

**GRAPHIC COMMUNICATION**  
**Intermediate 1**

**2nd Edition — October 2007**

## **NOTE OF CHANGES TO ARRANGEMENTS 2ND EDITION PUBLISHED OCTOBER 2007**

**COURSE TITLE** Graphic Communication

**COURSE NUMBER:** C033 10

### **National Course Specification:**

Course Details Course Content-Pictorial Drawings-Outcome 1 notes expanded to provide clarification.  
Core skills information added.

### **National Unit Specification:**

D171 10 Technical Graphics (Intermediate 1) Appendix-Outcome 1 mandatory content expanded to provide clarification.  
Core skills information added.

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### **Administrative Information**

**Publication date:** October 2007

**Source:** Scottish Qualifications Authority

**Version:** 02

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## National Course Specification

### Graphic Communication (Intermediate 1)

**COURSE CODE**                    **C033 10**

#### COURSE STRUCTURE

This Course has three mandatory Units. The mandatory Units are:

<i>D171 10</i>	<i>Technical Graphics 1 (Intermediate 1)</i>	<i>1 credit (40 hours)</i>
<i>D172 10</i>	<i>Technical Graphics 2 (Intermediate 1)</i>	<i>1 credit (40 hours)</i>
<i>D173 10</i>	<i>Computer Graphics (Intermediate 1)</i>	<i>1 credit (40 hours)</i>

All Courses include 40 hours over and above the 120 hours for the Units. This may be used for induction, extending the range of learning and teaching approaches, support, consolidation, integration of learning and preparation for Course assessment.

#### RECOMMENDED ENTRY

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

- ◆ Standard Grade Graphic Communication at Foundation level

#### PROGRESSION

This Course or its Units may provide progression to:

- ◆ Intermediate 2 Graphic Communication Course or Units

#### CREDIT VALUE

The Intermediate 1 Course in Graphic Communication is allocated 24 SCQF credit points at SCQF level 4.

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**Version:**                    02

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*SCQF points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

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**Publication date:** October 2007

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**Version:** 02

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## **National Course Specification: (cont)**

**COURSE**            Graphic Communication (Intermediate 1)

### **CORE SKILLS**

Achievement of this Course gives automatic certification of the following:

- ◆ Complete Core Skill            Using Information Technology at SCQF level 4
- ◆ Core Skill Component(s)    Using Graphical Information at SCQF level 4

## National Course Specification: Course details (cont)

**COURSE**            Graphic Communication (Intermediate 1)

### **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 *Intermediate 1 Graphic Communication* Course is suitable for those candidates wishing to build on previous experience of Graphic Communication or those candidates who have no previous qualifications or experience and wish to gain an introductory qualification as part of a general education or as a first step to more specialised study. The *Intermediate 1 Graphic Communication* Course develops knowledge and practical application of sketching and drawing everyday items in orthographic and pictorial projections and creating colour illustrations, using both manual and computer-aided methods. Candidates will develop an understanding of how to use graphics to communicate more clearly and effectively. Candidates will also be made aware 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 and the world today.

In addition, candidates will have the opportunity to develop analytical thinking and creativity. The Course makes a significant contribution to developing technological capability.

The *Intermediate 1 Graphic Communication* 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 communicate graphical information using both manual and computer graphic skills and techniques
- ◆ foster an awareness of the importance of graphics as a form of communication
- ◆ develop the ability to read and interpret a range of drawings
- ◆ develop knowledge of, and the ability to use, software packages for graphic communication

## National Course Specification: Course details (cont)

**COURSE**            Graphic Communication (Intermediate 1)

### COURSE CONTENT

This Course consists of three mandatory Units.

- ◆ Technical Graphics 1 (Intermediate 1)
- ◆ Technical Graphics 2 (Intermediate 1)
- ◆ Computer Graphics (Intermediate 1)

All of the Course content will be subject to sampling in the Course Assessment.

The Course content is summarised below:

#### Technical Graphics 1 (Intermediate 1)

Content	Outcome	Notes
Pictorial Drawings	1	<ul style="list-style-type: none"><li>◆ Isometric views of simple straight-edged everyday objects, working from orthographic details of the objects.</li><li>◆ Exploded isometric views of only two component parts, working from orthographic details of the components.</li><li>◆ Simple planometric views of architectural related layouts incorporating a single straight-edged object, working from orthographic details of the object.</li></ul>
Orthographic Drawings	2	<ul style="list-style-type: none"><li>◆ Drawings of geometric forms (solid, hollow, uncut and single cut) in third angle projection limited to elevations, end elevations, plans and surface developments of right cylinders, square and equilateral triangular prisms and pyramids.</li></ul>
Pictorial Sketches	3	<ul style="list-style-type: none"><li>◆ Pictorial sketches of simple everyday items. Any of the following pictorial projections can be used, eg isometric, oblique, planometric, one and two point perspective.</li></ul>
Manual Illustration	3	<ul style="list-style-type: none"><li>◆ Manual illustration to include the use of colour, light, shade and tone in rendering, eg pencil, colour pencil, marker pen, pastels.</li></ul>
Colour Theory	4	<ul style="list-style-type: none"><li>◆ Understand the colour wheel.</li><li>◆ Recognise the use of colour in relation to effect, ie harmonising/contrasting, advancing/receding and warm/cold.</li><li>◆ Tint and shade.</li></ul>

