

## 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
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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.