National Unit Specification: General Information

UNIT   Multimedia (Intermediate 1)

NUMBER   D978 10

COURSE

SUMMARY
This unit is designed to give candidates a basic introduction to the hardware and software used in multimedia systems and the media elements used in multimedia applications.

OUTCOMES
1   Describe the hardware and software components used in multimedia.
2   Acquire and manipulate media elements for use in a multimedia presentation.
3   Assemble elements to produce a simple multimedia presentation.

RECOMMENDED ENTRY
Access to this unit is at the discretion of the centre.

CREDIT VALUE
1 Credit at Intermediate 1.

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 candidates will produce sufficient evidence of core skill achievement. This means that there is no automatic certification of core skills for this unit.

Administrative Information

Additional copies of this specification can be purchased from the Scottish Qualifications Authority. The cost is £2.50.

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 hardware and software components used in multimedia.

Performance Criteria
a)   Hardware facilities are accurately described.
b)   Software facilities are accurately described.
c)   Multimedia packages are accurately described.

Note on range for the outcome
Hardware facilities: input facilities; manipulation facilities; output facilities.
Software facilities: input facilities; manipulation facilities; output facilities.
Multimedia packages: presentation; authoring.

Evidence Requirements
Oral or written evidence that the candidate can outline the hardware and software facilities used in multimedia as detailed in Performance Criteria C (a) to (c) for all classes in the range.

OUTCOME 2
Acquire and manipulate media elements for use in a multimedia presentation.

Performance Criteria
a)   Existing media elements are efficiently located.
b)   Existing media elements are effectively captured.
c)   Media elements are effectively manipulated.

Note on range for the outcome
Media elements: text; audio; images; drawings.

Evidence Requirements
Performance evidence that the candidate can acquire and manipulate media elements as detailed in Performance Criteria (a) to (c) for all classes in the range.

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OUTCOME 3
Assemble elements to produce a simple multimedia presentation.

Performance Criteria
a)   A suitable topic is chosen for the presentation.
b)   The selection of media elements is appropriate for the presentation.
c)   The presentation imparts information effectively.

Note on range for the outcome
Media elements: text; audio; images; drawings.

Evidence Requirements
Performance evidence that the candidate can assemble elements to produce a simple multimedia presentation as detailed in Performance Criteria (a) to (c) for all classes 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
Corresponding to outcomes 1-3

Outcome 1
This outcome relates to the hardware and software facilities required to create multimedia applications. Coverage should be at a basic level, sufficient to allow candidates to make use of the relevant hardware and software without detailed technical knowledge. Issues relating to the copyright of media elements should be introduced. There is considerable scope for integration of both the teaching and assessment of this outcome with outcomes 2 and 3.

Candidates should be aware of the hardware and software used to create, capture and manipulate the various media elements, ie. text, audio and images (including clipart, original drawings, diagrams, graphs and charts, and video).

Candidates should be aware of how different hardware components can be used to capture data, manipulate it and output it (eg. use of a video capture card to capture video data, a video compression card to compress it and a video display card (eg. MPEG) to display it.

Candidates should be aware of how different software facilities may be used to capture, manipulate and display data, eg. use of scanner software to capture a graphic, use of a bitmap editor to amend it and use of a presentation graphics package as the final display tool.

Candidates should be aware of word processing and desktop publishing software and the differences and similarities between these, as well as the text processing facilities available in multimedia software.

Candidates should be aware of both image capture hardware, eg. scanners, video capture cards and image display hardware, eg. graphics cards, video playback cards. They should also be aware of image processing software, eg. bit-mapped graphics (painting) software, vector graphics (drawing) software and image manipulation software.

Candidates should be aware of the distinction between sampled and synthesised sound and the use of sound cards in the recording of sampled sounds and the playback of synthesised sounds and the use of MIDI instruments as output devices.

Candidates should be aware of the range of multimedia authoring programs available, from straightforward presentation packages through to sophisticated authoring systems.

National unit specification: support notes (cont)

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Outcome 2
This outcome relates to the acquisition and manipulation of media elements for use in a multimedia presentation. There is considerable scope for integration of both the teaching and assessment of this outcome with outcomes 1 and 3.

Candidates should be able to distinguish between the creation of new media elements and the capture of existing elements, eg. the distinction between creating a new drawing using software and scanning an existing drawing, creating a new musical performance by entering MIDI commands and sampling an existing performance.

Candidates should be able to manipulate text characteristics such as font, size, colour and alignment. They should be able to manipulate both bit-mapped and vector graphics by scaling, rotating and translating.

In addition, candidates should be able to enter, edit and play MIDI and be able to sample, edit and play back sampled sounds. Editing facilities should include copying, combining and adding special effects, eg. echo, fade in/out, pan.

Outcome 3
This outcome relates to assembling media elements to produce a multimedia presentation. The term "presentation" is intended to define the level of sophistication of the required product. A sequential presentation incorporating all the required media elements is sufficient to meet the performance criteria: there is no need to incorporate sophisticated techniques such as interaction, branching, or repetition, although these are not prohibited.

For example, a presentation relating to a musical performer might include a biography or career history of the performer with appropriate photographs, a brief discography with pictures of album covers, excerpts from song lyrics accompanied by midi or sampled sound files and possibly a short video clip of a performance. Such a presentation would be unlikely to exceed 10 screens.

There is considerable scope for integration of both the teaching and assessment of this outcome with outcomes 1 and 2.

Candidates should be aware of the range of multimedia software available, from straightforward presentation packages through to sophisticated authoring systems. It is possible to meet the performance criteria for the unit using a simple presentation program.

National unit specification: support notes (cont)

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The range of possible topics is enormous, eg. a current or historical event, a biography, a favourite musical personality or television show. The only major restriction is that the topic chosen must be capable of meeting the required performance criteria. If the choice of topic is made at an early stage, media elements produced or captured for earlier outcomes may be incorporated into the final presentation.

The presentation should not simply be a random selection of media elements. It should have a clear sequential structure showing clear integration between the media elements used. The content of the presentation must be communicated effectively to the audience.

GUIDANCE ON TEACHING AND LEARNING APPROACHES
A candidate-centred, resource-based learning approach is recommended. Candidates will require access to a range of multimedia hardware and software, eg. text processing and DTP software, sound cards and audio processing software, vector and bit-mapped graphics software, scanners and multimedia software. However, in most cases simultaneous access will not be required and in many instances one example of each type of hardware and software will be sufficient for a class.

The recommended timings for each unit are as follows:

        Outcome 1: 10 hours
        Outcome 2: 20 hours
        Outcome 3: 10 hours

These timings are not mandatory. They may not be amended to suit local circumstances.

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
A series of short-answer questions requiring candidates to give written descriptions of hardware and software facilities.

Outcome 2
A series of short practical exercises requiring candidates to capture and manipulate media elements.

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Outcome 3
A practical assignment requiring candidates to assemble elements to produce a multimedia presentation.

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 outcome, provision should be made for additional support and re-assessment.

There are opportunities to integrate assessment within this unit. Instead of assessing outcomes 1 and 2 separately, it would be possible to assess candidates' capability to describe each item of hardware or software at the same time as assessing their ability to use it. If the topic for the presentation required by outcome 3 is made at an early stage, the media elements captured during outcome 2 could form the basis of the presentation.

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).