## National Course Specification: Course details (cont)

### COURSE Graphic Communication (Intermediate 1)

#### Technical Graphics 2 (Intermediate 1)

Content	Outcome	Notes
Orthographic sketches	1	<ul style="list-style-type: none"><li>◆ Sketch single views of everyday items.</li><li>◆ Sketch two related views in orthographic projection.</li></ul>
Orthographic drawings	1	<ul style="list-style-type: none"><li>◆ Drawings of everyday items in third angle projection.</li></ul>
	2	<ul style="list-style-type: none"><li>◆ Drawings of simple two part assemblies.</li><li>◆ Sectional drawings limited to two part assemblies.</li><li>◆ Drawings of assemblies and products to reveal internal features.</li><li>◆ Draw objects to a given scale (1:1, 1:2, 2:1).</li></ul>
Knowledge of British Standards	3	<ul style="list-style-type: none"><li>◆ Show dimensions on orthographic views.</li><li>◆ Correct use and identification of common drawing conventions to include line type applications (visible outline, hidden details, centre lines, cutting planes, hatching) and dimensioning (horizontal, vertical, radius and diameter).</li></ul>
Interpret detailed drawings and diagrams	4	<ul style="list-style-type: none"><li>◆ Extract information from different types of diagrams.</li><li>◆ Identify the following British Standards architectural symbols — (sink, sinktop, wash basin, wc, shower tray, lamp, switch, socket, door).</li><li>◆ Identify the third angle projection symbol.</li></ul>



## National Course Specification: Course details (cont)

### COURSE Graphic Communication (Intermediate 1)

#### Computer Graphics (Intermediate 1)

Content	Outcome	Notes
Computer-Aided Draughting (CAD)-orthographic and pictorial	1	<ul style="list-style-type: none"> <li>◆ Produce orthographic and pictorial drawings of simple everyday objects.</li> <li>◆ Apply dimensions to orthographic drawings.</li> </ul>
Illustration and Presentation	2	<ul style="list-style-type: none"> <li>◆ Create a single page presentation containing text and graphics using illustration software.</li> <li>◆ Illustration and presentation techniques: light, shade and tonal scale; highlights, reflections and shadows; gradients.</li> <li>◆ The presentation could be for example a poster, graph, chart or display.</li> </ul>
Desktop Publishing (DTP) document	3	<ul style="list-style-type: none"> <li>◆ Create a single page layout document containing a body of text (contained within one or more columns) and one or more graphic items using desktop publishing software.</li> <li>◆ The layout should contain at least one imported graphic item. Text may be typed or imported (for example: from the Internet, CD-ROM, OCR, etc).</li> <li>◆ Appropriate meaningful text should be used and not lorem ipsum or other irrelevant text.</li> </ul>
Computer Knowledge	4	<ul style="list-style-type: none"> <li>◆ Demonstrate knowledge of common terms:               <ul style="list-style-type: none"> <li>— CAD: zoom; copy; rotate; mirror; move; fill; and line types.</li> <li>— Illustration and Presentation: cut; copy; paste, colour and gradients (tonal or colour).</li> <li>— DTP: headers; footers; columns; gutters; margins; page orientation; importing text and importing graphics.</li> </ul> </li> <li>◆ Demonstrate knowledge of input, output and storage devices relating to:               <ul style="list-style-type: none"> <li>— Input: keyboard, mouse, digital camera, scanner, graphics tablet.</li> <li>— Output: monitor, plotter, printer (laser, inkjet).</li> <li>— Storage: hard drive, floppy disk, CD, DVD, solid state storage device (memory card/ USB device).</li> </ul> </li> <li>◆ Advantages of using a Computer-Aided Graphics (CAG) system.</li> </ul>

## National Course Specification: Course details (cont)

**COURSE**            Graphic Communication (Intermediate 1)

### ASSESSMENT

To achieve the Course award the candidate must achieve the Units as well as pass the Course assessment. The candidate's grade is based on the Course assessment.

#### Assessment objectives

The key objective of Course assessment is to ensure that candidates have achieved the aims of the Course:

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

In particular, the assessment seeks to ensure that candidates have understood and can apply the Course content and that they can communicate their understanding.

#### Unit assessment

Unit assessment is conducted in accordance with the standards set out in the National Unit Specification: statement of standards for each Unit. Full details of the Outcomes, Performance Criteria and Evidence Requirements may be found in the Unit Specifications for:

- ◆ Technical Graphics 1 (Intermediate 1)
- ◆ Technical Graphics 2 (Intermediate 1)
- ◆ Computer Graphics (Intermediate 1)

*Technical Graphics 1 (Intermediate 1)* is assessed by means of a folio of work containing evidence for Outcomes 1, 2, and 3 and a short closed-book assessment for Outcome 4.

*Technical Graphics 2 (Intermediate 1)* is assessed by means of a folio of work containing evidence for Outcomes 1, 2 and 3 and a short closed-book assessment for Outcome 4.

*Computer Graphics (Intermediate 1)* is assessed by means of a folio of work containing evidence for Outcomes 1, 2, and 3 and a short closed-book assessment for Outcome 4.

Further details about Unit assessment for this Course can be found in the National Assessment Bank (NAB) materials and in the Unit Specifications.

## National Course Specification: Course details (cont)

### COURSE Graphic Communication (Intermediate 1)

#### Course assessment

The *Intermediate 1 Graphic Communication* Course is externally assessed against the Grade Descriptions as detailed in the Course Arrangements. The Course assessment will provide the basis for grading attainment in the Course awards. Course awards will be graded A to D, and will be based on the total score achieved in the Course assessment.

The Course assessment of the *Intermediate 1 Graphic Communication* Course will consist of two components:

- ◆ Question Paper
- ◆ Graphic Presentation Folio

All of the Course content will be subject to sampling in the Course assessment.

Further details of the Course assessment are given in the Course Assessment Specification and in the Specimen Question Paper.

#### Question Paper

The Question Paper will comprise a single paper of 2 hours duration, set and externally marked by the SQA. The total marks available will be 70. The Question Paper will test knowledge and drawing skills across all three Units. The questions will focus mainly on manual drawing, knowledge and understanding of colour theory, British Standards, computer graphics and computer terminology. Candidates should attempt all questions.

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

The ratio of marks allocated to Knowledge and Drawing questions will be approximately 15:55.

