



Higher National Unit specification

General information for centres

Unit title: Internet: Web Development Standards and Legislation

Unit code: F1VX 34

Unit purpose: This Unit will look at current standards in relation to the development of accessible web applications. A candidate will investigate current legislation and standards in relation to this as well as looking at design principles that should be adopted to comply with current legislation. A candidate will also validate content to appraise the level of compliance to accessibility and usability principles.

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

- 1 Describe accessibility legislation and industry Codes of Practice that apply to web development.
- 2 Describe current standards and/or guidelines in relation to web accessibility issues.
- 3 Describe design principles in relation to accessible content of a given brief.
- 4 Evaluate content to adhere to and use current accessibility guidelines.

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 will be at the discretion of the centre, however it is recommended that candidates should have previous experience of studying interactive media at Higher National level. This Unit is primarily intended for candidates who propose to follow a career, or are following a career, as web developers or multimedia professionals and who require an understanding of the professional responsibilities of such employment.

Core Skills: There are opportunities to develop aspects of the Core Skill(s) of Written Communication and Problem Solving at SCQF level 7 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.

General information for centres (cont)

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

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

Written and/or oral recorded 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.

Outcome 1 should be assessed by a representative sample of 10 extended response questions to provide candidate answers of in the region of 150 words for each question.

Outcome 2 and 3 should be assessed by a report of approximately of 1500 words covering all Knowledge and Skills for Outcomes 2 and 3. A case study or appropriate workplace situation can be used to generate evidence for this report. The case study will consist of:

- ◆ an accurate and clear description of the differences between standards and legislation in the development of accessible web content
- ◆ the role that professional institutions play in setting up accessibility guidelines for web developers
- ◆ an overview of three of the main accessibility guidelines
- ◆ an accurate and clear evaluation of at least six Web Content Accessibility Guidelines (WCAG) that must be adhered to in the development of web content within the context

It is recommended that a candidate be provided with the case study early in the delivery of the Unit in order to familiarise themselves with the information. If a workplace situation is used the assessor should ensure that there are sufficient opportunities available for the candidate to complete all the Evidence Requirements for the report. Outcome 4 should be assessed by means of practical validation and evaluation tasks using supplied web content.

Assessors should assure themselves of the authenticity of each candidate's submission. 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.

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 accessibility legislation and industry Codes of Practice that apply to web development

Knowledge and/or Skills

- ◆ Description of web accessibility
- ◆ Relationship between accessibility and usability
- ◆ Benefits of accessible design to stakeholder groups
- ◆ Current legislation and codes of practice in relation to disability discrimination, special educational needs and Web Content Accessibility Guidelines (WCAG)
- ◆ Implications of failure to comply with legislation

Evidence Requirements

Evidence for all the Knowledge and/or Skills in this Outcome should be assessed using a representative sample of 10 objective test questions to provide candidate answers of approximately 150 words to each question. The questions presented must change on **each** assessment occasion. Centres must cover all Knowledge and Skill headings, however, at least six of the objective test questions should cover legislation and guidelines in relation to accessibility.

Assessment must be undertaken in supervised conditions and is open-book. A candidate must complete this assessment within 90 minutes. Candidates can bring to the assessment event any notes, textbooks, handouts or other material.

Assessment Guidelines

In addition to UK legalisation candidates should also be made aware of worldwide accessibility laws.

Higher National Unit specification: statement of standards (cont)

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Outcome 2

Describe current standards and/or guidelines in relation to web accessibility issues

Knowledge and/or Skills

- ◆ Differences between standards and legislation
- ◆ Role of professional institutions in setting web standards and/or guidelines
- ◆ Accessibility guidelines in relation to content, authoring tools and user agents

Evidence Requirements

Details of the Evidence Requirements are given under Outcome 3

Outcome 3

Describe design guidelines in relation to accessible content of a given brief

Knowledge and/or Skills

Web Content Accessibility Guidelines (WCAG) covering:

