



## Higher National Unit specification: general information

**Unit title:** Website Design: Development Technologies

**Unit code:** FW5E 34

**Superclass:** CB

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**Version:** 02

### Unit purpose

This Unit introduces candidates to some of the core client-side and server-side languages, technologies and tools required to create and publish websites. This includes securing and maintaining websites and web servers. Candidates will focus on these factors to produce and publish a website or series of web pages to add to their portfolio.

On completion of the Unit the candidate should be able to:

- 1 Use web mark-up and styling languages to create web pages.
- 2 Use web development tools to create web pages.
- 3 Use client and server side technologies to create and publish web pages.

### Recommended prior knowledge and skills

Access to this Unit is at the discretion of the centre. Candidates should be familiar with a computer operating system and have some knowledge of Mark-up language and web sites. The successful completion of *F203 34: Web Development Fundamentals*, *G902 47: PDA in Web Technologies: Fundamentals*, NC in Digital Media Computing or Web Units at SCQF level 5 or 6 would be a good foundation for candidates progressing to this Unit.

### Credit points and level

1 Higher National Unit 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.*

## General information (cont)

### Core Skills

Achievement of this Unit gives automatic certification of the following:

Complete Core Skills	None
Core Skill component(s)	Critical Thinking at SCQF level 5 Providing/Creating Information at SCQF level 5

There are also opportunities to develop aspects of Core Skills which are highlighted in the Support Notes of this Unit Specification.

### 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

There are two assessments for this Unit.

Assessment 1 combines the knowledge of Outcomes 1–3. This is a closed-book assessment and should take the form of a set of objective questions. This must be carried out under supervised conditions.

Assessment 2 combines the skills of Outcomes 1–3. This is an open-book practical assessment that should be carried out under supervised and unsupervised conditions. Assessors should use methods to ensure themselves of the authenticity of the Candidate's evidence.

## Higher National Unit specification: statement of standards

**Unit title:** Website Design: Development Technologies

**Unit code:** FW5E 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

Use Web Markup and styling languages to create web pages.

#### Knowledge and/or Skills

- ◆ Evolution of Markup language
- ◆ HTML
- ◆ XHTML
- ◆ XML
- ◆ Web page structuring methods
- ◆ Styling web pages
- ◆ Site content

#### Evidence Requirements

The Evidence Requirements for this Outcome are detailed in Outcome 3.

### Outcome 2

Use web development tools to create web pages.

#### Knowledge and/or Skills

- ◆ Web development tools
- ◆ Basic features
- ◆ More advanced features

#### Evidence Requirements

The Evidence Requirements for this Outcome are detailed in Outcome 3.

## Higher National Unit specification: statement of standards (cont)

**Unit title:** Website Design: Development Technologies

### Outcome 3

Use client and server-side technologies to create and publish web pages.

#### Knowledge and/or Skills

- ◆ Client and server-side scripting and technologies
- ◆ HTTP servers and web applications
- ◆ Databases
- ◆ Website publishing and maintenance

#### Evidence Requirements

All the Evidence Requirements for Outcome 1–3 are covered in two assessments. Candidates need to achieve both assessments.

#### Assessment 1

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

##### Outcome 1

- ◆ Explain the origins of X/HTML
- ◆ Explain what mark-up language is, eg its purpose, function, goals, tags, deprecated tags
- ◆ Define the difference between two versions of web mark-up language, eg current against previous version, strict, transitional, frameset, HTML 4.01, HTML 5, XHTML
- ◆ Identify non-standard mark-up, eg proprietary tags and the effect this has
- ◆ Define XML (Extensible Markup Language) and what it can be used for, eg RSS feeds
- ◆ Distinguish XML from other mark-up languages, eg HTML, XHTML
- ◆ Define what a well formed XML document is
- ◆ Identify techniques used for structuring and formatting web pages, eg CSS (embedded, linked, inline), tables, framesets (simple, nested, combined, inline, targeting correctly)

##### (Outcome 2)

- ◆ Compare site development using different types of web development tools, eg text/HTML editors to GUI site management applications.

