SCOTTISH QUALIFICATIONS AUTHORITY

GRAPHIC COMMUNICATION
Intermediate 2

Third edition – published December 1999

SCOTTISH QUALIFICATIONS AUTHORITY

NOTES OF CHANGES TO ARRANGEMENTS
THIRD EDITION PUBLISHED ON CD-ROM DECEMBER 1999

COURSE TITLE: Graphic Communication (Intermediate 2)

COURSE NUMBER: C033 11

National Course Specification

Course Details: Core skills statements expanded

National Unit Specification

All Units: Core skills statements expanded

SCOTTISH QUALIFICATIONS AUTHORITY

National Course Specification

GRAPHIC COMMUNICATION (INTERMEDIATE 2)

COURSE NUMBER C033 11

COURSE STRUCTURE

This course has three mandatory units as follows:

D171 11	***Technical Graphics 1 (Int 2)***	***1 credit (40 hours)***
D172 11	***Technical Graphics 2 (Int 2)***	***1 credit (40 hours)***
D173 11	***Computer Graphics (Int 2)***	***1 credit (40 hours)***

In common with all courses, this course includes 40 hours over and above the 120 hours for the component units. This is for induction, extending the range of learning and teaching approaches, support, consolidation, integration of learning and preparation for external assessment. This time is an important element of the course and advice on its use is included in the course details.

RECOMMENDED ENTRY

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

- Standard Grade Graphic Communication at grade 3 or 4

Administrative Information

Publication date: December 1999

Source: Scottish Qualifications Authority

Version: 03

National Course Specification (cont)

COURSE Graphic Communication (Intermediate 2)

CORE SKILLS

This course gives automatic certification of the following:

Complete core skills for the course IT Int 1

Additional core skills components for the course None

For information about the automatic certification of core skills for any individual unit in this course, please refer to the general information section at the beginning of the unit.

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

National Course Specification: course details

COURSE Graphic Communication (Intermediate 2)

RATIONALE

Communication is frequently facilitated by the use of graphics and, in particular, by the use of technical graphics in construction, engineering and consumer contexts. The creation and interpretation of drawings are generic skills useful in employment and as life skills in a world where communication increasingly relies upon graphics.

The course develops knowledge and skills in sketching and drawing everyday items in orthographic and pictorial projections using both manual and computer-aided methods. Candidates will develop an understanding of the need for clear and accurate drawings and will gain knowledge of relevant British Standards.

Computers will be used in learning and teaching and candidates will work with computer-aided draughting (CAD) and other packages, thus widening their appreciation of the role of information technology within Graphic Communication.

In addition, candidates will have the opportunity to develop analytical thinking and creativity. Acquiring knowledge of the importance of graphics in an industrial context will provide a perspective on commerce and industry. The course makes a significant contribution to developing technological capability as defined in the Scottish CCC document *Technology Education in Scottish Schools* (1996).

The course is designed to fulfil the following aims:

- develop aspects of technological capability
- develop technological creativity in relation to the use of computer packages
- develop the ability to read and interpret a range of drawings
- develop the ability to communicate graphical information using both manual and computer graphic skills and techniques
- develop knowledge of, and the ability to use, software packages for graphic communication

COURSE CONTENT

Summary of the course outcomes

Technical Graphics 1 (Int 2)

1 Draw isometric, planometric and oblique views of everyday items.
2 Construct and draw views of right prisms, pyramids, cylinders and cones in orthographic projection.
3 Sketch perspective views and apply freehand illustration techniques.

Technical Graphics 2 (Int 2)

1 Produce sketches and drawings of everyday items and locations.
2 Produce drawings of assemblies and sectional views in orthographic projection, working from orthographic or pictorial details of the components.
3 Apply knowledge of British Standards conventions in the production of orthographic and location drawings.

National Course Specification: course details (cont)

COURSE Graphic Communication (Intermediate 2)

Graphic Communication: Computer Graphics (Int 2)

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 Produce single or double page layouts using a desktop publishing package.
4 Demonstrate knowledge associated with computer graphics.

