

## National Unit Specification: general information

|               |                   |
|---------------|-------------------|
| <b>UNIT</b>   | Internet (Higher) |
| <b>NUMBER</b> | DC9N 12           |
| <b>COURSE</b> | PC Passport       |

### SUMMARY

This unit is designed to enable candidates to develop advanced Internet skills. Candidates will learn how to perform a wide range of tasks using Internet tools (including complex searches and advanced communications), and understand the basic theory behind the Internet

### OUTCOMES

- 1 Use a computer system to perform complex tasks related to the Internet.
- 2 Use Internet facilities to locate information.
- 3 Use Internet facilities to communicate.

### RECOMMENDED ENTRY

Entry is at the discretion of the centre. Candidates should possess prior knowledge and experience of the Internet and be familiar with the main functions of a range of Internet-related software. Candidates should also possess some previous knowledge or experience of computers before undertaking this unit. This could be evidenced by possession of the IT core skill at Intermediate 2 level.

### CREDIT VALUE

1 credit at Higher (6 SCOTCAT points at SCQF level 6\*)

*\*SCOTCAT 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 SCOTCAT points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

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### Administrative Information

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|--------------------------|-----------------------------------|
| <b>Superclass:</b>       | CB                                |
| <b>Publication date:</b> | August 2003                       |
| <b>Source:</b>           | Scottish Qualifications Authority |
| <b>Version:</b>          | 01                                |

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## **National Unit Specification: general information (cont)**

### **CORE SKILLS**

This unit contributes to IT Core Skills Intermediate 2 level.

Information on the automatic certification of any core skills in this unit is published in *Automatic Certification of Core Skills in National Qualifications* (SQA, publication code BA0906).

## National Unit Specification: statement of standards

### UNIT Internet (Higher)

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

#### OUTCOME 1

Use a computer system to perform complex tasks related to the Internet.

##### Performance criteria

- a) The use of computer hardware is efficient and effective.
- b) The use of the operating system is efficient and effective.
- c) Working practices are secure.
- d) Routine problems are resolved.
- e) Factors affecting performance of an Internet connection are accurately explained.
- f) The main functional characteristics of the Internet are correctly described.
- g) A wide range of terminology relating to computer hardware, software and the Internet is used correctly.

##### Note on range for the outcome

Tasks: Navigating folders; create and delete folders; saving, renaming, deleting, moving and copying files; printing web pages; saving web pages; load and terminate browser; open multiple instances of a browser; download and upload a file to a website.

Security: passwords; anti-virus protection; backups; firewalls.

##### Evidence requirements

Performance evidence that the candidate can use a computer system to the standards defined by performance criteria (a) and (d). This will be in the form of an observation checklist or other means of recording candidate performance (such as a video recording). It is not required that candidates are observed resolving problems (performance criterion d). However, if a routine problem arises during a candidate's use of the Internet then they are required to resolve it.

Evidence of knowledge and understanding will consist of 15 objective questions relating to performance criteria (e) to (g), and underpinning knowledge relating to performance criteria (a) to (d). Candidates are required to produce at least 10 correct answers.

#### OUTCOME 2

Use Internet facilities to locate information.

##### Performance criteria

- a) The selection of a search strategy is effective in locating the desired information.
- b) Browser controls and hyperlinks are effectively used to navigate a website.
- c) The quality of the design of the website is evaluated using defined criteria.

- d) The quality of the information is evaluated using defined criteria.

## National Unit Specification: statement of standards (cont)

### UNIT Internet (Higher)

- e) A wide range of search facilities are described and the strengths and limitations of each are accurately explained.

#### Note on range for the outcome

Internet facilities: Search engines; meta search engines; directories.

Information: text; number; graphic; sound; video.

#### Evidence requirements

Performance evidence that the candidate can use Internet facilities to locate information to the standards defined by performance criteria (a) to (e). Candidates must locate a minimum of four websites (or resources) containing information that relates to different contexts and covers at least four of the defined types of information. Each search must be complex (requiring the use of advanced search facilities) and involve a number of search criteria. The located web pages (or resources) must be printed or stored electronically.

Evidence of knowledge and understanding will consist of 15 objective questions relating to performance criteria (c) to (e) and the underpinning knowledge relevant to performance criteria (a) and (b). Candidates are required to produce at least 10 correct answers.

### OUTCOME 3

Use Internet facilities to communicate.

