Higher National Unit specification

General information for centres

Unit title: Web Development: Essential Content

Unit code: F1YY 34

Unit purpose: This Unit is designed to enable candidates to gain knowledge and understanding of website development and apply that knowledge when planning, designing and developing a website with static content to recognised standards.

On completion of the Unit the Candidate should be able to:
1   Describe basic website development fundamentals.
2   Plan and design a website.
3   Develop the layout and content of a website using a markup language.
4   Apply visual consistency to a website using stylesheets.
5   Publish a valid, accessible website.

Credit points and level: 2 HN credits at SCQF level 7: (16 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 will be at the discretion of the centre, however, candidates should have knowledge of the internet and the different categories of websites available. A basic knowledge of a markup language would be beneficial, but is not a requirement. The successful completion of the following awards, ie Higher Computing, NC Digital Media Computing at SCQF level 5 or the NPA in Web Development Fundamentals at SCQF level 5 would be a good foundation for a candidate progressing to this Unit.

Core Skills: There are opportunities to develop the Core Skill(s) of Written Communication (Writing), Written Communication (Reading) and Problem Solving at SCQF level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

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.

General information for centres

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 showing that the candidate has appropriate knowledge and understanding of the content of this Unit.

This Unit should be assessed by the assessment tasks detailed as follows:

1   Outcome 1 is a closed-book assessment and should take the form of a set of questions where the candidate is required to produce evidence of their knowledge of the basic website development fundamentals.
2   Outcome 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 planning and designing a website.
3   Outcome 3 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 the layout and content of a website using a markup language.
4   Outcome 4 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 applying visual consistency to a website using stylesheets.
5   Outcome 5 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 publishing a valid and accessible website.

It is recommended that the assessments for Outcomes 2, 3, 4 and 5 should be integrated into one holistic assessment. The practical assessments within this Unit should be based on the same case study.

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

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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

Describe basic website development fundamentals

Knowledge and/or Skills

♦ Markup languages
♦ Document Type Definitions (DTD)
♦ Stylesheets
♦ Client side scripting

Evidence Requirements

Evidence of all the Knowledge and/or Skills in this Outcome will be assessed using a representative sample covering the bullet points below:

♦ describe the current markup languages. This should include Hypertext Markup Language (HTML), eXtensible Hypertext Markup Language(XHTML), eXtensible Markup Language(XML) and any other current, relevant markup language. The Candidates must describe each, compare them and state the current versions and use
♦ describe the purpose of Document Type Definition(DTD) declarations, otherwise known as Doctype declarations and the importance of accurate DTDs for validation purposes within W3C. This must include DTDs for (X)HTML and the DTD variants of strict, transitional, frameset and any other current relevant variant
♦ describe the purpose and uses of stylesheets including Cascading Style Sheets(CSS) and XSL (eXtensible Stylesheet Language) or XSLT (eXtensible Stylesheet Language Transformations)
♦ describe the purpose of client side web scripting languages within a web document

Evidence for all Knowledge and Skills in this Outcome will be assessed using a representative sample of twenty questions. The assessment will be supervised, controlled and under closed-book conditions and should last no more than 1 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 Outcome 1. This assessment must change on each assessment occasion. Achievement can be decided by use of a 60% cut-off score.

Higher National Unit specification: statement of standards (cont)

Unit title: Web Development: Essential Content

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

Outcome 2

Plan and design a static website

Knowledge and/or Skills

- Site Specification
- Site Navigation
- Page Content Summaries

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can plan and design a website.

A candidate's responses can be judged to be satisfactory where the evidence provided shows the candidate is able to:

- plan and design a website of at least 5 pages by producing a site specification, a site navigation and page content summaries

Assessment Guidelines

See Outcome 5

Outcome 3

Develop the layout and content of a static website using a markup language

Knowledge and/or Skills

- Doctype declaration
- Text
- Images
- Horizontal rules
- Special Characters
- Links
- Tables
- Divs
- Forms
- Form Validation
- Metadata

Higher National Unit specification: statement of standards (cont)

Unit title: Web Development: Essential Content

Evidence Requirements

Candidates will need evidence to demonstrate their Knowledge and/or Skills by showing that they can develop the content and layout of a website using a markup language.

A candidate's response can be judged to be satisfactory where the evidence provided shows the candidate is able to:

♦ write a suitable doctype declaration for the markup language being used
♦ develop the structure and content of a website of at least 5 pages using a markup language
♦ include text, images, internal, external, anchor and email links within the website
♦ include a form that collects, validates and processes data within the website
♦ use divs within the website
♦ use tables within the website
♦ write appropriate metadata

Assessment Guidelines

See Outcome 5

Outcome 4

Apply visual consistency to a website using stylesheets

Knowledge and/or Skills

♦ Style guide
♦ Page layout
♦ Links
♦ Text
♦ Images
♦ Forms

Evidence Requirements

Candidates will need evidence to demonstrate their Knowledge and/or Skills by showing that they can apply visual consistency to a website using a stylesheet.