National Course Specification: course details (cont)

COURSE Graphic Communication (Intermediate 2)

DETAILS OF THE SYLLABUS WITH CROSS-REFERENCE TO THE UNIT OUTCOMES

Abbreviations: O1 - Outcome 1 (O2, Outcome 2, and so on)

Technical Graphics 1 **CONTENT**	**OUTCOME**	**NOTES**
Pictorial drawings	O1	Planometric views of room layouts, for example, kitchens. Oblique views of full and part sections of everyday items. Exploded isometric views of everyday items working from orthographic details of the assembly. Isometric and oblique views of an assembly of two or three main components, working from orthographic details of the components.
Orthographic drawings	O2	Drawings of geometric solids in third angle projection limited to elevations, end elevations, plans, true shapes and surface developments of square, hexagonal and octagonal right prisms and pyramids, cylinders and cones.
Pictorial sketches	O3	1- and 2-point perspective sketches of everyday items.
Freehand llustration	O3	The use of colour, light, shading, tone and texture in the rendering of sketches.

Technical Graphics 2 **CONTENT**	**OUTCOME**	**NOTES**
Orthographic sketches	O1	Sketches of everyday items and locations
Orthographic drawings	O1	Drawings of everyday items in third angle projection. Drawings of locations.
	O2	Drawings of assemblies and sectional views in third angle projection, working from orthographic or pictorial details of the components. Limited to three main components involving straight-edged and curved surfaces.
Knowledge of British Standards	O3	Knowledge of the British Standards conventions regarding line types, dimensions and locations.

National Course Specification: course details (cont)

COURSE Graphic Communication (Intermediate 2)

Computer Graphics **CONTENT**	**OUTCOME**	**NOTES**
Orthographic drawings	O1	Drawings of everyday items produced by use of a CAD package, in third angle projection.
Pictorial drawings	O1	Isometric, planometric and oblique drawings of everyday items produced by the use of a CAD package or similar.
Promotional graphics	O2	Presentations to show the effective use of graphics, text and colour.
Desktop publishing	O3	Use of a DTP package to produce effective layouts showing the electronic integration of text and graphics.
Terminology	O4	Knowledge of common terms associated with computer graphics.
Main benefits of CAG	O4	Knowledge of the main benefits of computer graphics in industry.

ASSESSMENT

To gain the award of the course, the candidate must achieve all the component units of the course as well as the external assessment. External assessment will provide the basis for grading attainment in the course award.

When units are taken as component parts of a course, candidates will have the opportunity to achieve levels beyond that required to attain each of the unit outcomes. This attainment may, where appropriate, be recorded and used to contribute towards course estimates and to provide evidence for appeals.

Further information on the key principles of assessment are provided in the paper *Assessment*, published in May 1996.

The external assessment of the course will be based on two aspects:

Part 1 – examination paper, sampling aspects from all three units.
Part 2 – Computer Graphics Folio.

The Computer Graphics Folio will be internally assessed and externally moderated.

National Course Specification: course details (cont)

COURSE Graphic Communication (Intermediate 2)

Part 1

Examination paper

The 2½ hour examination paper will test knowledge and drawing skills across all three units. The questions will focus mainly on manual drawing and sketching. Candidates should attempt all questions.

- knowledge: short response questions on the benefits of computer graphics in industry, British Standards and computer terminology
- drawing: questions on manual drawing and sketching, testing application of pictorial and orthographic projections

70 marks

Part 2

Computer Graphics Folio 30 marks

Each candidate will produce a range of computer graphics which will provide evidence for the internal assessment of the unit Computer Graphics (Int 2). From this evidence, the best work should be selected, in discussion with the teacher, for inclusion in the Computer Graphics folio. Additional work for this folio can be created within the extra 40 hours allocated to the course, but the time required for additional work should not exceed 15 hours.

Content of the Computer Graphics Folio

Production drawings	CAD package	1 detailed orthographic drawing of everyday object 1 orthographic of a component, showing main dimensions
	CAD package or similar	1 isometric or oblique drawing
Promotional drawings	illustration package	1 presentation graphic, pictorial or orthographic
	desktop publishing package	1 layout document

The standard and complexity of the material produced should reflect the course requirements. Support material and exemplar material may be produced to demonstrate the required standard.

It should be noted that graphics selected for inclusion in the Computer Graphics Folio must be the candidate's own work. Work produced by following a directed approach, such as a step-by-step guide OR THE USE OF "PAGE WIZARDS", is not valid for assessment purposes.

National Course Specification: course details (cont)

COURSE Graphic Communication (Intermediate 2)

GRADE DESCRIPTIONS

The grade of award (A, B or C) will be based on the total score obtained from the two elements of external course assessment. The descriptions below indicate the nature of achievement which is required for the award of grade C and grade A in the course assessment.