##### (Outcome 3)

- ◆ Define and contrast client-side and server-side technologies used to create content for web pages, eg CGI scripts, cookies, XML applications, RSS feeds, CAPTCHA, URL aliases

## Higher National Unit specification: statement of standards (cont)

### Unit title: Website Design: Development Technologies

- ◆ Identify common features and uses of a client-side scripting language, eg objects, properties and methods, functions, event driven, object oriented, DOM (Document Object Model), DHTML, pop-up/pop-under windows, rollovers
- ◆ Define Java applet functionality
- ◆ Define secure XML
- ◆ Define elements of a database and their functionality, eg use in web applications, tables, records, fields
- ◆ Identify general database query types, eg SQL statements select, insert, update, delete
- ◆ Identify information types that can be contained in a database, eg X/HTML, images, XML
- ◆ Define at least one type of Database Management System
- ◆ Compare different options for web hosting, eg in-house, external, staging/mock-up servers
- ◆ Identify the purpose of features of web servers, eg software, basic server administration, DNS, creating DNS entries, subdomains, shared domains, ports
- ◆ Identify a security issue relating to a web server or web site, eg attacks (social engineering, denial of service, brute force)
- ◆ Identify a method to secure a web server or web site, eg disabling unnecessary services, applying security patches, updating patch levels, configuring login settings (password strength), setting permissions and rights.

This is a closed-book assessment which should take the form of a set of objective questions. This assessment must be carried out under supervised conditions and should last no more than one hour.

The assessment must consist of 25 questions which sample across the range of Knowledge and/or Skills of the Outcome. The sample must change on each assessment occasion. Candidates must achieve 60% of the overall marks.

### Assessment 2 — Produce web pages

Practical skills for all Outcomes in this Unit can be assessed either by one holistic assessment **or** a series of individual tasks, whichever is more beneficial for the candidate.

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

#### Produce web pages

- ◆ Create web pages using an appropriate web mark-up language and DTD such as HTML, XHTML which consist of:
  - hexadecimal values to specify colours
  - page elements that apply design principles and page layout (eg fonts, space, colours, lines, images)
  - consistent styling and page layout using appropriate methods, eg templates, style sheets, frames (simple, nested, combined, inline), tables, <p> tags, <div> tags
    - an external style sheet

## Higher National Unit specification: statement of standards (cont)

### Unit title: Website Design: Development Technologies

- ◆ Add text, a table, hyperlinks, multimedia content including plug-ins, images, graphics and/or create an image map
- ◆ Create and add a form
- ◆ Create a link to a downloadable file
- ◆ View and validate source code
- ◆ Create pages that comply with accessibility standards, eg WCAG, Section 508
- ◆ Apply relevant SEO techniques including metadata tags and content to influence search engine placement, eg using quality web copy, structuring pages using validated markup, using page titles, using metadata, using on-site and off-site practices

### Use client-side and/or server-side technologies to enhance web site functionality

- ◆ Apply a basic client-side script, eg detect browsers, redirect pages, pre-load pages, confirm user choices, pop-up/under windows.
- ◆ Access an X/HTML object using appropriate methods, eg dot notation
- ◆ Create a rollover image
- ◆ Incorporate a Java Applet, eg animated applet
- ◆ Use XML to create a basic web application (eg Really Simple Syndication [RSS], Atom newsfeeds).
- ◆ Apply a basic server side script, eg to process a form
- ◆ Apply a relevant client or server technology such as cookies, CAPTCHA, URL alias to enhance web site functionality

### Connect a web page to a database

- ◆ Add a search capability to a website using an appropriate tool, eg online
- ◆ Connect a web page to a database

### Publish and maintain the web pages

- ◆ Use a staging/mock-up server to test web pages
- ◆ Perform testing on the web pages (eg functionality, usability, browser compatibility)
- ◆ Publish web pages using FTP
- ◆ Document any changes made to the web pages after testing/publishing, eg using a spreadsheet, version control software
- ◆ Incorporate at least one method to maintain the web pages, eg user feedback, auto and manual link checking)

This is an open-book assessment which can be carried out under supervised and unsupervised conditions. Assessors should use methods to ensure themselves of the authenticity of the candidate's evidence. This can be assessed on an individual or group basis. If a group approach is used, then the workload must be balanced and each member must achieve all the Evidence Requirements.