A candidate's response can be judged to be satisfactory where the evidence provided shows the candidate is able to:

♦ create a style guide that describes all styles used within the website
♦ use stylesheets to design the layout of the website pages which must include positioning of content
♦ use stylesheets to style text, links, tables and form content within the website

Higher National Unit specification: statement of standards (cont)

Unit title: Web Development: Essential Content

Assessment guidelines
See Outcome 5

Outcome 5

Publish a valid, accessible website

Knowledge and/or Skills

- Validate
- Test
- Publish

Evidence Requirements

Candidates will need evidence to demonstrate their Knowledge and/or Skills by showing that they can publish a valid accessible website.

A candidate's response can be judged to be satisfactory where the evidence provided shows the candidate is able to:

- remove all redundant code from the website
- validate the website against the declared DTD
- test the website for basic accessibility
- register a domain name and access a web host
- upload the website using File Transfer Protocol (FTP)
- submit the website to a search engine
- test the website on two browsers, log results and any actions required

The holistic assessment that integrates assessments for Outcomes 2, 3, 4 and 5 should take the form of a web development project. The assessment should be carried out over an extended period.

The candidate should be provided with a realistic client brief which is sufficient enough to allow the candidate to interpret, plan, design, develop, test and publish a website adhering to current accessibility standards achieving all of the Evidence Requirements of Outcomes 2, 3, 4 and 5.

Throughout the development all work must be organised and contained in a production folder.

Assessment Guidelines

It is recommended that this assessment is based around a theme. Candidates could be given a range of themes to choose from or select their own them from a source agreed by the assessor. Where candidates select their own theme this must be approved by the assessor.

Administrative Information

Unit code: F1YY 34

Unit title: Web Development: Essential Content

Superclass category: CB

Original date of publication: August 2007

Version: 03 January 2010

History of changes:

Version	Description of change	Date
02	Outcome 3 — change to Knowledge and Skills and Evidence Requirements in line with QST comments.	24/04/09
03	Rewording of final bullet point in Outcome 3 Evidence Requirements and Outcome 5 Evidence Requirements.	03/02/10

Source: SQA

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

Additional copies of this Unit specification can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre for further details, telephone 0845 279 1000.

Higher National Unit specification: support notes

Unit title: Web Development: Essential Content

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 80 hours.

Guidance on the content and context for this Unit

This Unit has been written in order to allow candidates to develop knowledge, understanding and skills developing websites to recognised standards.

The Unit is at SCQF level 7 and the Unit has been developed as part of HNC Interactive Media award, however, this does not preclude the use of this Unit in other awards where it is appropriate.

This Unit is part of the PDA in Web Development at SCQF level 7 and maps (at the time of writing) to the Adobe Certificate Expert (Dreamweaver) certification.

An up-to-date list of the Adobe Dreamweaver ACE exam topics can be found at:
http://partners.adobe.com/public/ace/main.html.

Outcome 1 is designed to give the candidates knowledge on the importance to the adherence to recognised web standards when designing and developing new web applications as determined by the World Wide Web Consortium **(www.w3c.org)** should be referred to throughout this Unit to support current standards and trends.

The following information is current at the time of writing.

The list that is deemed important material to cover in this Outcome is:

1   Current markup languages in use and the differences between then. XHTML 1.0 and XML are current markup languages in use, but HTML 4.01 is still used. The candidates show know the differences between them and how to declare DTDs for them. The candidate should also be aware of the variations of HTML and XML like Dynamic HTML (DHTML), Wireless Markup Language (WML), MathML, Synchronized Multimedia Integration Language (SMIL) and any other current markup languages in use.
2   What doctype declarations are, how to write them and what they are used for. The variants of strict, transitional and frameset DTDs and when to use each. The candidates should be made aware of any other current and relevant DTDs like WML.
3   Style sheets, CSS1 and CSS2. The reason that CSS was introduced and the advantages of using CSS. Knowledge that CSS can be used to style XML and HTML documents. XSL can also be introduced here, so that the candidate is aware that XSL can be used to transform XML data into HTML/CSS documents on the Web server.
4   The purpose of client side web scripting can be introduced, so that the candidate can be made aware of why interactivity may be added to the client side of websites (eg for form data validation).

Outcome 2 is intended to give the candidate knowledge and/or skills on the first steps to take after receiving a client brief. The importance of this planning and design stage should be stressed.

Higher National Unit specification: support notes (cont)

Unit title: Web Development: Essential Content

It is intended that the site specification include the goal and purpose of the site, the information, products and services the site will offer, the functions that are crucial for the site to be successful and any other functionality, who the target audience is, who maintains the site and what technical considerations must be considered.

The design of the website structure can be achieved using methods such as flow charts, navigation map or mind maps. The content of the pages including the navigation design can be included within storyboards or page content summary sheets. It is envisaged that the candidate may have undertaken a Unit which includes some graphic design and page design principles, so the content summary or storyboards should give an indication of colour, layout, balance and fonts for the website.

