National Unit Specification: General Information

UNIT   Computer Operating Procedures (Intermediate 1)

NUMBER   D974 10

COURSE

SUMMARY
The unit is designed to develop basic skills in the operation of a single user microcomputer system. Operations will include: simple maintenance of the operating environment; file operations and management; selection and use of computer storage media; handling and replacement of computer consumables. Underpinning knowledge of simple computer system and data organisation are offered to help in the development of the candidate's knowledge and understanding of the operations being performed.

OUTCOMES
1   Describe the organisation of a computer system.
2   Use an operating system.
3   Select and use storage media.
4   Handle and replace consumables.

RECOMMENDED ENTRY
There are no formal entry requirements for this unit.

CREDIT VALUE
1 Credit at Intermediate 1.

Administrative Information

CORE SKILLS

Information on the automatic certification of any core skills in this unit is published in *Automatic Certification of Core Skills in National Qualifications* (SQA, 1999).

The achievement of this unit may contribute to the development of core skills, but the assessment arrangements for the unit do not guarantee that the candidate will produce sufficient evidence of core skills achievement. This means that there is no automatic certification of core skills for this unit.

National unit specification: statement of standards

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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
Describe the organisation of a computer system.

Performance Criteria
a)   Internal organisation is described correctly.
b)   External organisation is described correctly.
c)   Data organisation is described correctly.
d)   Diagrams are clear and accurate.
e)   Peripheral devices are classified correctly.

Note on Range for the outcome
Computer system: single user microcomputer.
Internal organisation: processor; memory; bus; interfaces; storage.
External organisation: systems unit; input devices; communications.
Data organisation: memory; backing storage.
Peripherals: input devices; output devices; backing storage devices; communication devices.

Evidence Requirements
Written or oral evidence that the candidate can describe accurately the internal organisation and external organisation of a computer system as described in PC (a) and PC (b). The description must be accompanied by a diagram showing the overall relationship and direction of data flow between the components stated in the range.

Written or oral evidence that the candidate can describe accurately the organisation of data in a computer system as described ion PC (c). A description must be given for at least two memory devices one form each item in the range.

Written and or oral evidence that the candidate can classify correctly peripheral devices as described in PC (e). The classification must be carried out correctly for five devices at least one from each item in the range.

National unit specification: statement of standards (cont)

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OUTCOME 2
Use an operating system.

Performance Criteria
a)   Operating system commands are selected efficiently and effectively.
b)   Operation system commands are used effectively,
c)   Operating environment is configured effectively.
d)   File management is performed effectively.
e)   Manufacturer's documentation is used efficiently.

Note on range for the outcome
Commands: task management; file management; environment configuration.
Environment configuration: device settings; system settings.
File management: folder creation; folder deletion; folder un-deletion; folder moving; folder copying; folder renaming; file creation; file deletion; file un-deletion; file moving; file copying; file renaming; file properties; file compression; file decompression.

Evidence Requirements
Performance evidence that the candidate can use the operating system to perform the tasks detailed in PC (a) and PC (b).

Performance evidence that the candidate can configure the operating environment as described in PC (c). Evidence must be show for three tasks with at least one from each item in the range.

Performance evidence that the candidate can utilise the manufacturer's documentation to perform at least three tasks relating to the use of an operating system as detailed in PC (d).

National unit specification: statement of standards (cont)

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OUTCOME 3
Select and use storage media.

Performance Criteria
a)   Selection of storage media is appropriate for intended use.
b)   Media is handled in accordance with manufacturer's instructions.
c)   Operations are carried out efficiently and effectively.
d)   Labelling of media is clear and concise.
e)   Legal requirements are observed.

Note on range for the outcome
Storage media: magnetic; optical.
Use: copy; install software; backup; restore.
Operations: withdraw; return; mount; dismount; format; write protect.
Legal requirements; relating to data protection; relating to copyright; relating to misuse.

Evidence Requirements
Written or oral evidence that the candidate can select storage different media for use in three different tasks with at least one from each item in the range, as detailed in PC (a).

Performance evidence that the candidate can use two type of storage media, one from each category in the range, as detailed in PC (b) to PC (e).

OUTCOME 4
Handle and replace consumables.

Performance Criteria
a)   Selection of consumable is appropriate to device.
b)   Handling of consumable is consistent with manufacturer's instructions.
c)   Installation of consumable is consistent with manufacturer's instructions.
d)   Working practices are safe.

Note on range for the outcome
Consumables: paper; ink.

Evidence Requirements
Performance evidence that the candidate can handle and replace consumables as detailed in PC (a) to PC (d) for a least two items in each category specified in the range.

National unit specification: support notes

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

GUIDANCE ON CONTENT AND CONTEXT
This unit may be delivered as a stand-alone unit or on combination with other units as part of an Information Technology programme. The details of content given earlier provide information on the delivery and assessment of this unit within the context of a coherent course.

This is an introductory level unit and would be suitable for beginners. The unit would be a suitable partner for units covering the use of computer software.

Corresponding to Outcomes 1-4

This unit deals with the most basic elements of computer system operation. At all times through this unit terminology should be clearly explained and candidates encouraged to create a dictionary of the acronyms used.