Candidates should use appropriate tools for creating the pages. GUI features can be used but some hand coding is also preferable. Assessors should use methods to ensure the authenticity of this evidence, eg commenting code, requesting a demonstration.

## Higher National Unit specification: statement of standards (cont)

### Unit title: Website Design: Development Technologies

The media elements don't have to be created by the candidate. Any borrowed content should be verifiably copyright free or have proof of copyright. Sources should be cited.

The last two Evidence Requirements for publishing and maintaining the web pages can be outlined in a brief report stating what methods will be used, with a brief justification, if no maintenance is required or there is not enough time to do this. Candidates could supply an example of these such as a template.

### Assessment Guidelines

Assessment 1 could be assessed at the end of the Unit once candidates have put the knowledge into practice. It could also be broken down into smaller assessments and administered throughout the Unit. If this approach is used then candidates must give no more than one hour to complete the combined assessment tasks.

The practical elements of the three Outcomes can be assessed using a holistic approach or number of different subtasks. These can be based on a brief or scenario. This would be particularly useful if this Unit is being delivered with another web Unit such as *FW5C 34: Website Design: Planning and Design* and/or *FW5D 34: Website Design: Multimedia Content Creation* from the PDA in Web Site Design at SCQF Level 7. This could be assessed as an individual or group project, whereby each member creates the same amount of pages. Instructions for assessment 2 should be issued early on in the Unit.

If a brief or scenario is being used candidates could be given a number of options to choose from, including an option of their own choice. The options would be best if they were based on realistic scenarios. Candidates who are already in the workplace may prefer to create the site/pages relating to their job.

Assessors can provide candidates with a brief, plan and design specification, if they haven't created their own as part of another Unit such as *FW5C 34: Website Design: Planning and Design*. A database and plug-in content/applet should be provided.

It's not necessary to produce a large or fully working website. Instead candidates could produce a small website or a number of pages for a larger website. This could be looked upon more as a protosite. It is recommended therefore that about 3–5 pages are produced per candidate.

Candidates are being assessed on their ability to use the tools and languages properly. Quality therefore is more important than the quantity of evidence produced. Basic tags and styles would be sufficient as evidence of hand coding.

## Higher National Unit specification: support notes

### Unit title: Website Design: Development Technologies

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 one of the mandatory Units for the PDA in Website Design at SCQF level 7 and an optional Unit for the HNC Interactive Media (G8LT 15) and HND Interactive Media (GE9Y 16). There are a number of Units that can be cross assessed and delivered with this Unit, particularly from these Group Awards (see Guidance on Delivery and Assessment). This can also be taught as a stand-alone Unit. This Unit also maps to elements of the CIW (Certified Internet Web Professional) Web Design Specialist course.

The PDA in Website Design at SCQF level 7 focuses on how to manage the website development process, the role of the web designer, site design from several perspectives such as users and clients, business goals, content creation, developing web pages using client and server technologies, publishing and marketing a web site. Candidates take on the roles of web designer, developer and project manager. The end result is that candidates have produced prototype web pages for inclusion in their portfolio. The PDA Website Design at SCQF level 7 maps to CIW (Certified Internet Web Professional) Web Design Specialist course — further details can be found at the end of this section.

You must bear in mind that these are guidance notes and the examples in the Evidence Requirements are based on technologies, concepts and information at the time of writing. Delivery lecturers and assessors must ensure that they adhere to technologies and information that is relevant at the time. The term ‘technologies’ refers to languages, software and hardware used to create web pages.

The knowledge and skills should be taught at an introductory level. The additional information in these guidance notes is intended to clarify the Evidence Requirements further. This information is not exhaustive but the scope of content shouldn’t go much beyond this.

Candidates should be made aware early on that work produced in this Unit can form part of their web design portfolio therefore the common features of such should be encouraged and the importance of a portfolio should be discussed. Whilst not an essential part of the Unit the application of design principles, accessibility and usability should be used in examples encouraged.