#### Graphic Presentation Folio

There are 30 marks available for the Graphic Presentation Folio. Each candidate will produce a range of manual and computer graphics, which will provide evidence for the internal assessment of the Unit, *Computer Graphics (Intermediate 1)* and, additionally, the Illustration and Presentation elements of the Unit, *Technical Graphics 1 (Intermediate 1)*. From this evidence, the best work should be selected by the candidate and enhanced, under supervised conditions, in terms of complexity, accuracy, detail and visual impact for inclusion in the Graphic Presentation Folio. Items can be enhanced or additional work created, under supervised conditions, within the extra 40 hours allocated to the Course. The Graphic Presentation Folio will be internally assessed but subject to external verification by SQA.

A *Guidance to Assessment* document will be produced by SQA to provide further guidance on the assessment of the Graphic Presentation Folio.

## National Course Specification: Course details (cont)

### COURSE Graphic Communication (Intermediate 1)

#### Content of the Graphic Presentation Folio

Manual	Rendering & Presentation	One presentation example of rendering (mono or colour).
Computer	CAD	One orthographic drawing of an everyday object. One pictorial drawing of an everyday object.
	Illustration	One single page illustration and presentation graphic.
	DTP	One single page layout containing text and graphics.

It should be noted that graphics selected for inclusion in the Graphic Presentation Folio must be the candidate's own work. **Work produced by following a directed approach, such as a step-by-step guide or wizard, is not valid for assessment purposes.**

Further details of the Course assessment are given in the Course Assessment Specification, in the Specimen Question Paper and in the Guidance to Assessment of the Graphic Presentation Folio.

#### Link between Unit and Course assessment/added value

Unit assessment is focused on either manual or computer-aided aspects of graphic communication, and the practical skills associated with these domains as assessed in folios of work to demonstrate the achievement of all Outcomes and Performance Criteria. There are also knowledge and understanding inputs in the *Technical Graphics 1 (Intermediate 1)* and *Computer Graphics (Intermediate 1)* Units.

The Course Assessment builds on the knowledge, understanding, skills and abilities gained in the Units and it provides further opportunities for candidates to demonstrate:

- ◆ integration of knowledge and drawing skills from across the Units
- ◆ application of drawing skills in more complex contexts
- ◆ retention of knowledge, understanding and skills demonstrating the ability to respond to a Question Paper on a single occasion

In the Graphic Presentation Folio, candidates will be required to demonstrate their ability to integrate and draw on skills gained in the Units to select and develop items, or create additional items, which go beyond Unit performance in terms of complexity, accuracy, detail and visual impact. For example, candidates will draw on knowledge of colour theory and manual rendering skills gained in *Technical Graphics 1 (Intermediate 1)* to produce computer-aided illustration and presentation graphics which are creative and effective in providing visual impact.

For the Question Paper, candidates will require to demonstrate the retention and integration of knowledge and drawing skills and the application of drawing skills to more complex contexts.

## National Course Specification: Course details (cont)

### COURSE Graphic Communication (Intermediate 1)

#### GRADE DESCRIPTIONS AT A AND C

The candidate's grade will be based on the total score obtained from the Course assessment. The descriptions below indicate the nature of achievement required for an award at Grade C and A in the Course.

For an award at Grade C, candidates should be able to:

- ◆ apply manual graphic techniques to produce:
  - pictorial drawings of common regular shapes and simple everyday items to a straightforward scale
  - orthographic drawings of simple straight-edged geometric forms
  - orthographic drawings with overall dimensions of everyday items, assemblies and sections
- ◆ use relevant British Standards conventions, the basic terms associated with computer graphics and the common input, output and storage devices
- ◆ read, interpret and extract information from simple diagrams and drawings
- ◆ demonstrate knowledge and understanding of basic colour theory
- ◆ apply manual graphic techniques to produce:
  - basic rendered graphic items using shading and toning techniques
  - and a display using basic layout techniques
- ◆ use computer hardware and computer-aided draughting software to produce:
  - orthographic drawings with overall dimensions of simple objects
  - pictorial drawings of simple objects
- ◆ use a desktop publishing/ paint-rendering package to produce a basic single page layout

For an award at Grade A, candidates should be able to:

- ◆ apply manual graphic techniques to produce:
  - pictorial drawings of common regular shapes and more complex everyday items to a given scale
  - related orthographic drawings of a combination of straight-edged geometric forms
  - related orthographic drawings with dimensions of everyday items, assemblies and sections
- ◆ apply manual graphics techniques to produce:
  - realistic rendered graphic items using a range of shading and toning techniques
  - and a display using suitable layout techniques to create visual impact
- ◆ demonstrate knowledge and understanding of relevant British Standard conventions, the basic terms associated with computer graphics, the common input, output and storage devices and advantages of CAG systems
- ◆ read, interpret and extract information from detailed diagrams and drawings
- ◆ demonstrate knowledge and understanding of basic colour theory with reasons for choice of colours
- ◆ use computer hardware and computer-aided draughting software to produce:
  - related (dimensioned) orthographic drawings of more complex objects
  - (non-dimensioned) pictorial drawings of more complex objects
- ◆ use a desktop publishing/paint-rendering package to produce a creative single page layout

## National Course Specification: Course details (cont)

**COURSE**            Graphic Communication (Intermediate 1)

### ESTIMATES AND APPEALS

#### Estimates

In preparing estimates, evidence must take account of performance across the Course and must be judged against the Grade Descriptions. Further advice on the preparation of estimates is given in the Course Assessment Specification.

Evidence used to compile the **overall estimate** should reflect all components of the Course assessment and should take into account any difference in weightings of these components.

Valid evidence of attainment for the Question Paper could be generated through the use of an assessment instrument, such as a prelim, based on the work from at least two Units of the Course, which replicates, as far as possible, the standard, format, duration and security of SQA Question Papers.

Evidence for the Graphic Presentation Folio should be based on the candidate's progress up to the date of the overall estimate.

Where estimates are based on an assessment covering only part of the Course, centres should be aware that the level of challenge is less than in the Course assessment.

Further advice on the preparation of estimates is given in the Course Assessment Specification.