- ◆ Images
- ◆ Imagemaps
- ◆ Text
- ◆ Multimedia
- ◆ Hypertext Links
- ◆ Language
- ◆ Page Organisation
- ◆ Graphs and Charts
- ◆ Scripts, applets and plug-ins
- ◆ Frames
- ◆ Tables
- ◆ Device Independence

Evidence Requirements

The candidate's Knowledge and/or Skills for Outcomes 2, and 3 must be demonstrated in the evidence generated. The candidate should produce a report of approximately 1500 words covering:

- ◆ an accurate and clear description of the differences between standards and/or guidelines and legislation in the development of accessible web content
- ◆ the role that professional institutions play in setting up accessibility guidelines in web development
- ◆ an overview of three of the main accessibility guidelines, including accessing conformance to these within the context of the given case study
- ◆ an accurate and clear evaluation of at least six WCAG guidelines that must be adhered to in the development of web content within the context of the given case study

Higher National Unit specification: statement of standards (cont)

Unit title: Internet: Web Development Standards and Legislation

Assessment Guidelines for Outcomes 2 and 3

This assessment is open-book and should be prepared under supervised conditions. Assessors should assure themselves of the authenticity of each candidate's submission.

For Outcome 2 and 3 the report must make reference to the following:

- 1 The difference between commonly adopted standards, legislation and their application to developing accessible web content.
- 2 The role of the World Wide Web Consortium (W3C) in hosting the Web Accessibility Initiative (WAI) to develop guidelines and resources to help make the Web accessible to people with disabilities. The WAI five areas of work; ensuring that web technologies support accessibility, developing guidelines for accessibility, improving tools to evaluate and repair web accessibility, developing materials for education and outreach, coordinating with research and development, and mode of operating.
- 3 Accessibility guidelines in relation to; Web Content Accessibility Guidelines (WCAG), Authoring Tool Accessibility Guidelines (ATAG), User Agent Accessibility Guidelines (UAAG). Whilst there is no requirement in this Outcome to access candidate knowledge of each of the checkpoints within these three guidelines, candidates should be able to understand the general principles within each set of guidelines, levels of priority, accessing conformance and the context in which each guideline should be applied.
- 4 Web content accessibility guidelines should be sampled from:
 - ◆ Images – Use of *alt* attribute to describe the function of each visual
 - ◆ Imagemaps – Use of client-side imagemaps and text for hotspots
 - ◆ Text– Relative sizing, colour, use of cascading style sheets (CSS)
 - ◆ Multimedia – Provision of captioning and transcripts for audio content, description of video content
 - ◆ Hypertext Links – Use of text that makes sense when read out of context eg avoid 'click here'
 - ◆ Language – Use of *lang* and *xml:lang* attributes to identify the natural language of pages and any language changes to aid assistive technologies
 - ◆ Page Organisation – Use of headings, lists and consistent structure, grouping of related data. Use of cascading style sheets (CSS) for layout and style
 - ◆ Graphs and Charts – Summarise data, use of the *longdesc* attribute
 - ◆ Scripts, applets and plug-ins – Provision of alternative content in case active features are inaccessible or unsupported
 - ◆ Frames – Use of *noframes* and meaningful page titles
 - ◆ Tables – Make line-by-line reading sensible, summarising table contents
 - ◆ Device Independence – Design content for use with preferred method of input/ output eg voice input

Higher National Unit specification: statement of standards (cont)

Unit title: Internet: Web Development Standards and Legislation

Case Study

The case study should be given to candidates, as soon as possible, after the start of the Unit delivery to allow time for the assimilation of information by candidates. During the time between the distribution of the assessment task instructions and the completion date, assessors may answer questions, provide clarification, guidance and reasonable assistance. The assessor should encourage discussion of the case study in relation to the main areas of study throughout the Unit, ie the role of professional institutions, development of current and emerging standards, the application of these standards, etc. Where candidates have the opportunity to generate the evidence with reference to their own workplace rather than a case study they may do so. It will be necessary for the assessor to confirm that their workplace will provide sufficient opportunity to discuss the main areas of study.