For performance at grade C, the candidate should be able to:

- apply manual graphic techniques to produce: pictorial drawings, perspective sketches and orthographic sketches of everyday items; orthographic drawings of simple geometric solids; orthographic drawings with dimensions of everyday items and locations, assemblies and sections
- use computer hardware and software to produce: straightforward orthographic and pictorial drawings using a computer-aided draughting package; computer rendered drawings using an illustration package; page layouts using a desktop publishing package
- demonstrate knowledge of relevant British Standards conventions, the common terms associated with computer graphics and the main benefits of the use of computer graphics in industry

For performance at grade A, the candidate should be able to:

- apply manual graphic techniques to produce: accurate pictorial drawings and well proportioned perspective sketches of everyday items; accurate and precise orthographic drawings of simple geometric solids; correctly proportioned orthographic sketches and accurate orthographic drawings of everyday items, locations, assemblies and sections with dimensions where appropriate
- use computer hardware and software to produce: orthographic and pictorial drawings effectively representing the object using a computer-aided draughting package; effective presentations of computer rendered drawings using an illustration package; well presented layouts using a desktop publishing package
- demonstrate detailed knowledge of relevant British Standards conventions, the common terms associate with computer graphics and the main benefits of the use of computer graphics in industry

APPROACHES TO LEARNING AND TEACHING

Where appropriate, arrangements should be made to ensure that there will be no artificial barriers to learning and assessment. The nature of a candidate's special needs should be taken into account when planning learning experiences and selecting assessment instruments. Alternative arrangements can be made as necessary.

The course should be structured around a series of tasks, some of which may integrate content across units where appropriate. To encourage motivation, it is recommended that the objects drawn are everyday items which are relevant to the candidates. The same objects can be used for both orthographic and pictorial drawings, thus allowing candidates to appreciate the use of different formats for different purposes.

Throughout the course it would be helpful, especially for candidates who intend progressing to Higher Graphic Communication, to introduce the terms preliminary, production and promotional graphics.

Illustration and presentation computer graphics should be dealt with by encouraging candidates to enhance their own computer-produced drawings, in both pictorial and orthographic projection.

Work on computer graphics should be based around the use of three software packages that reflect some of the features which would be expected in industrial packages. Candidates should appreciate that there can be a natural progression from computer-aided draughting to use of an illustration package to use of a desktop publishing package, all based around the same graphics item.

SPECIAL NEEDS

This course 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).

SUBJECT GUIDES

A Subject Guide to accompany the Arrangements documents has been produced by the Higher Still Development Unit (HSDU) in partnership with the Scottish Consultative Council on the Curriculum (SCCC) and Scottish Further Education Unit (SFEU). The Guide provides further advice and information about:

- support materials for each course
- learning and teaching approaches in addition to the information provided in the Arrangements document
- assessment
- ensuring appropriate access for candidates with special educational needs

The Subject Guide is intended to support the information contained in the Arrangements document. The SQA Arrangements documents contain the standards against which candidates are assessed.

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National Unit Specification: general information

UNIT Technical Graphics 1 (Intermediate 2)

NUMBER D171 11

COURSE Graphic Communication (Intermediate 2)

SUMMARY

This unit offers opportunities to gain experience in pictorial projection methods, freehand illustration and geometric constructions.

OUTCOMES

1 Draw isometric, planometric and oblique views of everyday items.
2 Construct and draw views of right prisms, pyramids, cylinders and cones in orthographic projection.
3 Sketch perspective views and apply freehand illustration techniques.

RECOMMENDED ENTRY

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

- Standard Grade Graphic Communication at grade 3 or 4

CREDIT VALUE

1 credit at Intermediate 2.

Administrative Information

Superclass: VF

Publication date: December 1999

Source: Scottish Qualifications Authority

Version: 03

National Unit Specification: general information (cont)

UNIT Technical Graphics 1 (Intermediate 2)

CORE SKILLS

There is no automatic certification of core skills or core skills components in this unit.

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 Technical Graphics 1 (Intermediate 2)

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

Draw isometric, planometric and oblique views of everyday items.

Performance criteria

(a) Isometric drawings of consumer products are neat and accurate.
(b) Planometric drawings of room interiors are neat and represent the subject matter.
(c) Oblique drawings of engineered components are neat and accurate.
(d) Exploded pictorial views are sufficiently detailed to define clearly the component parts and their relative positions.
(e) The production of drawings, under test conditions, shows competence in applying a selection of the techniques of pictorial representation.