#### Performance criteria

- a) Facilities are used efficiently and effectively for the purposes of communication.
- b) The communication adheres to the normal standards associated with the facility used and the environment within which the facility is used.
- c) The communication is effective in achieving its purpose.
- d) Communication facilities are used securely and responsibly.
- e) An information resource is efficiently established and the resource effectively provides information on a specific topic.

#### Note on range for the outcome

Internet facilities: e-mail client; forum; instant messaging.

E-mail facilities: read message; create message (with attached file); reply to message; forward message; manage message store.

Information resource: website; online forum; mailing list; peer-to-peer network.

## National Unit Specification: statement of standards (cont)

### UNIT Internet (Higher)

#### Evidence requirements

Performance evidence that the candidate can use Internet facilities to communicate to the standards defined by performance criteria (a) to (d). Candidates must use e-mail and at least one other defined Internet facility; a minimum of three examples of each facility must be provided. The resulting evidence may be stored on paper or electronically.

Performance evidence that the candidate can establish an information resource to the standards defined by performance criterion (e). At least one resource must be established (selected from the prescribed range). Evidence will be in the form of a paper or electronic copy of the resource.

Evidence of knowledge and understanding will consist of 10 objective questions relating to the underpinning knowledge relevant to performance criteria (a) to (e). Candidates are required to produce at least 7 correct answers.

#### EVIDENCE REQUIREMENTS FOR THE UNIT

The assessment of knowledge and understanding can be combined into a single instrument of assessment consisting of 40 objective questions relating to outcomes 1, 2 and 3. The distribution of questions should adhere to the evidence requirements for each outcome:

|           |               |
|-----------|---------------|
| Outcome 1 | 15 questions  |
| Outcome 2 | 15 questions  |
| Outcome 3 | 10 questions. |

The combined pass mark for this assessment is 27 correct answers (out of 40 questions). If a single instrument of assessment is used, it is not necessary to satisfy the pass mark for each outcome. Candidates will be deemed to have achieved all outcomes (with respect to their knowledge and understanding) if their combined score is at least 27 out of 40.

## National Unit Specification: support notes

### UNIT Internet (Higher)

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 may be delivered as a stand-alone unit or in combination with other units as part of the PC Passport award at Higher level.

This unit is one of a series of units entitled *Internet*. Similar units exist at Intermediate 1 and Intermediate 2 levels.

#### *Corresponding the Outcome 1-3*

The term “Internet” is used to represent the full range of Internet services which includes the World Wide Web, e-mail, file transfer, newsgroups and chat.

#### *Outcome 1*

This outcome relates to the complex tasks that candidates must be able to perform in order to utilise the Internet. The specific tasks that candidates must be able to perform are defined in the associated range statement. The performance criteria define the standards which should be applied to candidate activity.

Performance criterion (a) requires to the candidate to use hardware efficiently and effectively. The range of hardware used by candidates will vary from centre to centre, but typical hardware would include: keyboard, pointing device (such as a mouse), screen, printer and system unit; candidates will also experience communication hardware (such as modems, routers, network equipment). Effective use of hardware means that, for example, candidates will be able to use the hardware without assistance. They are also expected to complete the prescribed range of activities efficiently, in other words, within an acceptable period of time and without too many attempts. The tasks set for candidates should be typical of those expected of an expert user in a working environment (such as uploading a page to a website).

Performance criterion (b) requires candidates to use an operating system efficiently and effectively. The use of the OS should be limited to that required to carry out the tasks defined in the range. At this level, there is a requirement that candidates not only accomplish the task (which relates to effectiveness) but that they also complete the task efficiently – without assistance and within a short period of time. So, for example, it is not acceptable for them to require repeated attempts at downloading a file (assuming that difficulties are not caused by technical problems).

Performance criterion (c) relates to security. Candidates’ working practices must be secure. They are expected to know about (and adhere to) security policies, and be familiar with the various tools that are used to ensure security (such as virus protection software and firewalls). Note that candidates are not expected to know about the technical aspects of anti-virus software or firewalls; they are only required to know about the purpose of each and their major functional characteristics. Candidates are required to know the difference between “good” and “bad” passwords, and appreciate the importance of regularly changing their passwords.



## National Unit Specification: support notes (cont)

### UNIT Internet (Higher)

Performance criterion (d) relates to routine problem solving. At this level, it is expected that candidates carry-out first level problem resolution. It is expected that this is carried out in a methodical manner using a pre-defined problem solving procedure. It is not required that candidates resolve complex problems. Appropriate problems would include correcting screen resolution, recovering from a system crash (but not including system re-build), resolving simple network problems and re-installing software.

