-SQA-SCOTTISH QUALIFICATIONS AUTHORITY

HIGHER NATIONAL UNIT SPECIFICATION

GENERAL INFORMATION

-Unit Number-   **D4FB 34**

-Legacy Code-   **8560247**

-Superclass-   **CE**

-Title-   **PUBLISHING ON THE INTERNET**

GENERAL COMPETENCE FOR UNIT: Producing pages for publishing on the World Wide Web using appropriate hardware and software.

OUTCOMES

1.   investigate the characteristics of existing pages on the World Wide Web;

2.   describe hardware and software facilities for producing pages on the Internet;

3.   create hypermedia pages using appropriate hardware and software;

4.   upload pages to a World Wide Web server;

5.   describe contemporary developments relating to on-line documents.

CREDIT VALUE: 2 HN credits

ACCESS STATEMENT: Access is at the discretion of the centre. No formal requirements are necessary for this unit. However, it would be beneficial if the candidate had previous experience of the Internet. This may be evidenced by possession of one of a number of Internet-related units (such as the HN unit 'Introducing the Internet') or equivalent experience.

HIGHER NATIONAL UNIT SPECIFICATION

STATEMENT OF STANDARDS

UNIT NUMBER: 8560247

UNIT TITLE: PUBLISHING ON THE INTERNET

Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

OUTCOME

1.   INVESTIGATE THE CHARACTERISTICS OF EXISTING PAGES ON THE WORLD WIDE WEB

PERFORMANCE CRITERIA

(a)   Investigation is carried out with limited assistance.
(b)   Investigation is planned and objectives are clearly defined.
(c)   Navigation and search facilities are used efficiently and effectively in locating pages with diverse characteristics.
(d)   Identification and description of characteristics are accurate.
(e)   Examples of pages with good and bad characteristics are captured to local storage.

RANGE STATEMENT

Characteristics: technical characteristics (including hyperlinks); design characteristics (including page layout).

EVIDENCE REQUIREMENTS

Performance evidence that the candidate can explore the characteristics of existing Web pages as detailed in performance criteria (a) to (c).

Written evidence that the candidate can describe the characteristics of existing Web pages as detailed in performance criteria (d) and (e) for all classes in the range. This could take the form of a portfolio of printed pages with annotations to describe the good and bad characteristics of each page. A sufficient number of printouts should be produced to illustrate a range of good and bad characteristics relating to the technical and design aspects of Web pages.

OUTCOME

2.   DESCRIBE HARDWARE AND SOFTWARE FACILITIES FOR
         PRODUCING PAGES

PERFORMANCE CRITERIA

(a)   Hardware devices that can assist the development of Web pages
       are accurately identified.
(b)   Types of software that can be used to produce Web pages are
       accurately identified.
(c)   The description of each hardware and software product is accurate
       and concise.
(d)   Contemporary standards are correctly described.

RANGE STATEMENT

Standards: relating to hardware; relating to software (including file formats).

EVIDENCE REQUIREMENTS

Written or oral evidence that the candidate can describe software and hardware
facilities as detailed in performance criteria (a) to (d).

OUTCOME

3.   CREATE HYPERMEDIA PAGES USING APPROPRIATE
         HARDWARE AND SOFTWARE

PERFORMANCE CRITERIA

(a)   The use of hardware and software is efficient and effective.
(b)   The information contained within the page is fit for the purpose,
       legal, accurate, concise and suited to the intended audience.
(c)   The selection of hypermedia elements is appropriate to the nature
       of the information and enhances presentation.
(d)   The pages are well designed and aesthetically pleasing.
(e)   The pages are efficiently structured using internal and external
       hyperlinks that link to related information or enhance navigation.

RANGE STATEMENT

Hypermedia elements: hypertext; graphics; sound.

