering a representative sample across each Outcome. This assessment must change on each assessment occasion. Achievement can be decided by use of a 60% cut-off score. An assessor must ensure that a candidate has achieved each Outcome.

Where re-assessment is required it should contain a different sample from the range of mandatory content.

Assessment 2 (Outcomes 2 (part only) and Outcome 3 (part only))

It is recommended that the practical elements of Outcomes 2 and 3 are integrated into one holistic assessment activity, however, these may be assessed individually if barriers are being placed on the learning process through this holistic approach.

The practical assignment should comprise the creation of a functional website comprising a minimum of three webpages. XHTML, or a similar markup language can be used to create the website. An appropriate development tool should be used. Candidates will need to submit all project files in electronic form for marking. It is recommended that this assessment is based around a theme where a candidate could be given a range of themes to choose from or select their own them from a source agreed by the assessor. Where a candidate selects their own theme this must be approved by the assessor.

Candidates will require evidence to provide evidence to demonstrate their Knowledge and/or Skills by showing they can in relation to a given project brief:

♦ Use document structure tags
♦ Apply page elements — at least on instance of each of the following:
— paragraph
— hyperlink
— table
— horizontal rule

Higher National Unit specification: statement of standards (cont)

Unit title: Web Development Fundamentals

Assessment 2 (Outcomes 2 (part only) and Outcome 3 (part only)) (cont)

♦ Apply the <div> tag
♦ Apply at least one style using CSS
♦ Create a form
♦ Insert at least one graphic image
♦ Apply web safe colours
♦ Pages are validated using an appropriate validation tool.
♦ Adhere to current markup language guidelines with regard to good markup practise

This assessment is open-book and should be carried out under supervised conditions.

Assessment 3 (Outcomes 3 (part only) and Outcome 4)

Evidence of all the Knowledge and/or Skills in Outcomes 3 and 4 will be assessed using a representative sample of series of questions covering the bullet points below:

♦ Describe web image formats and techniques
♦ Explain the purpose of web-safe colours
♦ Explain horizontal rules
♦ Explain the use of images including image maps and background images
♦ Explain the use of structuring documents using the <div> tag and CSS
♦ Explain linked, embedded, and inline CSS styles
♦ Compare the use of a service provider to hosting your own website
♦ Identify client-side and server-side scripting technologies
♦ Explain the purpose and process of connecting webpages to databases
♦ Identify the benefits of Dynamic HTML (DHTML)
♦ Describe the Document Object Model (DOM) and its relationship to browsers
♦ Describe e-commerce terms and concepts

The assessment will be supervised, controlled and under closed-book conditions and should last no more than 1.5 hour. The instrument of assessment must provide opportunities for the Outcome to be fulfilled by means of sampling across the range of the content of Outcomes 3 and 4. 50% of questions should be related to each Outcome covering a representative sample across each Outcome. This assessment must change on each assessment occasion. Achievement can be decided by use of a 60% cut-off score.

An assessor must ensure that a candidate has successfully achieved each Outcome when presenting holistic assessment.

Where re-assessment is required it should contain a different sample from the range of mandatory content.

Administrative Information

Unit code: F203 34

Unit title: Web Development Fundamentals

Superclass category: CB

Original date of publication: August 2007

Version: 02 (October 2012)

History of changes:

Version	Description of change	Date
02	Guidance Notes updated to reflect changes in CIW courses.	19/10/12

Source: SQA

Higher National Unit specification: support notes

Unit title: Web Development Fundamentals

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this Unit

This Unit is an optional Unit for the HNC Interactive Media and a mandatory Unit for the PDA (Personal Development Award) Certificate in Web Technologies: Fundamentals. It can be delivered alongside the HN Unit F204 34 *Internet and Network Technology Fundamentals*. It can also be taught as a stand alone Unit.

The Unit is primarily intended to prepare candidates for a junior web developer job role. It is also suitable for individuals who use the web as a business tool and wish to further their knowledge. The Unit can also form the basis for further study towards more advanced job roles in the areas of web design, web administration, web management, or enterprise development.

The Unit contains a mixture of conceptual knowledge and hands-on skills. Labs including real-world scenarios based on a sample website should be used throughout the course to give candidates sufficient practice and guide them in their individual project work. It is recommended that candidates are exposed to a range of web development tools — text editors, HTML editors, web authoring tools (eg Dreamweaver, Frontpage, etc). The version of markup language taught in this Unit, should be current with W3C recommendations. Labs should be complemented by class discussion about real-world skills applications, and updated topics such as project management and the relationship between technology and business operations. There may also be opportunities to introduce candidates to graphics topics, eg how they are created, software used, file formats, etc (subject to validation).

This Unit is part of the PDA in Web Technologies Fundamentals at SCQF level 7 and maps (at the time of writing) to the Certified Internet Web Professional Site Associate module. It also helps to prepare candidates for SHe Associate version 1DO-51B. Candidates who have already achieved this certification and have provided authentic evidence of this will automatically achieve this Unit.

Details can be found at:

http://www.ciwcertified.com/certifications/Web_Foundations_series/sda.php

Guidance on the delivery and assessment of this Unit

Assessments 1 and 3 for this Unit, as detailed in the Evidence Requirements for Outcome 4 should be assessed using a closed-book assessment. Assessment 2 is a practical assignment which should be conducted under open-book but supervised conditions.

The practical assignment should comprise the creation of a small functional website fulfilling specific requirements. Candidates will need to submit all project files in electronic form for marking. The project will be completed in supervised conditions.

Higher National Unit specification: support notes (cont)

Unit title: Web Development Fundamentals

The website must contain a minimum of three webpages which demonstrate various markup language elements covered by the Unit. The pages can be styled using Cascading Style Sheets (CSS). Both the markup language and CSS code must follow web standards. Pages should be validated using either an online tool or in-built features of a development tool. At the time of writing, a recognised on-line validator is: **http://validator.w3.org**

Opportunities for developing Core Skills

There are no opportunities to develop Core Skills in this Unit.

Open learning

If this Unit is delivered by open or distance learning methods, additional planning and resources may be required for candidate support, assessment and quality assurance.

A combination of new and traditional authentication tools may have to be devised for assessment and re-assessment purposes.

For further information and advice, please see *Assessment and Quality Assurance for Open and Distance Learning* (SQA, February 2001 — publication code A1030).

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website **www.sqa.org.uk/assessmentarrangements**.

General information for candidates

Unit title: Web Development Fundamentals

This Unit introduces you to essential development skills in the production of webpages using Extensible Hypertext Markup Language (XHTML), (or to another markup language standard). You will learn to write code manually, as well as use web authoring tools. You will also learn to insert images, create hyperlinks, add tables and forms to your webpages, and use Cascading Style Sheets (CSS). On completion of the Unit you should be able to:

1   Identify front-end and back-end webpage design issues.
2   Create webpages using a markup language.
3   Enhance webpage design with graphics and cascading style sheets.
4   Identify requirements for website publishing.

In addition to the introduction of creating webpages with a markup language, you will gain an introductory knowledge of other topics such as scripting languages and how to connect webpages to databases. Other topics include validating your website markup language, recognising the importance of branding, and implementing fundamental design concepts. You will also identify e-commerce solutions and relate website development to business goals.

Overall, you will be expected to use the knowledge and skills from the Unit to enable you to develop a working website.

In order to complete this Unit successfully you will be required to demonstrate you have achieved success in all four Outcomes. This will be achieved by both closed-book assessment and practical assignment. An assessor may ask you to explain parts of your work to authenticate the evidence.