#### Appeals

Evidence for the Question Paper is mandatory; it must show the same breadth of coverage of Course content as SQA's Question Paper and relate to the Course Grade Descriptions. While a prelim paper is not mandatory, it is an indicator of likely candidate performance in the external examination when pressure of time and retention of learning are significant factors. Evidence for the Question Paper should replicate as far as possible the standard, format, duration and security of SQA's Question Paper.

For the Graphic Presentation Folio component no evidence is required for Appeals.

Evidence for the Question Paper component could include:

- ◆ An integrated test or prelim which covers all Units and replicates the standard, format, duration and security of the Question Paper.

OR

- ◆ An integrated test or prelim which covers a minimum of two Units of the Course and an additional test which covers the content of the third Unit. In this case the additional test must integrate some content from the other two Units. However, where two assessments have been separated by a period of time rather than being taken on one occasion, centres should be aware that the level of demand is less than in the Course assessment.

NABs are unlikely to generate valid evidence for appeal.

## **National Course Specification: Course details (cont)**

**COURSE**            Graphic Communication (Intermediate 1)

### **QUALITY ASSURANCE**

All National Courses are subject to external marking and/or verification. External Markers, visiting Examiners and Verifiers are trained by SQA to apply national standards.

The Units of all Courses are subject to internal verification and may also be chosen for external verification. This is to ensure that national standards are being applied across all subjects.

Courses may be assessed by a variety of methods. Where marking is undertaken by a trained Marker in their own time, Markers meetings are held to ensure that a consistent standard is applied. The work of all Markers is subject to scrutiny by the Principal Assessor.

To assist centres, Principal Assessor and Senior Verifier reports are published on SQA's website [www.sqa.org.uk](http://www.sqa.org.uk).

### **GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS COURSE**

The Units can be taught sequentially, as stand-alone Units or concurrently. The Course could be structured around a series of tasks, some of which may integrate content across Units where appropriate. Integration could be achieved by using the same objects across the three Units or by taking a thematic approach. It would also be appropriate to stress the importance of the correct use of British Standards conventions on line types, dimensioning and symbols during the learning and teaching of all three Units.

To encourage motivation, it is recommended that the objects drawn are everyday items that are relevant to the candidates. Suitable objects may be wooden toys, personal CD players, mp3 players, cameras, mobile phones etc. 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 the Intermediate 2 Graphic Communication Course, to introduce the terms preliminary, production and promotional graphics.

Work on computer graphics should be based around the use of three software packages (Computer-Aided Draughting (CAD), Illustration and Desktop Publishing (DTP)) that reflect some of the features which would be expected in industrial packages.

### **CANDIDATES WITH DISABILITIES AND/OR 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 this Course. 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](http://www.sqa.org.uk)).

## National Unit Specification: general information

<b>UNIT</b>	Technical Graphics 1 (Intermediate 1)
<b>CODE</b>	D171 10
<b>COURSE</b>	Graphic Communication (Intermediate 1)

### SUMMARY

This Unit is a mandatory Unit of the *Intermediate 1 Graphic Communication Course*, but can also be taken as a free-standing Unit. The focus of the Unit is practical, introducing candidates to basic graphic skills which will be beneficial to them as they progress through any Course or vocation where knowledge of graphic communication terminology and practical skills is required.

This Unit offers opportunities to gain experience in pictorial projection methods, manual illustration, orthographic drawings and geometric constructions. The Unit is suitable for those candidates wishing to build on previous experience of graphic communication or those candidates who have no previous qualifications or experience and wish to gain an introductory qualification as part of a general education or as a first step to more specialised study.

### OUTCOMES

- 1 Draw isometric, exploded isometric and planometric views.
- 2 Construct and draw views of solid, hollow, uncut and single cut, right cylinders, prisms, and pyramids in third angle orthographic projection.
- 3 Produce rendered pictorial sketches of simple everyday objects.
- 4 Demonstrate knowledge and understanding of the use of basic colour theory in graphics.

### RECOMMENDED ENTRY

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

- ◆ Standard Grade Graphic Communication at Foundation level

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#### Administrative Information

<b>Superclass:</b>	JC
<b>Publication date:</b>	October 2007
<b>Source:</b>	Scottish Qualifications Authority
<b>Version:</b>	02

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## **National Unit Specification: general information (cont)**

**UNIT**      Technical Graphics 1 (Intermediate 1)

### **CREDIT VALUE**

1 credit at Intermediate 1 (6 SCQF credit points at SCQF level 4\*)

\*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**

Achievement of this Unit gives automatic certification of the following:

Complete Core Skill	None
Core Skill component	Using Graphical Information at SCQF Level 4

## **National Unit Specification: statement of standards**

### **UNIT      Technical Graphics 1 (Intermediate 1)**

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, exploded isometric and planometric views.

##### **Performance Criteria**

- (a) Isometric drawings produced are neat and accurate in terms of overall size.
- (b) Planometric drawings are neat and accurate in terms of overall size.
- (c) Exploded isometric views are sufficiently separated to clearly define the two component parts and their relative positions.

#### **OUTCOME 2**

Construct and draw views of solid, hollow, uncut and single cut, right cylinders, prisms, and pyramids in third angle orthographic projection.

##### **Performance Criteria**

- (a) Related views produced represent clearly the geometric form and are accurate in terms of overall size and position.
- (b) Geometric constructions are accurate and appropriate to the view being produced.
- (c) Surface developments are accurate in terms of overall size and correct application of fold lines to British Standards.

#### **OUTCOME 3**

Produce rendered pictorial sketches of simple everyday objects.

##### **Performance Criteria**

- (a) Pictorial sketching is in good proportion and clearly represents the object.
- (b) Rendering is effective in enhancing the item to show light, shade, tone and colour.

#### **OUTCOME 4**

Demonstrate knowledge and understanding of the use of basic colour theory in graphics.

##### **Performance Criteria**

- (a) Primary, secondary and tertiary colours are correctly identified.
- (b) The use of colours in relation to effect is correctly identified.
- (c) The procedure for creating a tint or shade is correctly identified.