Evidence requirements

Graphical evidence for PCs (a) to (d). Drawing test for PC(e) which samples some of the techniques listed in PCs (a) to (d).

OUTCOME 2

Construct and draw views of right prisms, pyramids, cylinders and cones in orthographic projection.

Performance criteria

(a) Related views produced represent clearly the geometric form and are accurate in terms of scale, overall size and position
(b) Geometric constructions are accurate and appropriate.
(c) True shapes and surface developments are accurate in terms of scale and overall size.
(d) The production of drawings, under test conditions, shows competence in applying a selection of the techniques listed in PCs (a) to (c).

Note on range for the outcome

Orthographic projection: third angle projection.

Evidence requirements

Graphical evidence for PCs (a) to (c). Drawing test for PC (d) which samples some of the techniques listed in PCs (a) to (c).

National Unit Specification: statement of standards (cont)

UNIT Technical Graphics 1 (Intermediate 2)

OUTCOME 3

Sketch perspective views and apply freehand illustration techniques.

Performance criteria

(a) Perspective sketches are in good proportion and sufficiently detailed to represent the object clearly.
(b) The freehand illustration techniques applied are appropriate.
(c) Rendering and use of colour is effective in enhancing sketches to represent various materials.

Note on range for the outcome

Rendering to represent light, shade, tone and texture.

Evidence requirements

Graphical evidence for PCs (a) to (c).

National Unit Specification: support notes

UNIT Technical Graphics 1 (Intermediate 2)

This part of the unit specification is offered as guidance. The support notes are not mandatory.

While the time allocated to this unit is at the discretion of the centre, the notional design length is 40 hours.

This unit may be taken as a free-standing unit or as part of the Intermediate 2 course in Graphic Communication. It is particularly suitable for candidates seeking to expand their sketching and drawing techniques.

GUIDANCE ON CONTENT AND CONTEXT FOR THIS UNIT

Practice in freehand sketching and detailed drawing will introduce the candidates to a practical need for good graphic skills. Opportunities should be provided to relate the work to the interest of candidates, industry and commerce through the choice of drawing examples. Throughout the unit, illustration techniques should be integrated, to allow candidates to appreciate the use of such techniques to enhance and clarify their work.

For candidates following the course, the pictorial projection systems used should be related to the CAD work in the Computer Graphics unit, to allow candidates to see the links between manual drawing and CAD. Opportunities should be taken to combine work from this unit with the other two units.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

Each topic should be covered through the use of graded tasks and information sheets, where appropriate. The tasks should take candidates from an introductory level up to the unit standard of performance.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

The recommended instruments of assessment that should be used to generate and gather evidence of achievement are as follows:

Outcomes 1-3: A folio of work, based on practical exercises, which each candidate has compiled working independently with occasional guidance from the teacher/lecturer.

It should be noted that graphics selected for assessment in this unit folio must be the candidate’s own work. Work produced by following a directed approach or copying from given views, is not valid for assessment purposes.

Outcomes 1-2: A drawing test to assess the extent to which the candidate's experience in drawing has been consolidated and mastered.

National Unit Specification: support notes (cont)

UNIT Technical Graphics 1 (Intermediate 2)

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).

SCOTTISH QUALIFICATIONS AUTHORITY

National Unit Specification: general information

UNIT Technical Graphics 2 (Intermediate 2)

NUMBER D172 11

COURSE Graphic Communication (Intermediate 2)

SUMMARY

This unit offers opportunities for candidates to gain knowledge and experience of the production of detailed orthographic sketches and drawings. Candidates should be able to build on previous experience of Graphic Communication and to gain greater confidence in the subject.

OUTCOMES

1 Produce sketches and drawings of everyday items and locations.
2 Produce drawings of assemblies and sectional views in orthographic projection, working from orthographic or pictorial details of the components.
3 Apply knowledge of British Standards conventions in the production of orthographic and location drawings.

RECOMMENDED ENTRY

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

- Standard Grade Graphic Communication at grade 3 and 4

CREDIT VALUE

1 credit at Intermediate 2.

Administrative Information

Superclass: VF

Publication date: December 1999

Source: Scottish Qualifications Authority

Version: 03

National Unit Specification: general information (cont)

UNIT Technical Graphics 2 (Intermediate 2)

CORE SKILLS

There is no automatic certification of core skills or core skills components in this unit.