Outcome 4

Evaluate content to adhere to and use current accessibility guidelines

Knowledge and/or Skills

- ◆ Preliminary evaluation
- ◆ Evaluate conformance to accessibility standards
- ◆ Use of web accessibility tools

Evidence Requirements

Candidates will need evidence to demonstrate their knowledge and/or skills by showing that they can carry out a preliminary evaluation of a minimum of three representative pages of a website, carry out the evaluation and assignment of the level of conformance to accessibility standards, and use web accessibility evaluation tools.

In carrying out the preliminary evaluation candidates should examine a representative sample of pages from an appropriate website supplied by the assessor. Candidates should also be encouraged to examine pages using assistive technology and/or alternative browsers.

Candidates should validate mark-up including syntax and style sheets using at least **two** validation services, eg HTML Validation Service, CSS Validation Service. Validation should be carried out on **both** a representative sample of pages and across an entire website.

The level of conformance to current accessibility guidelines should be measured. The process of evaluating conformance should be carried out manually and with the aid of at least **two** web accessibility evaluation tools, eg Bobby, InFocus.

Candidates are required to produce a portfolio of evaluation results for all Knowledge and/or Skills. This may take the form of an evaluation log, pro-forma or observation by the assessor.

If a log is used then this should show that the candidate has completed all the tasks. An assessor must endorse each candidate log together with the candidate with each of their names, signatures and the relevant date(s).

Higher National Unit specification: statement of standards (cont)

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If an observation checklist is used then the assessor will record that all the tasks have been undertaken correctly by the candidate. An assessor must endorse each checklist with the candidate's name, their name, signature and date.

Assessment Guidelines

The assessment must be completed under supervised, open-book conditions.

Administrative Information

Unit code: F1VX 34

Unit title: Internet: Web Development Standards and Legislation

Superclass category: CB

Original date of publication: August 2007

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History of changes:

Version	Description of change	Date

Source: SQA

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Higher National Unit specification: support notes

Unit title: Internet: Web Development Standards and Legislation

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 primarily intended to provide candidates with the knowledge they will require in order to function effectively in professional web development and multimedia computing. In the modern professional environment it is necessary that professionals in this area can understand and interpret the common standards and regulatory obligations that exist within the industry in which they operate. Hence, the Unit concentrates on accessibility legislation and web standards in relation to this area. Although the Unit is expressed in generic terms, wherever possible, it should be related to organisations, institutions, companies and situations which are familiar to candidates.

There are four main areas of study:

- ◆ The industry codes of practice and legislation that have been established to apply to accessible design in web development. This legislation will include, eg UK – (Disability Discrimination Act 1995, Special Educational Needs and Disability Act 2001), US – (Section 508, Rehabilitation Act 1973), Australia – (Disability Discrimination Act 1992).

The industry codes of practice will be in relation to accessibility issues that apply to web developments.

- ◆ The difference between commonly adopted standards and/or guidelines, legislation and their application to developing accessible web content. The role of the professional institutions in setting web standards and/or guidelines particularly the WC3 in hosting the WAI to develop guidelines and resources to help make the Web accessible to people with disabilities. Accessibility standards that are currently in use and those that are emerging or evolving in particular the Web Content Accessibility Guidelines 1.0, and Web Content Accessibility Guideline 2.0 (WCAG), Authoring Tool Accessibility Guidelines (ATAG), User Agent Accessibility Guidelines (UUAG).
- ◆ The design guidelines in relation to accessible content and their application within the web development and/or multimedia context in particular WCAG.
- ◆ The manual and automated mechanisms and procedures in place to validate and evaluate accessible content including assigning a level of conformance to accessibility guidelines.

It should be noted that throughout the Unit the term standards is used interchangeably with guidelines and although a standard would imply a repeatable, measurable and testable specification that can be used as a normative technical requirement, in the case of accessibility, guidelines such as WCAG have been adopted as an industry standard and, therefore, in the context of this Unit have been referred to as standards. Whilst current standards relate to WCAG 1.0 there are other newly emerging standards that candidates should be encouraged to demonstrate the knowledge of where appropriate throughout the course of the Unit.