## National Unit Specification: statement of standards (cont)

### UNIT Technical Graphics 1 (Intermediate 1)

#### EVIDENCE REQUIREMENTS FOR THIS UNIT

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

For Outcomes 1, 2, and 3, graphical evidence is required in the form of a folio of work containing evidence that the candidate can produce:

- ◆ an isometric drawing of a simple straight-edged everyday object
- ◆ a planometric drawing of an architecturally related layout incorporating a single straight-edged object
- ◆ an isometric drawing showing exploded parts
- ◆ an orthographic drawing showing the surface development of a right prism
- ◆ an orthographic drawing showing the surface development of a right pyramid
- ◆ an orthographic drawing showing the surface development of a right cylinder
- ◆ pictorial sketches of simple straight edged every day objects that have been enhanced to represent light, shade, tone and the use of colour

The orthographic drawings detailed above should include one example of each of the following:

- ◆ an uncut geometric form
- ◆ a hollow geometric form with a single cut
- ◆ a solid geometric form with a single cut

The evidence for the folio must be produced under supervised conditions to ensure that it is 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.

For Outcome 4, written and/or recorded oral evidence is required which demonstrates that the candidate has achieved the Outcome to the standard specified in the Outcome and Performance Criteria and covering the mandatory content specified in the Appendix. The assessment for this Outcome should be carried out under controlled, closed-book, supervised conditions and should last no more than 15 minutes.

The standard to be applied and the breadth of coverage are illustrated in the National Assessment Bank items available for this Unit. If a centre wishes to design its own assessments for this Unit, they should be of a comparable standard.

## National Unit Specification: support notes

### UNIT Technical Graphics 1 (Intermediate 1)

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

This Unit may be taken as a free-standing Unit or as part of the Intermediate 1 Graphic Communication Course. It is particularly suitable for candidates seeking to expand their sketching, illustration and drawing techniques.

#### GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

To encourage motivation, it is recommended that the objects drawn are everyday items that are relevant to the candidates. Suitable objects may be wooden toys, personal CD players, mp3 players, cameras, mobile phones etc. The Unit could be structured around a series of tasks, some of which may integrate content across Units, for example isometric views of an everyday item produced in *Technical Graphics 1 (Intermediate 1)* and orthographic views of an everyday object produced in *Technical Graphics 2 (Intermediate 2)*. This would allow candidates to appreciate the use of different formats for different purposes. Another area for integration could be the correct use of British Standards conventions on line types, dimensioning and symbols across all three Units of the *Intermediate 1 Graphic Communication Course*.

The tasks should take candidates from an introductory level up to the Unit standard of performance and cover the content listed in the Appendix to this Unit.

Practice in 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 interests of candidates, through the choice of drawing examples. Throughout the Unit, illustration techniques and colour theory should be integrated to allow candidates to appreciate the use of such techniques to enhance and clarify their work.

#### GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Appropriate instruments of assessment that could 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 under supervised conditions which satisfy the Evidence Requirements for the Unit.
- ◆ Outcome 4: A short, closed-book, restricted response test, lasting no more than 15 minutes to assess the candidate's knowledge of basic colour theory. The test should cover all three Performance Criteria and the content listed for Outcome 4 in the Appendix.

The work must be the candidate's own. Work produced by following a directed approach, such as a step-by-step guide is not valid for assessment purposes.

## **National Unit Specification: support notes (cont)**

**UNIT**      Technical Graphics 1 (Intermediate 1)

### **CANDIDATES WITH DISABILITIES AND/OR 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](http://www.sqa.org.uk)).

## **National Unit Specification: support notes (cont)**

### **UNIT      Technical Graphics 1 (Intermediate 1)**

#### **APPENDIX**

This appendix provides a list of the mandatory content for the Unit. All of the mandatory content will be subject to sampling in the Unit assessment.

#### **OUTCOME 1**

The following is the mandatory content for Outcome 1:

- ◆ Isometric views of simple, straight-edged, everyday objects, working from orthographic details of the objects.
- ◆ Exploded isometric views consisting of only two component parts, working from orthographic details of the components.
- ◆ Simple planometric views of architectural related layouts incorporating a single straight-edged object,

#### **OUTCOME 2**

The following is the mandatory content for Outcome 2:

- ◆ Drawings of geometric forms (solid, hollow, uncut and single cut) in third angle projection limited to elevations, end elevations, plans and surface developments of right cylinders, square and equilateral triangular prisms and pyramids.

#### **OUTCOME 3**

The following is the mandatory content for Outcome 3:

- ◆ Pictorial sketches of simple everyday items. Any of the following pictorial projections can be used, eg isometric, oblique, planometric, one and two point perspective.
- ◆ Manual illustration to include the use of colour, light, shade and tone in rendering, eg pencil, colour pencil, marker pen, pastels.

#### **OUTCOME 4**

The following is the mandatory content for Outcome 4:

- ◆ Understand the colour wheel.
- ◆ Recognise the use of colour in relation to effect, ie harmonising/contrasting, advancing/receding and warm/cold.
- ◆ Tint and shade.

## National Unit Specification: general information

<b>UNIT</b>	Technical Graphics 2 (Intermediate 1)
<b>CODE</b>	D172 10
<b>COURSE</b>	Graphic Communication (Intermediate 1)

### SUMMARY

This Unit is a mandatory Unit of the *Intermediate 1 Graphic Communication Course*, but can also be taken as a free-standing Unit. The focus of the Unit is practical, introducing candidates to basic graphic skills which will be beneficial to them as they progress through any course or vocation where knowledge of Graphic Communication terminology and practical skills is required.

This Unit offers opportunities to gain knowledge and experience of the production of detailed orthographic sketches and drawings in third angle projection. The candidate will also develop knowledge of British Standards Institute (BSI) conventions.

