



National Unit Specification: general information

UNIT PC Passport: IT Systems (SCQF level 5)

CODE F1FA 11

SUMMARY

This Unit is a mandatory Unit of PC Passport: Intermediate but can also be taken as a free-standing Unit.

This Unit is designed to enable users to evaluate computer systems and their major peripherals. The candidate will learn how to set up peripherals in order to transfer data between a computer system and the peripheral. Candidates will be introduced to methods used to reduce health risks associated with using a computer system and also how to reduce the security risks associated with computer systems.

This Unit is appropriate for anyone who wants to make considered use of computer systems.

OUTCOMES

- 1 Investigate and recommend a range of computer hardware for a given specification.
- 2 Connect and configure different peripheral devices to a computer system.
- 3 Identify precautions to reduce known health risks associated with the use and disposal of computer systems.
- 4 Identify security issues and safeguards associated with the use of computer systems.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates would normally be expected to have attained one of the following, or equivalent:

- ◆ PC Passport: Introduction to IT Systems (SCQF level 4)

Administrative Information

Superclass: CA

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CREDIT VALUE

0.5 credit at Intermediate 2 (3 SCQF credit points at SCQF level 5*)

**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.*

CORE SKILLS

There is no automatic certification of Core Skills in this Unit.

The Unit provides opportunities for candidates to develop aspects of the following Core Skills:

- ◆ Information Technology (SCQF level 5)
- ◆ Problem Solving (SCQF level 5)

These opportunities are highlighted in the Support Notes of this Unit Specification.

National Unit Specification: statement of standards

UNIT PC Passport: IT Systems (SCQF level 5)

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 SQA.

OUTCOME 1

Investigate and recommend a range of computer hardware for a given specification.

Performance Criteria

- (a) Investigate a range of modern computer systems.
- (b) Investigate a range of commonly used input, output and backing storage devices.
- (c) Recommend an appropriate range of computer hardware for a given specification.

OUTCOME 2

Connect and configure different peripheral devices to a computer system.

Performance Criteria

- (a) Safely connect peripheral devices to a computer system.
- (b) Configure settings for the transfer of data between the computer system and the peripheral devices.
- (c) Transfer data between the computer system and peripherals.
- (d) Safely disconnect peripheral devices from the computer system.
- (e) Report the results of testing each peripheral device accurately.

OUTCOME 3

Identify precautions to reduce known health risks associated with the use and disposal of computer systems.

Performance Criteria

- (a) Identify risks associated with the use of computer systems in relation to current health and safety legislation and regulations.
- (b) Identify methods of safe and responsible disposal of computer systems and components in relation to current regulations.
- (c) Identify suitable safety precautions to reduce health risk when working with computer systems.

National Unit Specification: statement of standards (cont)

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OUTCOME 4

Identify security issues and safeguards associated with the use of computer systems.

Performance Criteria

- (a) Identify current legislation associated with security issues relating to the use of computer systems.
- (b) Identify basic precautions to safeguard computer data and computer systems.

EVIDENCE REQUIREMENTS FOR THIS UNIT

Evidence is required that candidates have achieved all Outcomes and Performance Criteria.

Candidates are encouraged to use the internet in any research etc, however, the evidence produced must be the candidate's own words. Assessors should assure themselves of the authenticity of candidate's evidence.

Written and/or oral recorded, performance and product evidence is required which demonstrates that the candidate has achieved the requirements of all of the Outcomes and Performance Criteria to show that the candidate has appropriate knowledge and understanding of the content of this Unit.

For Outcome 1 the evidence produced will take the form of written and/or oral recorded evidence which demonstrates that the candidate has achieved all Performance Criteria. This evidence will be gathered under supervised, open-book conditions.

Evidence for this will be in the form of:

- ◆ a list of three computer systems
- ◆ three peripherals of the same type with different specifications
- ◆ A recommendation including suitable selection of input, output and backing storage devices that complement the selected computer system so that the complete system will satisfy a given specification. The specification will contain the necessary criteria to be used by candidates when they compare the different systems and peripherals.

For Outcome 2 performance evidence is required that demonstrates that candidates can:

- ◆ safely connect a peripheral to a computer system
- ◆ configure settings for the transfer of data between the computer system and the peripheral
- ◆ transfer data between the computer system and a peripheral
- ◆ safely disconnect the peripheral from the computer system

An assessor observation checklist is required which demonstrates that candidates have completed the above tasks. The assessor must also confirm that the candidate adopts safe working practices throughout the undertaking of this Unit.

National Unit Specification: statement of standards (cont)

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The candidate is required to connect and use three peripheral devices (one of each — input, output and backing storage). It is not necessary that they install a driver for the device. The candidate will normally demonstrate the skills during the teaching and learning activities of the Unit.