Outcome 3 is intended to give the candidate skills in the chosen markup language. As there is no pre-entry skill required, it is envisaged that the language be introduced from the first principles. A propriety package may be used for this, as may a basic text editor, however, if a propriety package is used, it is advisable to introduce the candidates to the source code as well as using the design view. At the end of delivery of this Outcome, if the centre is using XHTML 1.0, the candidate should be able to use at least the following tags: <head>, <title>, <meta>, <body>, <p>, <hr>, <img>, <h1....h6>, <ul>, <li>, <form>, <input>, <table>, <tr>, <td>, <div>, <span>, <a href>.

The aim of Outcome 4 is to develop skills in the use of stylesheets to format and to apply consistency to web pages. If CSS is being used, it is envisaged that the candidate will be able to apply styles by linking, embedding and inline methods. By the end of delivery of this Outcome, the candidate should be able to use at least the following CSS properties: background, text, font, border, padding and positioning. These properties can be applied to page, text, image, form and table element.

Outcome 5 is about providing the candidate with the knowledge and skills to validate and upload an accessible website. The candidate should be able to validate a website to w3c standards as declared in the website DTD. The candidate should be made aware of the simple steps to take to give the website basic accessibility, eg giving all images and media element alternative text, by making all text resizable and by using tables only when really required. Candidates should explore options on how to register a domain name and access a web host to suit the needs of the brief and then uploading the site. Candidates should also be aware of how to get a good search engine rating.

Glossary of Terms:

HTML	Hypertext Markup Language
XHTML	eXtensible Hypertext Markup Language
XML	eXtensible Markup Language
CSS	Cascading Style Sheet
XSL	eXtensible Stylesheet Language
XSLT	eXtensible Stylesheet Language Transformations
DTD	File Transfer Protocol

Higher National Unit specification: support notes (cont)

Unit title: Web Development: Essential Content

Guidance on the delivery and assessment of this Unit

The purpose of this Unit is to develop the candidates' skills so that they can produce a valid functional website within the 80 hours of the Unit.

In the delivery, candidates should have access to propriety web development software, basic text editor for writing source code and internet access, for both reference, registering and uploading websites.

During the holistic project that covers the assessment for Outcomes 2, 3, 4 and 5 the candidate must plan, design and develop in the correct order.

A suggested delivery sequence to this Unit would be the following:

♦ Outcome 1 should be taught and assessed first so the candidate has the underpinning knowledge required for the remainder of the Unit
♦ Outcomes 3 and 4 may be taught in parallel so the candidate relates the structuring with the styling of websites
♦ Outcome 2 can be delivered when the candidate has enough understanding of the development of a website
♦ Outcome 5 is probably best delivered when the candidate has the skills to build a complete website

Outcome 1 assessment may be issued early on in the delivery of the Unit. The assessment should be conducted under closed-book conditions and as such candidates must not be allowed any text books, handouts, Internet access or notes in the assessment. This assessment should be completed within one hour.

Outcomes 2, 3, 4 and 5 may be assessed using a holistic assessment in the form of a project that integrates each of these Outcomes. This assessment requires that the candidate be given a project brief from a real client or issued one from the assessor. The brief should be detailed enough that the finished product meets the project brief and all the Evidence Requirements of Outcomes 2, 3, 4 and 5.

Opportunities for developing Core Skills

There are opportunities to develop the Core Skill(s) of Written Communication (Writing), Written Communication (Reading) and Problem Solving at SCQF level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Open learning

This Unit could be delivered by distance learning that may incorporate some degree of on-line support.

However, it would require planning by the centre to ensure the sufficiency and authenticity of candidate's evidence. Agreements would have to be made to ensure the assessment for Outcome 1 is delivered in the required assessment conditions.

Higher National Unit specification: support notes (cont)

Unit title: Web Development: Essential Content

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: Essential Content

This Unit is designed to introduce you on how to plan, design, develop and publish a website with static content to recognised standards.

You will learn the importance of web standards **(www.w3c.org)**.

You will learn how to produce webpages using a markup language and incorporate them into a website.

You will learn how to create stylesheets and implement these in the development of a website.

You will learn the development stages involved in the creation of a website, from receiving a client brief to actually uploading the website to a web server. These stages include the planning, design, development and testing so that the finished website is valid to recognised standards and has basic accessibility to make it comply with current legislation.

Outcome 1 assessment is made up of questions which need to be answered in class, under closed-book, supervised conditions. This assessment requires you to have an understanding of the main web development fundamentals. It will probably take about an hour to complete.

The other assessment, or assessments, will be a project in which you are required to actually plan, design, develop, test and publish a website from a client brief.

On completion of the Unit you should be able to:

1   Describe basic website development fundamentals.
2   Plan and design a website.
3   Develop the layout and content of a website using a markup language.
4   Apply visual consistency to a website using stylesheets.
5   Publish a valid, accessible website.