The Unit is suitable for those candidates wishing to build on previous experience of graphic communication or those candidates who have no previous qualifications or experience and wish to gain an introductory qualification as part of a general education or as a first step to more specialised study.

### OUTCOMES

- 1 Produce orthographic sketches, drawings and sectional views of everyday items in third angle projection.
- 2 Produce orthographic drawings and sectional views of two part assemblies in third angle projection.
- 3 Use British Standards conventions in the production of orthographic drawings.
- 4 Identify and extract information from detailed drawings and diagrams.

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#### Administrative Information

<b>Superclass:</b>	JC
<b>Publication date:</b>	March 2007
<b>Source:</b>	Scottish Qualifications Authority
<b>Version:</b>	01

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## **National Unit Specification: general information (cont)**

**UNIT**      Technical Graphics 2 (Intermediate 1)

### **RECOMMENDED ENTRY**

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

- ◆ Standard Grade Graphic Communication at Foundation level

### **CREDIT VALUE**

1 credit at Intermediate 1 (6 SCQF credit points at SCQF level 4\*)

\*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**

Achievement of this Unit gives automatic certification of the following:

- ◆ Complete Core Skill      None
- ◆ Core Skill Component(s)      Using Graphical Information at SCQF level 4



## **National Unit Specification: statement of standards**

### **UNIT      Technical Graphics 2 (Intermediate 1)**

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 sketches, drawings and sectional views of everyday items in third angle projection.

##### **Performance Criteria**

- (a) Orthographic sketches and drawings are appropriately detailed to define items clearly.
- (b) Orthographic sketches produced are in correct proportion.
- (c) Orthographic drawings produced are accurate in terms of projection, scale and overall size.
- (d) Sectional views produced reveal internal detail correctly.

#### **OUTCOME 2**

Produce orthographic drawings and sectional views of two part assemblies in third angle projection.

##### **Performance Criteria**

- (a) Drawings produced of two part assemblies are accurate in terms of the relative position of component parts.
- (b) Sectional views produced of two part assemblies reveal internal detail correctly.

#### **OUTCOME 3**

Use British Standards conventions in the production of orthographic drawings.

##### **Performance Criteria**

- (a) Use and identification of a range of line type applications is correct.
- (b) Dimensions are shown in accordance with relevant British Standards conventions.

#### **OUTCOME 4**

Identify and extract information from detailed drawings and diagrams.

##### **Performance Criteria**

- (a) Information is extracted correctly from a diagram.
- (b) British Standards architectural symbols are identified correctly from a drawing.
- (c) The third angle projection symbol is correctly identified from a drawing.

## **National Unit Specification: statement of standards (cont)**

### **UNIT**      Technical Graphics 2 (Intermediate 1)

#### **EVIDENCE REQUIREMENTS FOR THIS UNIT**

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

For Outcomes 1, 2, and 3, graphical evidence is required in the form of a folio of work which will contain evidence that the candidate can produce:

- ◆ two single-view, unrelated sketches of everyday items
- ◆ a single sheet with two related sketched views of an everyday item in third angle orthographic projection
- ◆ a drawing of an everyday item in third angle orthographic projection
- ◆ an orthographic drawing of an assembly comprising two component parts, drawn to a given scale
- ◆ an orthographic drawing of a two-part assembly, one view sectioned, in third angle projection, drawn to a given scale

The correct use of the required range of line type applications and dimensioning conventions, as detailed in the Appendix to this Unit, must be evident across the orthographic drawings produced for this folio.

The evidence for the folio must be produced under supervised conditions to ensure that it is 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.

For Outcome 4, written and/or recorded oral evidence is required which demonstrates that the candidate can:

- ◆ extract information from a diagram
- ◆ identify the required range of symbols from British Standards as detailed in the Appendix to this Unit

The assessment for Outcome 4 should be carried out under controlled, closed-book, supervised conditions and should last no more than 15 minutes.

The standard to be applied and the breadth of coverage are illustrated in the National Assessment Bank items available for this Unit. If a centre wishes to design its own assessments for this Unit, they should be of a comparable standard.

## National Unit Specification: support notes

### UNIT      Technical Graphics 2 (Intermediate 1)

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**

This Unit may be taken as a free-standing Unit or as part of the *Intermediate 1 Course in Graphic Communication*.

The Unit should allow candidates to gain experience in detailed sketching and drawing techniques to develop a greater understanding of the need for orthographic views, to develop an awareness of the importance of British Standards and to gain experience of the various methods of conveying information graphically.

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

#### **GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT**

This Unit could be taught as a stand-alone Unit or concurrently with any of the other Units that make up the Course.

To encourage motivation, it is recommended that the objects drawn are everyday items that are relevant to the candidates. Suitable objects may be wooden toys, personal CD players, mp3 players, cameras, mobile phones etc. The Unit could be structured around a series of tasks, some of which may integrate content across Units within the *Intermediate 1 Graphic Communication Course* eg isometric views of an everyday item produced in *Technical Graphics 1 (Intermediate 1)* and orthographic views of an everyday object produced in *Technical Graphics 2 (Intermediate 1)*. This would allow candidates to appreciate the use of different formats for different purposes. Another area for integration would be the correct use of British Standards conventions on line types, dimensioning and symbols across all three Units of the *Intermediate 1 Graphic Communication Course*.

The tasks should take candidates from an introductory level up to the Unit standard of performance and cover the content which is detailed in the Appendix to this Unit.

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 *Intermediate 1 Graphic Communication Course*.

## National Unit Specification: support notes (cont)

### UNIT      Technical Graphics 2 (Intermediate 1)

#### GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Appropriate instruments of assessment that could 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 under supervised conditions. The required range of line type applications and dimensioning conventions must be evident across the orthographic drawings in the folio.
- ◆ The work must be the candidate's own. Work produced by following a directed approach, such as a step-by-step guide is not valid for assessment purposes.
- ◆ Outcome 4: A short, closed-book, restricted response test lasting no more than 15 minutes covering the mandatory content listed in the Appendix to this Unit.