This Unit introduces candidates to some of the fundamental languages and tools required to create and publish web sites. While Outcome 1 starts at an introductory level it is preferable that candidates already have some basic understanding of markup language for web page creation. The precursor Unit *F203 34: Web Development Fundamentals* allows for more coverage of the basics of markup language.

## Higher National Unit specification: support notes (cont)

**Unit title:** Website Design: Development Technologies

### Outcome 1

Teaching should move on very quickly from the basics of HTML to concentrate on the different versions of mark-up for web particularly XML (eXtensible Markup Language). The history of mark-up should be discussed briefly so that candidates gain a good understanding of GML (Generalised Markup Language), SGML (Standard Generalised Markup Language) and how XML and ultimately web mark-up languages have evolved from these.

It is expected that Candidates will gain a good understanding of the basics of mark-up language in Outcome 1 whereby they are competent at using fundamental tags, adding common page elements and basic CSS (Cascading Style Sheets). They should be encouraged to hand code these. A text editor such as Notepad would be sufficient for teaching this Outcome, however there is nothing to prevent Centres from using the chosen authoring tool for Outcomes 2 and 3 at this stage.

### Outcome 2

In Outcome 2 candidates should be exposed to different tools used for the creation of web pages (preferably 2 or 3). The emphasis should be on web authoring tools and how these compare to HTML and text editors. These tools are at the discretion of the centre. As a guide two tools could be web authoring tools such as Adobe Dreamweaver and Microsoft Expression Web and one could be an HTML editor such as Notepad ++, Kompozer, OpenWebSuite, Firebug. It may also be useful to start off looking at a text editor such as Notepad, if this wasn't used in Outcome 1.

Candidates should gain some experience of each so that they can weigh up the pros and cons. It is important that candidates see the correlation of how code is automatically generated by using authoring tools, eg *insert>table*.

### Outcome 3

Outcomes 1 and 2 should prepare candidates for the more advanced technologies in this Outcome. Again these technologies are only required to be taught at an introductory level so that candidates gain a general understanding and basic knowledge and skills (there are other Units in the SQA curriculum which cover these more in-depth). Hand coding should be encouraged where possible but it is also equally important that candidates are aware of how to use in-built tools to apply features. By the end of the Outcome candidates should feel competent enough to upload web pages, select a suitable web host, apply basic client and server-side technologies, be aware of aspects of security and the basics of site maintenance.

A client-side language such as JavaScript and server-side scripting languages such as PHP, ASP, JSP, Perl would be relevant for this Outcome. Only one from each category needs to be taught for the practical elements. In the introduction to client-side scripting any other current and relevant technologies should be mentioned, eg ECMAScript, DHTML, DOM. Some of the disadvantages of certain client-side features such as pop-up/pop-under windows should be reviewed.

Candidates should be taught how to set cookies using client-side scripting and the purpose of having these on a website. This should extend to how these are used by the web server, state maintenance and using the browser to enable, disable and delete them.

## Higher National Unit specification: support notes (cont)

### Unit title: Website Design: Development Technologies

A brief overview of plug-ins and Java Applets is required. An applet, eg animation and plug-in content can be provided to candidates to insert into a web page. They are not required to produce these.

Discussion of XML should introduce the fundamental purpose, security, encryption (W3Cs XML Encryption Syntax), rules for well-formedness, browser support and viewing on the web (brief mention of XSLT). Examples should also look at external sources such as syndicated feeds, the benefits, how syndication is used to share data amongst websites, feed formats (RSS and ATOM), aggregators, scraping, online feed-burning services and management providers (Google Feedburner, FeedBlitz, AWeber) and how feeds can be applied to other formats, eg e-mails. The basic elements of the code for feed formats should be reviewed in examples, eg <title>,<link>,<description>, <author>, <id>, <summary>.