Written and/or oral recorded evidence is required which demonstrates that the candidate has accurately reported the results of testing three peripheral devices. This evidence will be gathered under supervised, open-book conditions.

Written and/or oral recorded evidence is required which demonstrates that the candidate has achieved all Performance Criteria in Outcomes 3 and 4. The evidence for these Outcomes should be obtained under controlled, supervised conditions. The assessment will be closed-book and should last no more than 45 minutes.

The instrument of assessment will provide opportunities for each of the Outcomes to be fulfilled by means of sampling across the range of the content of Outcomes 3 and 4. Where re-assessment is required the sample presented to the candidate must be different on each assessment occasion. Achievement may be decided by the use of a cut-off score.

The evidence produced must include the following:

- ◆ Three risks associated with the use of computer systems in relation to current health and safety legislation and regulations.
- ◆ Safe disposal of two components from computer circuit boards, toner cartridges, display tubes and panels from monitors in compliance with Waste Electrical and Electronic Equipment (WEEE) regulations, or any current legislation.
- ◆ Safe disposal of data held on one storage media.
- ◆ Two safety precautions to reduce health risk.
- ◆ Two pieces of legislation associated with computer system security.
- ◆ Two precautions to safeguard computer data and computer systems from:
 - making regular back-up copies
 - installing and keeping active anti-virus software
 - not opening attachments in e-mails from unknown sources
 - secure log-ons
 - active firewall
 - Uninterruptible Power Supply (UPS) or other protection devices

The Assessment Support Pack (ASP) for this Unit provides sample assessment materials including assessor checklists, practical tasks and an instrument of assessment for the knowledge and understanding of Outcomes 3 and 4. Centres wishing to develop their own assessments should refer to the Assessment Support Pack to ensure a comparable standard.

National Unit Specification: support notes

UNIT PC Passport: IT Systems (SCQF level 5)

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 20 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 a group of Units making up an award, eg PC Passport: Intermediate.

This Unit maps to the National Occupational Standards (NOS) for IT Users, as specified by the Sector Skills Council (e-Skills UK). This Unit includes full content coverage of level 2 Areas of Competence in the following areas of NOS

- ◆ Use IT Systems

Full assessment coverage of NOS is detailed in the Assessment Support Pack for this Unit. Further information regarding NOS can be found at www.e-skills.com.

Outcome 1

The aim of Outcome 1 is to familiarise the candidate with the range of sources of information that are available about a particular computer system. These may be from manufacturer's webpages; catalogues; magazine reviews; from within the computer system itself or from the documentation that came with the system. The candidate should be able to extract information regarding different computer systems (such as the processor; the processor speed; both primary and secondary memory capacity; number and type of ports and operating system).

A variety of different types of information sources should be used for Outcome 1. This requires knowledge of:

- ◆ Comparative speeds (kHz, MHz, GHz; bits per second and bytes per second)
- ◆ Memory capacity measurements (bit, byte, kilobyte, megabyte, gigabyte and terabyte)
- ◆ Connections (VGA, PS/2 (PC keyboard and mouse), USB, IEEE1394 (FireWire or i-Link) and IEEE1284 (Centronics printer))
- ◆ Knowledge that all peripherals require driver software which match an operating system to work and that the driver software for a particular peripheral may only be available for a limited number of operating systems.

The candidates should be familiar with systems and peripherals, specifications of these should be readily available.

Similarly, the candidate should become familiar with the range of sources of information that are available about a particular peripheral. These may be from manufacturer's webpages; magazine reviews; catalogues; from within the computer system to which it is connected or from the documentation that came with the peripheral. The candidate should be able to extract information on different peripherals of the same type (eg laser printer), appropriate information (such as: speed; storage capacity; interface and driver requirements).

National Unit Specification: support notes

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Given a specification the candidate should then be able to choose the most suitable peripherals and computer system to match the given specification.

Outcome 2

The aim of Outcome 2 is to make the candidate familiar with the correct and safe way of connecting a peripheral to a computer system, eg monitors, data projectors, keyboard and mouse should only be connected and disconnected when the computer is shut down. Other devices such as digital still and video cameras, scanners or 'pen' drives which use a USB connection can usually be connected when the system is 'on'. However most of these devices cannot be simply unplugged without going through the proper removal procedure for the particular operating system in use or in the case of data projectors to allow for the 'cooling down' period before disconnecting and moving it. It is not expected that the candidate will have to install the driver software for a peripheral before using it.

Outcome 3

The aim of Outcome 3 is to make the candidate aware of the current guidelines affecting the use and responsible disposal of computer systems and their peripherals or parts. These must include; Health and Safety Guidelines for use of computer systems; and the Waste Electrical and Electronic Equipment (WEEE) regulations for disposal of goods containing toxic waste — such as computer circuit boards, toner cartridges, monitors, etc. Candidates must be aware that data held on storage media must be destroyed before their disposal. Any other relevant current legislation can also be included along with updates to existing acts and European directives.