Performance criterion (e) relates to the factors affecting performance of an Internet connection. Factors include:

- client-side factors (such as the speed of the local Internet device – such as a PC)
- server side factors (such as the speed of the remote server)
- communication factors (such as bandwidth).

Candidates are only required to know the effect of each of these components on Internet connection speed; they are not required to know the technical reasons for their effect.

Performance criterion (f) relates to the functional characteristics of the Internet. Candidates are expected to know about the characteristics affecting speed (such as bandwidth), reliability (such as routing and packet switching) and characteristics affecting security (such as protocols). It is not required that candidates have a detailed technical knowledge of any of these characteristics; candidates are only required to know their functional effect.

Performance criterion (g) relates to the terminology associated with Internet use (relating to hardware, software and communications). At this level, candidates are expected to possess a wide vocabulary of terms (relating to the Internet) and be familiar with a wide range of routine terms used to describe hardware, software and the Internet. The range of terminology required at this level should be consistent with the vocabulary expected from an expert user.

### *Outcome 2*

This outcome relates to locating information on the Internet. The type of information that candidates are expected to find should relate to their vocational interests but may be complex and unfamiliar. The performance criteria define the standards which should be applied to candidate activity.

Performance criterion (a) requires candidates to select a search strategy. A search strategy typically includes: selecting the type of search service(s) to be employed; selecting specific search facilities (chosen from the type(s) of service previously selected); selecting the key attributes of the target information; translation of these attributes into appropriate keywords and queries; and the selection of filters to reduce the number of located resources/pages.

At this level, candidates are expected to locate information rapidly, through their skilled use of search facilities. Candidates should be familiar with advanced search techniques including the use of Boolean operators and compound search criteria. Candidates are also expected to be skilled at selecting keywords to use within their searches. Note that the corresponding range statement defines the range of search services (which include search engines, meta search engines and directories). Candidates are

required to locate a range of information types (text, number, graphic sound and video) and are expected to be proficient at searching for each of these media types.

## National Unit Specification: support notes (cont)

### UNIT Internet (Higher)

Performance criterion (b) relates to browser navigation controls. Candidates are expected to be familiar with these controls (such as the back and forward buttons) and be able to use them effectively to move between pages in a website. Similarly, candidates are required to recognise and use embedded hyperlinks. It is not acceptable for candidates to double-click on a hyperlink (since this infers that they are not recognised as hyperlinks). The combined use of browser controls and hyperlinks should enable candidates to effectively navigate a specific website.

Performance criterion (c) relates to the design of a website. Once a website has been located, candidates are required to evaluate the quality of its design using defined criteria. These criteria will relate to: (1) usability; (2) navigation/structure; (3) presentation. Candidates are expected to know and apply standards for the design of websites.

Performance criterion (d) relates to the quality of the information provided by a website. The quality of information relates to the following attributes: (1) relevance; (2) accuracy; (3) clarity; (4) brevity; (5) depth/detail; (6) timeliness. Information is relevant if it relates to the subject under investigation; information is accurate if it is factually correct – or at least known not to be factually incorrect; information is clear if it is well written in accordance with the rules for clear and simple writing; information is brief if it is succinct and to-the-point; information is detailed if sufficient information is provided to give the reader a clear understanding of the subject matter; and information is timely if it is up-to-date. Note that some of these attributes conflict – there is a tension between brevity and depth, and it is difficult to maintain a website’s timeliness and accuracy. Candidates are required to know about these attributes and apply them to specific websites.

Performance criterion (e) relates to search services. Candidates are required to know and describe the range of search services (search engines, meta engines and search directories). Candidates should know the differences between each type of search service and also know the most popular examples of each. The advantages of each search service must be known. For example, some search engines specialise in specific media types (such as audio) and even the generic search services are better at some things than others.

### *Outcome 3*

This outcome relates to using the Internet to communicate. The associated range statement defines the specific services (e-mail, online forum and instant messaging). Online forums include bulletin boards and community services such as MSN groups.

Performance criterion (a) requires candidates to use the facilities efficiently and effectively. Effective use means that they use the facilities to accomplish a specific task – such as contributing to a particular online forum or engaging in an e-mail dialogue. Candidates’ effectiveness should be gauged over an extended period of time – not during a single instance of the use of a specific facility. So, for example, before judging that a candidate can use e-mail effectively, the assessor should observe the candidate’s use of e-mail over an extended period and using a variety of examples to judge the candidate. The efficient use of these facilities requires candidates to use them without assistance and without repeated attempts. Note the range of e-mail facilities that must be used. This includes managing a message store which means that candidates are required to organise and maintain their e-mail folders.