Databases should include the purpose, basic elements, different types of DBMS (Database Management System), eg flat-file, relational, multidimensional and also tools, products and programs (Oracle, Microsoft SQL Server). Technologies and protocols for storing and accessing data such as Open Database Connectivity (ODBC), Java Database Connectivity (JDBC), ISAM (Indexed Sequential Access Method), OLAP (Online Analytical Processing), VSAM (Virtual Sequential Access Method), ADO (ActiveX Data Objects) should also be covered. A basic overview of Structured Query Language (SQL) and the four main queries (SELECT, INSERT, UPDATE, DELETE) would also be pertinent.

The practical element of server-side scripting should cover something basic such as connecting a Web page to a database to select/add a record or a login form. Candidates can hand code this or use tools that come with the authoring tool. The database should be provided for the candidate.

In terms of adding a search capability to a website, the Unit only requires to cover how this can be done by using online tools such as Google's Custom Search Engine and Wrensofts Zoom Search Engine then integrated using relevant features of a web authoring tool.

If CAPTCHA is being covered, an online tool such as <http://www.SnapHost.com> would be relevant. Likewise <http://tinyurl.com> would be a useful site if discussing how to create a URL alias.

Publishing and maintaining websites should look at the purpose of web servers, the role of port 80, what the Domain Name System (DNS) is including subdomains and shared domains, testing sites, the role of a staging/mock server and hosting options (in terms of cost, speed, reliability). Common server software such as Apache and IIS (Microsoft Internet Information Services) could be mentioned. This should then progress to looking at different methods for publishing Web pages, eg FTP client, using in-built publishing tools.

The importance of site maintenance and documenting changes should be emphasised. Methods and tools to do this such as analysing log files, user feedback, updating and redesigning sites, manual/automatic link checking, keeping backups of old files and version control software should be covered. It would be pertinent to mention that version control software isn't always necessary and that changes can be recorded using a simple spreadsheet or word processed document.

## Higher National Unit specification: support notes (cont)

### Unit title: Website Design: Development Technologies

A brief overview of security should cover causes such as social engineering, Denial-of-Service (DOS) attacks, Brute-force attacks and basic methods of prevention — strong passwords, disabling unused services on a server, eg applying a firewall to block access to ports, security patches and restricting access.

#### Mapping to CIW Web Design Specialist

This Unit maps to elements of the CIW Web Design Specialist course. At the time of writing the course covers:

- ◆ Website Development Essentials (such as the site development process, customer expectations, and ethical and legal issues in web development)
- ◆ Web Design Elements (such as aesthetics, the site user's experience, navigation, usability and accessibility)
- ◆ Basic Web Technologies (such as basic Hypertext Mark-up Language [HTML])\*
- ◆ Extensible HTML [XHTML] and extended technologies, image files, GUI site development applications, site publishing and maintenance)\*
- ◆ Advanced Web Technologies (such as multimedia and plug-in technologies, client-side and server-side technologies, and web databases)\*

This Unit relates to the last 3 parts\*. CIW Web Design Specialist consists of 34 lessons. The Outcomes in this Unit map to the following lessons:

- ◆ Outcome 1 — Lessons 12–16 (16 in part)
- ◆ Outcome 2 — Lessons 17–23
- ◆ Outcome 3 — Lessons 30–34

The assessments can help to prepare candidates for part of the CIW Web Design Specialist exam. For more information about CIW Web Design Specialist certificate visit [http://www.ciwcertified.com/Certifications/Web\\_Design\\_Series/design.php](http://www.ciwcertified.com/Certifications/Web_Design_Series/design.php)

At the time of writing candidates who have already achieved the CIW Web Design Specialist qualification can be automatically credited for the PDA Web Site Design, provided they produce the relevant proof of certification from CIW.

#### Guidance on the delivery and assessment of this Unit

It is recommended that the Outcomes are delivered in their specified order as the knowledge and skills build on each other. It would be possible to teach candidates about how to use the tools in Outcome 2 alongside the languages covered in Outcome 3. This may help them to understand the languages better.

As this Unit is largely practical in nature candidates should be exposed to a lot of demonstrations and formative exercises throughout this Unit.