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 Technical Graphics 2 (Intermediate 2)

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 sketches and drawings of everyday items and locations.

Performance criteria

(a) Drawings and preliminary sketches are sufficiently detailed to define items and locations clearly.
(b) Sketches are in correct proportion and to an appropriate scale.
(c) Drawings produced are accurate in terms of projection, scale and overall size.

Note on range for the outcome

Sketches and drawings: in third angle orthographic projection.

Evidence requirements

Graphical evidence for PCs (a) to (c).

OUTCOME 2

Produce drawings of assemblies and sectional views in orthographic projection, working from orthographic or pictorial details of the components.

Performance criteria

(a) Drawings produced of assemblies are accurate in terms of the relative position of component parts.
(b) Drawings produced of sectional views illustrate relevant detail correctly.
(c) Drawings produced are in accordance with the relevant parts of PP7308.
(d) The production of drawings, under test conditions, shows competence in applying a selection of techniques listed in PCs (a) to (c).

Note on range for the outcome

Assemblies: three main components, involving straight-edged and curved surfaces.

Orthographic projection: third angle projection.

Evidence requirements

Graphical evidence for PCs (a) to (c). Test evidence for PC (d).

National Unit Specification: statement of standards (cont)

UNIT Technical Graphics 2 (Intermediate 2)

OUTCOME 3

Apply knowledge of British Standards conventions in the production of orthographic and location drawings.

Performance criteria

(a) Use of a range of line types is correct.
(b) Dimensions are shown in accordance with British Standards conventions.
(c) Drawings produced of locations represent desired features in accordance with PP7320.

Note on range for the outcome

Line types: visible outline, hidden details, centre lines, cutting planes, hatching.
Dimensions: horizontal, vertical, radius, diameter.

Evidence requirements

Graphical evidence for PCs (a) to (c).

National Unit Specification: support notes

UNIT Technical Graphics 2 (Intermediate 2)

This part of the unit specification is offered as guidance. The support notes are not mandatory.

While the time allocated to this unit is at the discretion of the centre, the notional design length is 40 hours.

This unit may be taken as a free-standing unit or as part of the Intermediate 2 Graphic Communication course. It is particularly suitable for candidates undertaking an introduction to technical draughting.

GUIDANCE ON CONTENT AND CONTEXT FOR THIS UNIT

The unit allows candidates to gain experience in detailed sketching and drawing techniques, to develop a greater understanding of the need for orthographic views and to develop an awareness of the importance of British Standards.

Opportunities should be provided to relate the work to the interests of candidates, industry and commerce through the choice of drawing examples.

For candidates following the course, work should be integrated with that for the other units to help candidates appreciate how manual drawing skills are linked to computer-aided work.

A common product could be used to demonstrate sketching (preliminary) and orthographic drawing (production) to help candidates to understand the use of preliminary and production graphics. The same product could be used in other units of the course. However, it should be recognised that candidates may be more motivated to draw different products.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

Each topic should be covered through the use of graded tasks and information sheets, where appropriate. The tasks should take candidates from an introductory level up to the unit standard of performance. Source material may be derived from pictorial views of real objects.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

The recommended instruments of assessment that should be used to generate and gather evidence of achievement are as follows:

Outcomes 1-3: A folio of work, based on practical exercises, which each candidate has compiled working independently with occasional guidance from the teacher/lecturer.

It should be noted that graphics selected for assessment in this unit folio must be the candidate's own work. Work produced by following a directed approach or copying from given views, is not valid for assessment purposes.

Outcome 2: A drawing test to assess the extent to which the candidate's experience in drawing has been consolidated and mastered.

National Unit Specification: support notes (cont)

UNIT Technical Graphics 2 (Intermediate 2)

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).

SCOTTISH QUALIFICATIONS AUTHORITY

National Unit Specification: general information

UNIT Computer Graphics (Intermediate 2)

NUMBER D173 11

COURSE Graphic Communication (Intermediate 2)

SUMMARY

This unit develops skills in the use of computer-aided graphic packages.

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 Produce single or double page layouts using a desktop publishing package.
4 Demonstrate knowledge associated with computer graphics.

RECOMMENDED ENTRY

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

- Standard Grade Graphic Communication at grade 3 or 4

CREDIT VALUE

1 credit at Intermediate 2.