## National Unit Specification: support notes (cont)

### UNIT Internet (Higher)

Performance criterion (b) relates to the standards associated with each communication facility. These standards will relate to internal standards (acceptable use policies) and commonly accepted external standards (such as e-mail etiquette). So, for example, posting a rude or insulting message on a community forum would be unacceptable; providing personal details to a stranger on an instant messaging system would be unacceptable; creating a business e-mail which used inappropriate (colloquial) language would be unacceptable.

Performance criterion (c) relates to the effectiveness of the communication. There is no point in adhering to the acceptable use policies and other standards if, ultimately, the communication does not achieve its purpose. So the structure and contents of the communication should be appropriate to the intended audience. For example, exceedingly long e-mails are unlikely to be read by recipients; posting a single message on a forum may not elicit the required response (a follow-up post may be necessary); instant messaging is only effective if everyone is given a chance to contribute (and the dialogue is not monopolised by one or two individuals).

Performance criterion (d) relates to the secure and responsible use of communication facilities. Most centres will have an acceptable use policy and candidates are required to adhere to this. Responsible use also relates to the candidate's conduct while s/he is online. For example, it is not acceptable for candidates to post personal information on a public bulletin board (whether this is part of an acceptable use policy or not). Secure use means that candidate activities do not jeopardise the security of the centre/workplace. For example, candidates are expected to know about (and comply with) anti-virus and firewall practices; they are expected to know about (and avoid) possible sources of virus infection (such as downloading and running an executable file).

Performance criterion (c) relates to the creation of an "information resource" such as a website or a mailing list or an online community. For example, a candidate could create a (small) website on a specific topic; alternatively, s/he could create and manage a dedicated mailing list or online community. The key aspect of this performance criterion is the effectiveness of the information provided by the resource rather than the technical quality of the resource (although the resource must be sufficiently robust to actually deliver the required information). It is not sufficient for a candidate to simply create an information resource (such as a mailing list); s/he must also maintain and develop the facility to ensure that it is effective in providing information over an extended period.

### **GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT**

A practical, hands-on approach to learning should be adopted. The emphasis should be on learning-by-doing. Terminology and underpinning knowledge should be introduced in a practical context.

The actual distribution of time between outcomes is at the discretion of the centre. However, the following distribution is suggested:

|           |          |
|-----------|----------|
| Outcome 1 | 12 hours |
| Outcome 2 | 12 hours |
| Outcome 3 | 16 hours |

## National Unit Specification: support notes (cont)

### UNIT Internet (Higher)

Throughout this unit, candidate activities should relate to their personal or vocational interests. For example, candidates should be permitted to choose online forums (or bulletin boards) which reflect their interests – rather than forums prescribed by their teacher/trainer. Their contribution to these forums should be genuine (rather than contrived) and seek to gain some valid information on a topic of genuine interest to the candidate. Similarly, the “information resource” required as part of Outcome 3 should be a genuine resource – and not one simply required for the purposes of the Outcome. The resource may reflect the candidate’s personal or (preferably) vocational interests.

### GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

It is recommended that centres combine the assessment of knowledge and understanding into a single objective question paper. Re-assessment should be undertaken by re-assessing the specific outcomes which have not been passed.

Evidence of practical competence should be stored in a portfolio. At the completion of this unit the portfolio should contain a range of evidence, drawn from the evidence requirements for each outcome. This will include an observation checklist (Outcome 1), copies of web pages (Outcome 2) and copies of Internet communications (Outcome 3). Outcome 3 also requires the creation of an information resource and candidates are required to provide paper or electronic evidence of this resource.

This material may be stored in paper or electronic format. Centres may choose to store candidate evidence in an electronic portfolio (e-portfolio).

Some of the evidence requirements for this unit (such as practical activities in all three outcomes) should be gathered over an extended period of time. For example, the effective and efficient use of e-mail cannot be judged by observing a single instance of the candidate sending and receiving a message; the candidate’s competence should be judged by observing him/her over an extended period sending and receiving a wide range of messages and message types. Similarly, their contribution to an online forum should be judged over an extended period time (during which time they would be expected to post new messages, respond to existing messages, upload a file etc.).

### SPECIAL NEEDS

This unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering special alternative outcomes for units. For information on these, please refer to the SQA document *Guidance on Special Assessment Arrangements* (SQA, publication code AA0645).