## Higher National Unit specification: support notes (cont)

### Unit title: Website Design: Development Technologies

It is recommended that all the examples given in the Evidence Requirements are taught. candidates should be encouraged to use as many of the knowledge and skills that they have learned in the Unit and develop these further. By the end of the Unit, it is expected that candidates can clearly demonstrate their knowledge and skills of using the languages at a fundamental level. They can also apply other features beyond those required.

It may be best to start teaching the chosen development tool at the beginning of the Unit then compare this with other tools later on. Alternatively candidates could be exposed to the different tools in Outcome 2 from the start of the Unit. A GUI editor or web authoring tool is likely to be more suitable for the practical assessment particularly for applying the more advanced features, as time is not likely to allow candidates to grasp creating the complex scripting which is usually required for these.

It is also recommended to teach candidates how to upload to a web server early on. Candidates could use their own web host or one provided by the centre.

#### Assessment 1

This can be delivered as one assessment or split up into smaller assessments. If the latter approach is used the combined assessment tasks shouldn't take more than one hour. This assessment can be delivered at any suitable point in the Unit. Scenario based questions are encouraged where possible.

#### Assessment 2

Instructions for this assessment should be issued early on in the Unit to give candidates time to plan and develop the pages. Assessors can provide candidates with a plan and design specification, if they haven't created their own as part of another Unit such as *Website Design: Planning and Design*. A database and plug-in content/applet should be provided.

The following table provides a suggested delivery schedule for the Unit:

Activity	Tool/technologies/software	Hours
Outcome 1	Intro to one development tool	8
Outcome 2	Gain experience of other tools	10
Outcome 3	Focus on chosen tool	12
Assessment	Focus on chosen tool for practical tasks	10

Centres may also opt to focus on the chosen delivery tool from the start of the Unit.

#### Delivery with the PDA Web Site Design

There is no definitive order that the three Units should be delivered in. The following suggestion is the most natural order of delivery if the one project is being used across the three Units:

- 1 Website Design: Planning and Design
- 2 Website Design: Multimedia Content Creation
- 3 Website Design: Development Technologies

## Higher National Unit specification: support notes (cont)

**Unit title:** Website Design: Development Technologies

It may however, be preferable to deliver Website Development alongside the other Units as candidates are generally keen to start learning practical skills from the start of a course as opposed to knowledge of planning and design:

<b>Primary Unit</b>	<b>Delivered alongside:</b>
Website Design: Development Technologies	Website Design: Planning and Design
	Website Design: Multimedia Content Creation

This example can be adapted for any of the three Units. The order of delivery should be based on what is most beneficial for candidates.

## Higher National Unit specification: support notes (cont)

**Unit title:** Website Design: Development Technologies

### Cross assessment/delivery opportunities with other Units

As stated earlier there are some similarities between this Unit and others in the SQA curriculum particularly those in the HNC/D Interactive Media framework. These are listed in the order of most relevance:

Code	Title	Cross assess/deliver with FW5E 34
F1YY 34	Web Development: Essential Content	All. This covers less about applications and server side but more about basic page elements and CSS. A good precursor Unit.
F200 34	Web Development: Complex Content	All. This has some differences, eg planning, CSS media accessing remote sites but not server side technologies.
DF60 35	*Internet: Web Development	All. Outcomes 2–4. Outcome 1 uses a short response instead of object assessment.
D76P 35	Software Development: Developing for the World Wide Web	This is more advanced though some practical elements can be used as a basis.
DH32 35	*Software Development: Developing for the World Wide.	
F6C2 35	Web Development: Dynamically Generated Content	
F6C4 35	Web Development: Producing a Data Driven Website	The same as the previous three Units. This is a project with no knowledge based assessment.
DE10 35	*e-Learning: Production: Website Development	Outcome 2. This covers basic web development not CSS or server-side technologies. It could be used as a basis. Outcomes 1, 3 & 4 relate to <i>FW5C 34: Website Design: Planning and Design</i> .
DV5M 34	* Web Design: An Introduction	Part of Outcome 1 and all of Outcome 3, which is less complex.

\*Not in the framework for HNC (G8LT 15) and HND Interactive Media (GE9Y 16)

## Higher National Unit specification: support notes (cont)

### Unit title: Website Design: Development Technologies

There are some differences between these and this Unit. Details of how these exactly map to the Unit can be found in the arrangements document for the PDA Website Design at SCQF level 7.