#### CANDIDATES WITH DISABILITIES AND/OR 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](http://www.sqa.org.uk)).

## **National Unit Specification: support notes (cont)**

### **UNIT      Technical Graphics 2 (Intermediate 1)**

#### **APPENDIX**

This appendix provides a list of the mandatory content for the Unit. All of the mandatory content is subject to sampling in the Unit assessment.

#### **OUTCOME 1**

The following is the mandatory content for Outcome 1:

- ◆ Sketch single views of everyday items.
- ◆ Sketch two related views in orthographic projection.
- ◆ Drawings of everyday items in third angle projection.

#### **OUTCOME 2**

The following is the mandatory content for Outcome 2:

- ◆ Drawings of simple two part assemblies.
- ◆ Sectional drawings limited to two part assemblies.
- ◆ Drawings of assemblies and products to reveal internal features.
- ◆ Draw objects to a given scale (1:1, 1:2, 2:1).

#### **OUTCOME 3**

The following is the mandatory content for Outcome 3:

- ◆ Show dimensions on orthographic views.
- ◆ Correct use and identification of common drawing conventions to include:
  - line type applications — visible outline, hidden details, centre lines, cutting planes, hatching
  - dimensioning — horizontal, vertical, radius and diameter

#### **OUTCOME 4**

The following is the mandatory content for Outcome 4:

- ◆ Extract information from different types of diagrams.
- ◆ Identify the following British Standards architectural symbols — sink, sinktop, wash basin, WC, shower tray, lamp, switch, socket, door.
- ◆ Identify the third angle projection symbol.

## National Unit Specification: general information

<b>UNIT</b>	Computer Graphics (Intermediate 1)
<b>CODE</b>	D173 10
<b>COURSE</b>	Graphic Communication (Intermediate 1)

### SUMMARY

This Unit is a mandatory Unit of the *Intermediate 1 Graphic Communication Course*, but can also be taken as a free-standing Unit.

The focus of the Unit is practical, introducing candidates to basic computer graphic skills associated with Computer Aided Graphics (CAG) systems which will be beneficial to them as they progress through any Course or vocation where a knowledge of Graphic Communication terminology and practical computer skills is required.

This Unit offers opportunities to gain knowledge and experience in the production of detailed orthographic and pictorial drawings using Computer-Aided Draughting (CAD) software. The candidate will also gain experience in the use of illustration, presentation and Desktop Publishing (DTP) software producing posters, leaflets, etc.

The Unit is suitable for those candidates wishing to build on previous experience of Graphic Communication or those candidates who have no previous qualifications or experience and wish to gain an introductory qualification as part of a general education or as a first step to more specialised study.

### OUTCOMES

- 1 Produce dimensioned orthographic drawings and pictorial drawings of simple everyday objects using computer-aided draughting software in accordance with British Standards.
- 2 Produce computer presentation graphics using illustration and presentation software.
- 3 Produce a single page layout using desktop publishing software.
- 4 Demonstrate knowledge associated with computer graphics.

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#### Administrative Information

<b>Superclass:</b>	JC
<b>Publication date:</b>	March 2007
<b>Source:</b>	Scottish Qualifications Authority
<b>Version:</b>	01

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## **National Unit Specification: general information (cont)**

**UNIT**      Computer Graphics (Intermediate 1)

### **RECOMMENDED ENTRY**

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

- ◆ Standard Grade Graphic Communication at Foundation level

### **CREDIT VALUE**

1 credit at Intermediate 1 (6 SCQF credit points at SCQF level 4\*)

\*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**

Achievement of this Unit gives automatic certification of the following:

- ◆ Complete Core Skill      Using Information Technology at SCQF level 4
- ◆ Core Skill Component(s)      None

## **National Unit Specification: statement of standards**

### **UNIT      Computer Graphics (Intermediate 1)**

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 dimensioned orthographic drawings and pictorial drawings of simple everyday objects using computer-aided draughting software in accordance with British Standards.

##### **Performance Criteria**

- (a) Orthographic drawings produced are accurate in terms of projection, scale and overall size.
- (b) Pictorial drawings produced effectively represent the item in terms of detail and proportion.
- (c) Main dimensions on orthographic drawings are clear, appropriate and in accordance with the relevant British Standard.

#### **OUTCOME 2**

Produce computer presentation graphics using illustration and presentation software.

##### **Performance Criteria**

- (a) The presentation graphic incorporates appropriate illustration and presentation techniques and includes gradients and lettering.
- (b) The presentation produced is clear and effective in terms of its use of backgrounds, text and layout.

#### **OUTCOME 3**

Produce a single page layout using desktop publishing software.

##### **Performance Criteria**

- (a) The layout contains a body of text contained within at least one column.
- (b) The layout contains an imported graphic item.
- (c) The layout produced shows appropriate use of text style and integration of text and graphics.

#### **OUTCOME 4**

Demonstrate knowledge associated with computer graphics.

##### **Performance Criteria**

- (a) Common input, output and storage devices are identified correctly.
- (b) The uses of common input, output and storage devices are described correctly.
- (c) Software command/features are identified correctly.
- (d) The uses of software commands/features are described correctly.
- (e) The advantages of CAD/CAG over manual methods are described correctly.



## National Unit Specification: statement of standards (cont)

### UNIT Computer Graphics (Intermediate 1)

#### EVIDENCE REQUIREMENTS FOR THIS UNIT

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

For Outcomes 1, 2, and 3, product evidence is required in the form of a folio of work which will contain evidence that the candidate can produce:

- ◆ A dimensioned orthographic CAD drawing showing related views of a simple everyday object
- ◆ A pictorial drawing of a simple everyday object
- ◆ A hard copy of a presentation graphic, produced using illustration and presentation software, which incorporates appropriate illustration and presentation techniques from the list in the Appendix and includes gradients and lettering
- ◆ A single page DTP layout document containing a body of text within one or more columns and at least one imported graphic item. The text should be appropriate and should not be lorem ipsum or other irrelevant text

The evidence for the folio must be produced under supervised conditions to ensure that it is the candidate's own work. Work produced by following a directed approach, such as a step by step guide or wizard, is not valid for assessment purposes.

