SCOTTISH QUALIFICATIONS AUTHORITY

National Unit Specification: general information

UNIT Computer Graphics (Higher)

NUMBER D173 12

COURSE Graphic Communication (Higher)

SUMMARY

The purpose of the unit is to develop computer graphic skills related to industrial and commercial practice.

OUTCOMES

1 Produce orthographic and pictorial drawings using a computer-aided draughting package.
2 Produce computer-rendered drawings for promotional purposes using an illustration package.
3 Plan and produce single and double page layouts using a desktop publishing package.
4 Demonstrate knowledge of terminology and hardware associated with computer graphics.

RECOMMENDED ENTRY

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

- Standard Grade Graphic Communication at Grade 1 or 2
- Intermediate 2 Graphic Communication, or equivalent.

CREDIT VALUE

1 credit at Higher.

Administrative Information

Superclass: CE

Publication date: December 1999

Source: Scottish Qualifications Authority

Version: 04

National Unit Specification: General Information (cont)

UNIT Computer Graphics (Higher)

CORE SKILLS

This unit gives automatic certification of the following:

Complete core skills for the unit	IT	Int 2
Additional core skills components for the unit	Planning and Organising	H

Additional information about core skills is published in *Automatic Certification of Core Skills in National Qualifications* (SQA, 1999).

National Unit Specification: statement of standards

UNIT Computer Graphics (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

Produce orthographic and pictorial drawings using a computer-aided draughting package.

Performance criteria

a) Orthographic drawings produced are of an appropriate degree of difficulty and are correct in terms of projection and detail.
b) Pictorial drawings are of an appropriate degree of difficulty and effectively represent the object in terms of detail and proportion.
c) Functional dimensions on orthographic drawings are clear and unambiguous in terms of their positioning and statement of size.

Note on range for this outcome

The following must be included in the selection of CAD drawings: 5 different line types; 4 different dimension types; fillets, arcs, tangents and hatching; pictorial drawings – 2 from isometric, oblique, planometric.

Evidence requirements

Graphical evidence of drawings produced by the candidate for each PC (a) to (c).

OUTCOME 2

Produce computer-rendered drawings for promotional purposes using an illustration package.

Performance criteria

a) The use of computer illustration and presentation techniques is appropriate for the presentation of promotional graphics.
b) The illustration and presentation techniques are effective in terms of visual impact.

Note on range for this outcome

The following must be included in the selection of computer-rendered drawings: a range of illustration graphics showing evidence of the use of illustration and presentations techniques to include colour gradients, imported files, highlights and lettering.

Evidence requirements

Graphical evidence of rendered drawings produced by the candidate for each PC (a) to (b).

National Unit Specification: statement of standards (cont)

UNIT Computer Graphics (Higher)

OUTCOME 3

Plan and produce single and double page layouts, using a desktop publishing package.

Performance criteria

a) The stages involved in the planning and production of a DTP document are carried out correctly.
b) The page layouts produced show effective use of DTP techniques.

Note on range for this outcome

The following must be included in the selection of DTP documents: evidence of planning to include research information, annotated thumbnail sketches and rough layouts; single- and double-page layouts to include appropriate text style, imported and manipulated graphics and integration of text and graphics.

Evidence requirements

Graphical and written evidence of the candidate's ability to plan and produce DTP layouts as specified in PCs (a) and (b).

OUTCOME 4

Demonstrate knowledge of terminology and hardware associated with computer graphics.

Performance criteria

a) Common terms used in computer graphics are described correctly.
b) The uses of common hardware devices are described correctly.

Evidence requirements

Written evidence of the candidate's ability to demonstrate knowledge of terminology and hardware associated with computer graphics as specified in PCs (a) and (b).

National Unit Specification: support notes

UNIT Computer Graphics (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

Knowledge and understanding of manual orthographic and pictorial drawing will be used in computer-aided draughting. Knowledge and understanding of illustration and presentation will be used with an illustration package in producing computer-rendered drawings. In the desktop publishing area, graphics and text will be brought together. The unit will also develop knowledge of the related terminology and hardware. The relevant range of terminology can be found in the course content pages of the Arrangements document.

With regard to hardware, the relevant range includes modems, scanners, video digitizers, video/still cameras, plotters, printers and monitors.

Opportunities should be provided to relate the work to the industrial and commercial world through choice of drawing examples, industrial visits, videos and personal experience. The types of drawing skills developed should be exemplified by the place they occupy in the progression of a design from concept to marketing. Although discrete items of new knowledge and skills have to be introduced, it is suggested that many aspects of the unit can be dealt with in an integrated manner with other units.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

Work should be integrated, to cover more than one topic, where it is natural to do so.

The unit could make use of knowledge from the units *Technical Graphics 1* and *Technical Graphics 2*. The unit will develop techniques of computer graphics for producing drawings and how to integrate graphics and text in the production of a graphic presentation.

Familiarity with the main features of software packages can be gained through exercises. Drawings produced for pictorial representation in promotional work can be integrated with work for computer-rendering and presentation.

Candidates should be made aware of the scope of more powerful software, popular within industry and commerce. Specific practice in becoming familiar with the software should lead into applications such as importing graphics into a text document.

Demonstrations, use of video resources, or practical exercises should be used to illustrate the concept of 3D drawing and modelling and the scope, purpose and application of computer graphics.

National Unit Specification: support notes (cont)

UNIT Computer Graphics (Higher)

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Centres may use the instruments of assessment that are considered to be most appropriate. Examples of instruments of assessment which could be used to generate and gather evidence of achievement are as follows.

A holistic approach is recommended for assessment of work on hard copy.
The candidate should produce a range of production and promotional drawings using CAD and CAG techniques and making use of knowledge gained in units *Technical Graphics 1 (H)* and *Technical Graphics 2 (H)*, for example, pictorial drawing, orthographic views, sections, dimensions and dimensional tolerances.

The candidate should produce a range of promotional graphics.

The candidate should produce a range of layouts showing a mix of text, graphic and imported information, using work created elsewhere.

Appropriate contexts could include: reports, technical instructions, learning materials, in-house newsletters, and promotional graphics.

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 for Candidates with Special Needs/Candidates whose First Language is not English* (SQA, 1998).