EVIDENCE REQUIREMENTS

Performance evidence that the candidate can create hypermedia pages as
detailed in performance criteria (a) to (d) for all classes in the range. This will be
in the form an electronic copy of a number of linked pages relating to the
candidate's vocational interests.

OUTCOME

    4.   UPLOAD PAGES TO A WORLD WIDE WEB SERVER

PERFORMANCE CRITERIA

    (a)   The hypermedia elements within the pages are packaged in a suitable format for uploading.

    (b)   The pages are uploaded to a Web server in accordance with file transfer procedures and without loss of information.

    (c)   The uploaded pages are tested to ensure the fidelity of hyperlinks and hypermedia elements.

    (d)   Search services are correctly notified of the address of the site.

RANGE STATEMENT

The range for this outcome is fully expressed within the performance criteria.

EVIDENCE REQUIREMENTS

Performance evidence that the candidate can upload pages to a Web server as detailed in Performance Criteria (a) to (d). A minimum of three pages should be uploaded and the Uniform Resource Locator (URL) of the index page should be provided.

OUTCOME

    5.   DESCRIBE CONTEMPORARY DEVELOPMENTS RELATING TO ON-LINE DOCUMENTS

PERFORMANCE CRITERIA

    (a)   Factors stimulating change are described.
    (b)   The developments are relevant, non-trivial and technically feasible.
    (c)   The description of developments is accurate, clear and concise.
    (d)   The implications of the developments are accurately explained.

RANGE STATEMENT

Developments: hardware; software.

EVIDENCE REQUIREMENTS

Written or oral evidence that the candidate can describe contemporary developments relating to on-line documents as detailed in performance criteria (a) to (d) for all classes in the range. At least one hardware development and one software development must be described.

MERIT

A candidate who achieves all performance criteria for all outcomes will be

awarded a pass. A pass with merit may be awarded where the candidate exceeds the criteria for a pass in significant ways.

In the context of this unit, a pass with merit may be awarded if the candidate demonstrates higher order skills in creating hypermedia pages as detailed in Outcome 3.   The derived pages would have to exceed the performance criteria required for a pass in various ways.   The pages would exhibit superior content and design and the information would have robust and extensive internal and external links. In the context of the pages' content, the information would be extensive and well written; in the context of design, the pages would be attractively designed with good use of various design elements; and in the context of hyperlinks, the candidate would make effective use of internal links to aid navigation together with extensive external links to related sites.

ASSESSMENT

In order to achieve this unit, candidates are required to present sufficient evidence that they have met all the performance criteria for each outcome within the range specified. Details of these requirements are given for each outcome. The assessment instruments used should follow the general guidance offered by the SQA assessment model and an integrative approach to assessment is encouraged. (See references at the end of support notes).

Accurate records should be made of the assessment instruments used showing how evidence is generated for each outcome and giving marking schemes and/or checklists, etc. Records of candidates' achievements should be kept. These records will be available for external verification.

SPECIAL NEEDS

Proposals to modify outcomes, range statements or agreed assessment arrangements should be discussed in the first place with the external verifier.

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HIGHER NATIONAL UNIT SPECIFICATION

SUPPORT NOTES

UNIT NUMBER: 8560247

UNIT TITLE: PUBLISHING ON THE INTERNET

SUPPORT NOTES: This part of the unit specification is offered as guidance. None of the sections of the support notes is mandatory.

NOTIONAL DESIGN LENGTH: SQA allocates a notional design length to a unit on the basis of time estimated for achievement of the stated standards by a candidate whose starting point is as described in the access statement. The notional design length for this unit is 80 hours. The use of notional design length for programme design and timetabling is advisory only.

CONTENT/CONTEXT

Corresponding to outcomes 1–4

This unit is one in a series of units (at Higher National level) relating to the Internet. No previous knowledge or skills are required prior to undertaking this unit although a general familiarity with the Internet is desirable.

