

## National Unit Specification: general information

**UNIT** Computer Graphics (Intermediate 1)

**CODE** D173 10

**COURSE** 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

**Superclass:** JC

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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.