Administrative Information

Superclass: CE

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National Unit Specification: general information (cont)

UNIT Computer Graphics (Intermediate 2)

CORE SKILLS

This unit gives automatic certification of the following:

Complete core skills for the unit	IT	Int 1
Additional core skills components for the unit	None	

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 (Intermediate 2)

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 produced are of an appropriate degree of difficulty and effectively represent the object in terms of detail and proportion.
(c) Overall dimensions on orthographic drawings are clear and unambiguous in terms of their positioning and statement of size.

Note on range for the outcome

The following must be included in the selection of CAD drawings: 4 different line types; 3 different dimension types; fillets, arcs; one pictorial drawing either isometric, oblique or planometric; perspectives.

Orthographic drawings: in third angle projection.

Evidence requirements

Graphical evidence of drawings produced by the candidate for PCs (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 presentations produced show effective combinations of graphics, text and colour.

Note on range for the 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 and pattern fills, colour gradients and lettering.

Evidence requirements

Graphical evidence of rendered drawings produced by the candidate for PCs (a) and (b).

National Unit Specification: statement of standards (cont)

UNIT Computer Graphics (Intermediate 2)

OUTCOME 3

Produce single or double page layouts, using a desktop publishing package.

Performance criteria

(a) Layouts produced show the successful importation of graphics and the importation or creation of text.
(b) The layouts produced are effective and show integration of text and graphics.

Note on range for the outcome

The following must be included in the selection of DTP documents: single or double page layouts to include appropriate use of text style and integration of text and graphics.

Evidence requirements

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

OUTCOME 4

Demonstrate knowledge associated with computer graphics.

Performance criteria

(a) Common terms are identified correctly.
(b) The main benefits of the use of computer graphics in industry are described clearly.

Evidence requirements

Written evidence for PCs (a) and (b).

National Unit Specification: support notes

UNIT Computer Graphics (Intermediate 2)

This part of the unit specification is offered as guidance. The support notes are not mandatory.

While the time allocated to this unit is at the discretion of the centre, the notional design length is 40 hours.

This may be taken as a free-standing unit or as part of the Intermediate 2 course in Graphic Communication. It is particularly suitable for candidates undertaking an introduction to a variety of computer-aided packages.

GUIDANCE ON CONTENT AND CONTEXT FOR THIS UNIT

The unit will deal with the use of three commercially available computer packages, i.e. computer-aided draughting (CAD), desktop publishing (DTP) and an illustration package. These will be used to solve problems and present ideas that candidates might realistically expect to find in a vocational or leisure environment.

Candidates will gain experience in producing orthographic and pictorial views using a CAD package, in using an illustration package to enhance a graphic item in terms of colour, impact and presentation, and in using a DTP package to produce effective layouts involving graphics and text. Candidates will become familiar with common terms associated with computer graphics and gain knowledge of the main benefits of CAG in industry. Terminology should include:

CAD: zoom, copy, scale, rotate, mirror move, array (polar or ring, rectangular), fill, group, linestyles, layering.

Illustration: cut, copy, paste, colour gradients.

D.T.P.: headers, footers, importing text, importing graphics, columns, page orientation.

Throughout this unit, safety should be stressed, along with good computer housekeeping, shutdown procedures, safe storage of files and continual saving of work. Care and correct use of equipment should be an integral part of all activities.

Opportunities should be provided to relate the work to the interests of candidates, industry and commerce through the choice of drawing examples.

For candidates following the course, the work of this unit should help to consolidate aspects taught in the other two units.

National Unit Specification: support notes (cont)

UNIT Computer Graphics (Intermediate 2)

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

Candidates should be introduced to each package by following step-by-step guides. Having gained experience and familiarity with these packages, candidates should tackle specific tasks on their own with occasional guidance.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

The recommended instruments of assessment that should be used to generate and gather evidence of achievement are as follows:

Outcomes 1-3: A folio of work based on practical exercises to assess the candidate's ability in orthographic and pictorial drawing, DTP and illustration and presentation.

It should be noted that graphics selected for assessment in this unit folio must be the candidate's own work. Work produced by following a directed approach, such as a step by step guide, is not valid for assessment purposes.

Outcome 4: A short written test to assess the candidate's awareness of terminology and the main benefits of computer graphics in industry. The test should be aimed at a sample of the range of terminology associated with computer graphics.

A common product used to demonstrate orthographic drawing (production) and computer and manual illustration and presentation (promotional) would help candidates to understand and see the use of production 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).