Students will require access to the Internet at various times within the life of this unit. While publishing to a local web server is acceptable for most activities, certain activities (such as Outcome 4) must be undertaken in the context of the World Wide Web. To enliven learning, the use of video, audio and multimedia learning aids is recommended. While the distribution of time between the outcomes will vary, students may be expected to complete each outcome within the following timescale:

Outcome 1 .... 20 hours
Outcome 2 .... 10 hours
Outcome 3 .... 30 hours
Outcome 4 .... 10 hours
Outcome 5 .... 10 hours

Throughout this specification 'graphics' is used in a generic sense to encompass original artwork, clipart, photographic images, animations and video. For the purpose of the evidence requirements, only one of these graphic types is required unless more than one type is explicity stated in the evidence requirements.

Outcome 1

This outcome relates to the exploration of the World Wide Web to discover the good and bad characteristics of existing Web pages. The aim of this outcome is to give students some appreciation of the good (and not so good) features of contemporary Web pages from a technical and design perspective. This will permit them to apply this knowledge to the construction of their own Web pages in subsequent outcomes.

Students are required to explore the Web with limited assistance (performance criterion a) so frequent requests for assistance are not acceptable. The exploration must be planned and objectives identified prior to going on-line (performance criterion b). Unstructured research is unacceptable. Neither the pre-planning nor objective setting need be very sophisticated but some evidence of prior preparation must be evident. Students are required to use search facilities to locate pages with the appropriate characteristics (performance criterion c). Various sites have established a reputation for their clever design or the manner in which they provide information and some other sites have gained a reputation for poor design or clumsy presentation.

Students must identify and describe the good and bad characteristics of existing Web pages and capture appropriate examples to disk (performance criteria d and e). This would involve them in locating appropriate examples and then saving the page to local storage. The characteristics of most relevance include:

- presentation of information;
- use of hyperlinks;
- efficiency of page;
- use of graphic elements;
- page layout;
- aesthetic considerations;
- use of fonts and colours.

For example, the efficiency of a Web page relates to the time taken for the page to be downloaded from the server to the client machine (this will depend on its use of text and graphic objects).

Outcome 2

This outcome relates to the hardware and software facilities that can be used to create a Web page. Appropriate hardware relates to a range of input devices that can be used to digitise information such as keyboards, scanners and digital cameras. Software includes a variety of Web creation tools such as graphics programs, HTML editors and HTML generators.

Students are required to identify and describe a range of hardware and software (performance criteria a, b and c). While the descriptions should be generic, it would be vocationally desirable if these generic descriptions were related to contemporary hardware and software products.

Students are also required to describe contemporary standards for hardware and software. These standards should relate to Web page publication rather than generic Internet standards (although they may overlap). At the time of writing, the main standards relating to Web publishing include:

- scanning standards (such as TWAIN);
- graphics standards (such as GIF);
- publishing standards (such as HTML).

Students should also be aware of the standard file types employed on Web pages (relating to text, sound and graphics).

Outcome 3

This outcome involves students in creating Web pages using hardware and software. There is no requirement re. the range of hardware and software that students use in constructing their Web pages but a variety of hardware and software should be employed in this exercise. So, for example, it would not be appropriate for students to produce simple, text-only, static Web pages without the complexity of sound or graphics or digitising devices.

There are standards relating to the quality of information that the students uses (performance criterion a). So, for example, information that was copied from another Web site without the permission of the copyright holder would be illegal and would not satisfy this criterion. The pages must contain a variety of elements (such as sound and graphics) and the selection of these elements must be consistent with the nature of the information or enhance presentation (performance criterion b). For example, a statistical chart might enhance the clarity of numerical information whereas some other graphic elements might be for presentational purposes.