For Outcome 4, written and/or recorded oral evidence is required. The instrument of assessment will provide opportunities for all Performance Criteria to be fulfilled, by means of sampling across the range of the content of Outcome 4 in the Appendix. If a re-assessment is required, it should contain a different sample from the range of mandatory content contained within the Appendix and achievement can be decided by the use of a cut-off score. Each sample must include the following:

- ◆ Identify one of each of the following: input, output and storage devices taken from the mandatory content detailed in the Appendix
- ◆ Describe the use of one of each of the following: input, output and storage devices taken from the mandatory content detailed in the Appendix
- ◆ Identify three software commands/features taken from the mandatory content detailed in the Appendix
- ◆ Describe the use of three software commands/features taken from the mandatory content detailed in the Appendix
- ◆ Describe three advantages of Computer Aided Graphics over manual methods taken from the mandatory content detailed in the Appendix

The assessment for Outcome 4 should be carried out under controlled, supervised, closed-book conditions and should last no more than 15 minutes.

The standard to be applied and the breadth of coverage are illustrated in the National Assessment Bank items available for this Unit. If a centre wishes to design its own assessments for this Unit, they should be of a comparable standard.

## National Unit Specification: support notes

### UNIT Computer Graphics (Intermediate 1)

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

This Unit may be taken as a free-standing Unit or as part of the Intermediate 1 Graphic Communication Course. It is particularly suitable for candidates undertaking an introduction to a variety of computer-aided packages.

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

Candidates could gain experience in producing orthographic and pictorial views using a CAD package; in using an illustration package to enhance presentation graphic items in terms of colour, impact and presentation; and in using a DTP package to produce effective layouts involving graphics and text. Candidates could become familiar with common terms associated with computer graphics and gain knowledge of the advantages of Computer Aided Graphics (CAG) in professional, commercial and industrial settings. Terminology should include:

◆ CAD	zoom, copy, rotate, mirror, move, fill, line types
◆ Illustration	cut, copy, paste, colour and gradients and presentation
◆ DTP	headers, footers, columns, gutters, margins, page orientation, importing text, importing graphics
◆ Input	keyboard, mouse, digital camera, scanner, graphics tablet
◆ Output	monitor, plotter, printer (laser, ink jet)
◆ Storage	hard drive, floppy disk, CD, DVD, solid state storage device (memory card/ USB device)

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.

#### GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

This Unit could be taught as a stand-alone Unit or be run concurrently with other Units that make up the Intermediate 1 Graphic Communication Course. For candidates following the Intermediate 1 Graphic Communication Course, the work of this Unit should help to consolidate and integrate content taught in the other two Units. For example, the use of the same objects as was used in the other Units can help to show how different views are used for different purposes; colour theory, manual rendering techniques and the use of British Standard conventions on line types, dimensioning and symbols learned in other Units, can be reinforced in Computer Graphics work.

## National Unit Specification: support notes (cont)

### UNIT Computer Graphics (Intermediate 1)

Opportunities could be provided to relate the work to the interests of candidates through the choice of drawing examples. Suitable examples could be wooden toys, personal CD players, mp3 players, cameras, mobile phones etc.

Using the same product to demonstrate orthographic drawing (production) and computer illustration and presentation (promotional) would help candidates to understand and see the use of production and promotional graphics.

### GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Appropriate instruments of assessment that could 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 CAD drawing, DTP and illustration and presentation.
- ◆ The work should be the candidate's own work. Work produced by following a directed approach, such as a step by step guide or wizard, is not valid for assessment purposes.
- ◆ Outcome 4: a short written test to assess the candidate's awareness of terminology and the advantages of computer graphics in industry. The test should be aimed at a sample of the range of terminology associated with computer graphics.

### CANDIDATES WITH DISABILITIES AND/OR 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](http://www.sqa.org.uk)).

## National Unit Specification: support notes (cont)

### UNIT Computer Graphics (Intermediate 1)

#### APPENDIX

This appendix provides a list of the mandatory content for the Unit. All of the mandatory content is subject to sampling in the Unit assessment.

#### OUTCOME 1

The following is the mandatory content for Outcome 1:

- ◆ Produce orthographic and pictorial drawings of simple everyday objects.
- ◆ Apply dimensions to orthographic drawings.

#### OUTCOME 2

The following is the mandatory content for Outcome 2:

- ◆ Create a single page presentation containing text and graphics using illustration software.
- ◆ Illustration and presentation techniques: light, shade and tonal scale; highlights, reflections and shadows; gradients.
- ◆ The presentation could be for example a poster, graph, chart or display.

#### OUTCOME 3

The following is the mandatory content for Outcome 3:

- ◆ Create a single page layout document containing a body of text, contained within one or more columns and one or more graphic items using desktop publishing software.
- ◆ The layout should contain at least one imported graphic item. Text may be typed or imported, for example from the Internet, CD-ROM, Optical Character Recognition (OCR), etc.
- ◆ Appropriate meaningful text should be used and not lorem ipsum or other irrelevant text.

#### OUTCOME 4

The following is the mandatory content for Outcome 4:

- ◆ Demonstrate knowledge of common terms.
  - CAD: zoom; copy; rotate; mirror; move; fill; and line types
  - Illustration and Presentation: cut; copy; paste, colour and gradients (tonal or colour)
  - DTP: headers; footers; columns; gutters; margins; page orientation; importing text and importing graphics
- ◆ Demonstrate knowledge of input, output and storage devices relating to:
  - Input: keyboard, mouse, digital camera, scanner, graphics tablet
  - Output: monitor, plotter, printer (laser, inkjet)
  - Storage: hard drive, floppy disk, CD, DVD, solid state storage device (memory card/ USB device)
- ◆ Advantages of using a Computer–Aided Graphics (CAG) system.