Outcome 1
This outcome introduced the elements of a computer system. For the purpose of this unit a compute system should be a single user, single processor personal computer system.

Performance criteria (a), (b), (c), require descriptive responses. Descriptions at this level while requiring to be correct need not be too detailed. Support in the form of diagrams should be simple block diagrams which candidates draw and annotate. Description of the external organisation should be at the highest level eg. input devices allow the user to enter data into the computer system, with no need to give examples.

Description for main memory should refer to units of data storage, addresses, memory, and binary data. Reasons for the two-state machine could be given as underpinning knowledge. For backing storage device diagrams should be sued to enhance the descriptive answer. Although there is no need to go into great detail candidates should be made aware of the wide variety of backing storage devices available eg JAZZ, ZIP and optical media, and their performance characteristics ie data transfer rate, storage capacity and access modes. This would link well for Outcome 3 of the unit.

PC (e) is a simple matching exercise. Again where possible a wide range of peripherals should be identified e.g. digital cameras, microphone, optical drives etc.

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Outcome 2
This outcome is practical in its nature. Candidates should be encouraged to utilise tutorial packages such as the Windows 95 tour, which they could access during spare time to consolidate learning. Candidates should be encouraged to utilise manufacturer's documentation particularly one line documentation such as Help files. For this purpose early examples given for operating system exercises should be delivered by going through the procedures specified in the Help files.

Configuring the environment should be kept simple. Items such as setting display settings are useful particularly as many proprietary software packages require users to perform this task.

For the purpose of this unit:

Device: mouse, keyboard, printer, screen;
System: date, time, language.

For PC (c) the term folder is used. A folder is equivalent to a directory. The term compression relates to taking files and making them smaller via a utility program such as WinZip. Decompression is the reverse operation. It may be useful to demonstrate to candidates the different success ratios such compression utilities have with different file formats eg. a text file compared to a graphics file such as JPEG or music file.

File management practice should conform to centre standards. Names must reflect content and ease finding. Data, which belongs together, should be gathered in an appropriate structure of folders. Redundant files should be removed periodically and the backing up of data is encouraged.

Outcome 3
A selection of storage media should be made available to the candidates. Comparisons on the capabilities of the media and their uses should be made. Examples of operations should demonstrate to the candidate the need for effective labelling, e.g. the compression of files covering more than one floppy disk would be a useful exercise. The need to back up data and systems, which are in place within commercial environments, should be discussed. Centre with MIS may wish to invite MIS manager to discuss such issues with candidates.

Examination of the storage requirements for different media elements and current proprietary software would make a useful basis for discussion.

The range statement for operations is to be carried out over the two media elements chosen. This is due to the fact that all operations are not possible on all storage media.

Candidates could be made aware of the implication in law for misuse of computers, software and data. This will re-enforce centre policies relating to the use of computers.

National unit specification: support notes (cont)

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Outcome 4
For the purpose of this unit the range item ink can be related to printer ribbons, toner cartridges, ink cartridges etc.

It is important that good working practice in enforced through this outcome. Candidates should have access to copies of manufacturer's documentation.

Candidates should be given access to a number of devices and a number of consumables eg. continuous stationary and envelopes, ink Jet printers and Dot Matrix printers. A number of devices will enhance the ability for re-assessment and wide the experience of the candidate. Although not required by the unit it would be useful for candidates to investigate the costs associated with different printers using different form of stationary and ink sources.

GUIDANCE ON TEACHING AND LEARNING APPROACHES
A candidate-centred, resource based learning approach is recommended. Candidates will require access to appropriate computer hardware and software at various stages within the unit. To enliven learning the use of a mixture of media is recommended eg video, multimedia presentations. Access to on-line tutorials would be an advantages.

Where possible candidates should be asked to investigate. Candidates could be sourced via magazines or from the Internet.

While distribution of time between the outcomes will vary, candidates might be expected to complete each outcome within the following timescale:

Outcome 1	6 hours
Outcome 2	19 hours
Outcome 3	9 hours
Outcome 4	6 hours

GUIDANCE ON APPROACHES TO ASSESSMENT
Centres may use the instruments of assessment, which are considered to be most appropriate. Examples of instruments of assessment which could be used are as follows:

Outcome 1
Short response exercises.

Outcome 2
A series of practical exercises. Evidence may consist of checklist and observation, hard copy of disk structures, disk submitted as evidence.

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Outcome 3
Restricted response exercise for the selection of storage media.

Practical exercise for the use of two storage media. Checklist and observation providing suitable evidence for this assessment.

Short response questions for underpinning legal requirement observation, which are not covered in the practical exercise.

Outcome 4
Practical exercise for the selection and installation of consumables. Checklist and observation providing suitable evidence for this assessment.

During the work of the unit, candidates should have several opportunities to develop their practical skills and should be assessed at appropriate points. Terminology should be presented in context throughout the unit. Where the candidate is unsuccessful in achieving an assessment, or outcome, provision must be made for additional support and re-assessment.

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 alternative outcomes for units. For information on these, please refer to the SQA document *Guidance on Special Assessment and Certification Arrangements* (SQA, 1998).