Outcome 4

The aim of Outcome 4 is to make the candidates aware of the potential risks to data when using a computer and to be aware of basic precautions against misuse or loss of data. This should be a general overview and need not go into significant depth. For each potential risk a possible strategy for eliminating or minimising the risk should be provided. (eg making regular back-up copies; installing and keeping active anti-virus software; not opening attachments in e-mails from unknown sources; log on security; active firewall; UPS; etc).

Current legislation includes Data Protection Act; Computer Misuse Act; Copyright, Designs and Patents Act.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

A variety of different types of information sources should be used for Outcome 1. Suitable sources include current magazines and a range of sites available on the internet. System manuals and text books may also provide suitable information for OutcomeS 1 and 2.

Candidates could record the findings of their research on a pro-forma with suitable headings to enable gathering of appropriate information which could be used for comparisons between at least three different computer systems. Candidates should be encouraged to provide justifications for their choice of systems and peripherals.

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Candidates should be familiar with systems and peripherals. Specifications of these should be readily available from sources such as manufacturers websites.

Outcome 2 requires the candidate to connect peripherals to computer systems — this should only be carried out after proper instruction and under close supervision. Note that the candidate is not required to install the driver before installing the peripheral. The candidate has to successfully and safely install one input device such as a graphics tablet or a digital camera; one output device such as a data projector or a monitor and one backing storage device such as a ‘pen’ drive or an external hard disk drive. Centres should choose devices that the candidate is likely to use in the course of their studies or vocation. The candidate may be given a peripheral for which no driver has been installed and for which they do not have permission to install. They should then make out a formal note detailing the problem with a request to the appropriate person in the centre to resolve the problem. If permitted in the centre, this could be as a test message on the centre’s ‘help desk’ or as a word-processed request or an e-mail. It would be beneficial to the candidate to introduce this at an early stage in the Unit and candidates encouraged to log any ‘real’ faults and problems that they encounter throughout the study of this Unit.

It is not necessary for candidates to resolve faults. However, it would be beneficial to introduce solutions to common problems where possible. The candidate should be aware that often users cannot fix their own problems as they do not have administration privileges required.

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

Outcome 1	9 hours
Outcome 2	4 hours
Outcome 3	4 hours
Outcome 4	3 hours

The allocated timings allow for assessment and re-assessment where required.

OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

In this Unit candidates are required to carry out an investigation which may provide an opportunity to gather evidence towards aspects of IT Core Skill. Candidates are also required to carry out an evaluation of computer systems which may provide an opportunity to gather evidence towards aspects of Problem Solving Core Skill.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

It may be appropriate for some of the evidence for this Unit to be produced using e-assessment. This may take the form of e-testing (for knowledge and understanding) and/or e-portfolios (for practical abilities). Centres using e-assessment must ensure the normal standards for validity and reliability are observed.

National Unit Specification: support notes

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If a centre is presenting Outcome 3 and 4 of these assessments online the following assessment methods, where appropriate, may be selected:

- ◆ Multiple choice
- ◆ Drag and drop
- ◆ Multiple response
- ◆ Mix and match
- ◆ a combination of the above

It is expected that the questions will be of the multiple-choice variety. Centres may consider the use of alternative question types, particularly if using Computer Assisted Assessment approaches. However, care should be taken that the questions are valid and at an appropriate level. The use of simple true/false question responses is unlikely to achieve this.

Written and/or recorded oral evidence is required which demonstrates that the candidate has achieved Outcomes 3 and Outcome 4. The evidence for these Outcomes should be obtained under controlled, supervised conditions. The assessment will be closed-book. It is strongly recommended that an appropriate cut-off score is used to measure achievement. Candidates should normally be expected to complete this assessment within 45 minutes.

Where re-assessment of knowledge and understanding is required the questions presented to the candidate must be different on each assessment occasion.

There is an opportunity to use an online assessment environment for knowledge and understanding of Outcomes 3 and 4.

The Assessment Support Pack for this Unit provides sample assessment material. Centres wishing to develop their own assessments should refer to the Assessment Support Pack to ensure a comparable standard.

The assessment of practical skills throughout this Unit may be demonstrated in the context of a single extended task, or in the context of a number of smaller tasks. The candidate will normally demonstrate the skills during the teaching and learning activities of the Unit, rather than as separate assessment activities.

If this Unit is undertaken in the workplace there may be opportunities for candidates to gather evidence in day to day workplace activities.

Opportunities for the use of e-assessment

E-assessment may be appropriate for some assessments in this Unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003)*, *SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

National Unit Specification: support notes (cont)

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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 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).

History of changes:

Version	Description of change	Date
02	Evidence Requirements clarified and/or details of NOS mapping inserted	10/08/2010