There are also some opportunities to cross deliver/assess this Unit with elements of Units from HNC/D Interactive Media such as *F1VV 34: User Interface Design, Interactive Media: Authoring, Designing and Developing an Interactive Media Product*. Any Units that involve developing an application could essentially be considered.

Since the Components of Critical Think and Providing/Creating Information at SCQF Level 5 are embedded in this Unit, it is strongly recommended that you follow the assessment guidelines given. If you wish to use a different assessment model, you should seek prior verification of the assessment instrument(s) you intend to use to ensure that the Core Skill is still covered.

### Open learning

This Unit could be delivered by open-learning. However, it would require planning by the centre to ensure the sufficiency and authenticity of candidate evidence. Arrangements would have to be made to ensure that Assessment 1 is delivered in a supervised environment under controlled conditions.

Assessment 2 can be submitted electronically. Assessors should use methods to ensure authenticity of candidate evidence, for example telephone interviews.

For information on open learning arrangements, please refer to the SQA guide *Assessment and Quality Assurance of Open and Distance Learning* ([www.sqa.org.uk](http://www.sqa.org.uk))

### Opportunities for developing Core Skills

This Unit has the Problem Solving component Critical Thinking and the Information and Communication Technology component Providing/Creating Information embedded in it. This means that when the candidates achieve the Unit, their Core Skills profile will also be updated to show they have achieved Critical Thinking and Providing/Creating Information at SCQF level 5.

There are opportunities to develop the Core Skill of *Problem Solving* (Critical Thinking and Planning and Organising) to manage the workload and work to a plan, *Working with Others* (Working Co-operatively with Others) if a team approach is used and *Information and Communication Technology* and at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skill components.

*Problem Solving* could be developed through planning and organising tasks for creating the web pages. Working in a Project Team could be developed if a team approach is used. *Information and Communication Technology* could be developed through using a range of equipment and software to present information, securing and managing data and carrying out research throughout the Unit.

## **Higher National Unit specification: support notes (cont)**

**Unit title:** Website Design: Development Technologies

### **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](http://www.sqa.org.uk/assessmentarrangements)

## History of changes to Unit

Version	Description of change	Date
02	Core Skills Components Critical Thinking and Providing/Creating Information at SCQF level 5 embedded.	28/11/11

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## General information for candidates

### Unit title: Website Design: Development Technologies

This Unit introduces you to some of the core client-side and server-side languages, technologies and tools required to create and publish websites. This includes securing and maintaining websites and web servers. You will focus on these factors to produce and publish a website or series of web pages to add to your portfolio.

On completion of the Unit you should be able to:

- 1 Use web mark-up and styling languages to create web pages.
- 2 Use web development tools to create web pages.
- 3 Use client and server-side technologies to create and publish web pages.

The Unit starts by focussing mainly on XHTML and XML then progresses to the basics of using client-side scripting such as JavaScript to enhance Web pages and working with basic server-side scripts to connect to a database. You will look at and compare a few different types of development tools such text editors and web authoring tools, then focus on one to produce a series of web pages. Online tools for adding search features and enhancing websites will also be covered. The focus is on using tools as opposed to learning complex scripts.

The Unit finishes by looking at the different options for uploading, hosting and maintaining sites including the main security issues such as Denial-of-Services (DOS) attacks and basic methods of securing sites.

There are two assessments that combine the three Outcomes. Assessment 1 is a series of objective questions based on the knowledge of the Unit. Assessment 2 is a practical assignment that can be carried out individually or as a larger assignment in a group. If a group approach is used each group member must achieve all the Evidence Requirements. You will be required to create, test and publish some web pages which can be used as part of your portfolio. You will be provided with a database and add-on content to help you carry out this assessment.

This Unit is one of three Units for the PDA in Website Design. It also maps to elements of the CIW (Certified Internet Web Professional) Web Design Specialist course and can help you to prepare for that exam. If you already have this CIW qualification you can be automatically credited for the PDA if you provide authentic proof from CIW.