Higher National Unit specification: support notes (cont)

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Guidance on the delivery and assessment of this Unit

This Unit is likely to form part of a Group Award, which is primarily designed to prepare candidates for employment in a web development or multimedia computing role. This Unit requires the candidate to be able to demonstrate a knowledge and understanding of professional issues relating to web development. The use of candidate-centred, resource-based methodologies should be as extensive as possible to promote independent study. Visits to local industry or visits by guest speakers could be used to encourage the candidate to see the role of the professional and appreciate the application of the theory and practical elements introduced in this course to industry practice.

It is recommended that this Unit is assessed by three assessments. Outcome 1 should be a closed-book objective test assessment, Outcome 2 and 3 should be assessed by one report in approximately 1500 words covering all Knowledge and Skills. Outcome 4 may be assessed by means of practical validation and evaluation tasks using supplied web content.

In Outcome 1 suggested, and current, legislation under the Knowledge and Skills areas may include the following:

- ◆ UK — Disability Discrimination Act 1995
- ◆ UK — Special Educational Needs and Disability Act 2001
- ◆ US — Section 508, Rehabilitation Act 1973
- ◆ Australia — Disability Discrimination Act 1992
- ◆ Any other relevant current legislation

Accessibility guidelines should relate to WCAG 1.0, however, centres may wish to assess candidates on the most current version of these guidelines. Alternatively, centres may wish to draw comparison with each version of the guidelines as a means of appraising the criteria to which web content must conform to accessible design guidelines.

The Unit should be delivered in a way that enables candidates to appreciate its relevance to the occupational area of web development and multimedia computing.

Opportunities for developing Core Skills

The opportunities to develop aspects of the Core Skill of Written Communication (writing) are available throughout all Outcomes. Problem Solving can be developed in Outcome 4 where students will be engaged in the review and evaluation of websites for accessibility compliance. There is no automatic certification of Core Skills or Core Skills components.

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 particularly for Outcome 1 where the closed-book assessment should be delivered in a supervised environment. A combination of new and traditional authentication tools may have to be devised for assessment and re-assessment purposes.

Higher National Unit specification: support notes (cont)

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Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).

General information for candidates

Unit title: Internet: Web Development Standards and Legislation

This Unit is designed to enable you to recognise the issues affecting professionals working as web or multimedia developers in the preparation of accessible web content. In order to function effectively the professional needs to be able to understand the working environment with regards to current legislation. They also require the technical knowledge to perform the web development tasks within their profession. This Unit will enable you to gain an appreciation of legislative changes in relation to accessible design and their application within the context of web development or multimedia. You will be expected to apply much of the theory of web standards to workplace or case study situations throughout the duration of this Unit.

There are four Outcomes in this Unit and upon completion you should be able to:

- 1 Describe accessibility legislation and industry Codes of Practice that apply to web development
- 2 Describe current standards and/or guidelines in relation to web accessibility issues
- 3 Describe design principles in relation to accessible content of a given brief
- 4 Evaluate content to adhere to and use current accessibility guidelines

In **Outcome 1**, you will learn about legislation that has been established relating to accessible design (Disability Discrimination Act 1995, Special Educational Needs and Disability Act 2001) not only within the UK but also worldwide (eg US — Section 508, Rehabilitation Act 1973, Australia – Disability Discrimination Act 1992). You will also learn about industry codes of practice in relation to accessibility that apply to web development.

In **Outcome 2**, you will learn about the difference between commonly adopted standards, legislation and their application to developing accessible web content, the role of the professional institutions in setting web standards, accessibility standards that are currently in use and those that are emerging or evolving in particular the Web Content Accessibility Guidelines 1.0, and Web Content Accessibility Guideline 2.0 (WCAG), Authoring Tool Accessibility Guidelines (ATAG) and User Agent Accessibility Guidelines (UAAG).

In **Outcome 3**, you will learn about design guidelines in relation to accessible content and their application within the web development and/or multimedia context.

In **Outcome 4**, you will learn about the manual and automated mechanisms and procedures in place to validate and evaluate accessible content including assigning a level of conformance to accessibility guidelines.