The derived pages must be well designed and aesthetically pleasing (performance criterion c). The critical aspect of this outcome is creation of hypermedia pages not the quality of graphic design so the application of this performance criterion should not be too rigid. But unattractive or badly designed pages are not acceptable. The pages must also be efficiently structured to enhance the navigation within and between pages (performance criterion d). There should also be external links to related Web sites. So internal linking should allow the user to navigate the pages efficiently and effectively and external links should be established to appropriate Web sites. For example, it would not be acceptable to reference an Internet resource (such as a Web site or program file) without providing a hyperlink to that resource (where one exists).

Outcome 4

This outcome relates to the uploading of Web pages to the World Wide Web. Once the student has created a number of linked pages, s/he must transfer them to a Web server. This server may be local or remote. The critical aspect if that the student is aware of (and can apply) the procedure to transfer the pages to the appropriate server. If an internal Web server is used then this server must be connected to the World Wide Web and must be available to the community of Internet users.

The students must prepare the pages prior to uploading (performance criterion a). This procedure will vary from system to system but may involve the storage of the hypermedia elements (text, sound and graphics) in specific locations or specific formats. The pages must then be uploaded to a Web server. Once again, this procedure will vary from system to system and can be as simple as invoking a Windows publishing wizard or may involve a more complex UNIX routine. The critical aspect is that the student is aware of at least one procedure for transferring information to a Web server. Once the pages have been uploaded they must be tested (performance criterion c). This is simply a matter of checking that pages look correct and that the hyperlinks work as expected. Once the pages have been verified then the student must notify users of the

pages' existence. There are various ways of doing this, the most common being the notification of the pages URL and contents to the main search services (such as Alta Vista).

Outcome 5

This outcome relates to contemporary developments in on-line publishing. At the time of writing the main developments relating to this activity include:

- improved bandwidth;
- dynamic content within Web pages;
- revised standard for HTML (v3.2);
- secure transaction technology;
- push technology.

The stimulus to change must be described (performance criterion a). So, for example, in describing the advanced on Web page security, students must also explain the need for this development. The selected development must be relevant (to Web publishing), non-trivial and feasible (performance criterion b). So, for example, general statements of technological progress that are not related to Web page production are not acceptable. The description must be accurate, clear and concise (performance criterion c) and the implications of the development must be explained (performance criterion d). So, for example, the introduction of improved security is likely to stimulate greater electronic commerce via the World Wide Web.

APPROACHES TO GENERATING EVIDENCE   A candidate-centred, resource-based learning approach is recommended. During the course of the unit candidates should have several opportunities to develop their practical skills and should be assessed at appropriate points. Concepts and terminology should be presented in context throughout the unit.

Where the candidate is unsuccessful in achieving an outcome provision should be made for remediation and reassessment.

Written evidence may take various forms including hand-writing and word processed text or other forms of written communication that is more suited to students with physical disabilities. Students should not be required to produce a specific form of written text (such as word-processed text) unless this is stipulated within the unit specification or instrument of assessment.

ASSESSMENT PROCEDURES   Centres may use the instruments of assessment which are considered by the tutor/trainer to be the most appropriate. Examples of instruments of assessment which could be used are:

Outcome 1   Practical assignment involving the student in exploring the WWW for examples of good and bad page construction.

Outcome 2   Extended response question on hardware and software facilities for producing Web pages. Candidates' response would be in the form of an essay.

Outcome 3-4   Practical assignment involving the student in constructing a number or Web pages related to the student's vocational interests and then uploading these pages to a Web server.

Outcome 5   Extended response question on contemporary developments relating to on-line publishing. Candidates' response would be in the form of an essay.

PROGRESSION   This unit contributes towards SQA Higher National Certificates, Higher National Diplomas and Professional Development Awards

REFERENCES

1.   Guide to unit writing.
2.   For a fuller discussion on assessment issues, please refer to SQA's Guide to Assessment.
3.   Information for centres on SQA's operating procedures is contained in SQA's Guide to Procedures.
4.   For details of other SQA publications, please consult SQA's publications list.
5.   SQA World Wide Web site at http://www.SQA.org.uk.