



## **National Unit Specification: general information**

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

**CODE**       F398 11

### **SUMMARY**

This Unit is a mandatory Unit of the Intermediate 2 Graphic Communication Course, but can also be taken as a free-standing Unit. The focus of the Unit is practical, developing graphic skills which will be beneficial for 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 current 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 a 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 three part assemblies in third angle projection, working from orthographic and pictorial details of the components.
- 3    Use knowledge of current British Standards in the production of drawings.

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#### **Administrative Information**

**Superclass:**        JC

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## National Unit Specification: general information (cont)

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

### RECOMMENDED ENTRY

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

- ◆ Intermediate 1 Graphic Communication
- ◆ Standard Grade Graphic Communication at General level

### CREDIT VALUE

1 credit at Intermediate 2 (6 SCQF credit points at SCQF level 5\*).

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

##### **Performance Criteria**

- (a) Drawings and preliminary sketches are sufficiently detailed to define items 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.
- (d) Sectional views reveal internal detail correctly.

#### **OUTCOME 2**

Produce orthographic drawings and sectional views of three part assemblies in third angle projection, working from orthographic and 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 relevant British Standards conventions.

#### **OUTCOME 3**

Use knowledge of current British Standards in the production of drawings.

##### **Performance Criteria**

- (a) Use of a range of line types is correct.
- (b) Dimensions are shown in accordance with current British Standards.
- (c) British Standards symbols are identified correctly.

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

### UNIT Technical Graphics 2 (Intermediate 2)

#### EVIDENCE REQUIREMENTS FOR THIS UNIT

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

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

- ◆ a single sheet with four related sketched views of an everyday item in third angle orthographic projection, one of the sketched views being a section in one plane
- ◆ a single sheet with three related drawn views, one of which must be a plan of an everyday item, accurately dimensioned and to a given scale; taken from given orthographic views
- ◆ a single sheet with three related drawn views, one of which must be a plan of an everyday item, accurately dimensioned and to a given scale; taken from given pictorial views
- ◆ a single sheet with three related drawn views, one of which must be a plan, of an assembly comprising three parts, accurately dimensioned and to a given scale
- ◆ a single sheet with three related drawn views, one of which must be shown as a section, of an assembly comprising three parts, accurately dimensioned and to a given scale

The correct use of the required range of line type applications and dimensioning in accordance with current British Standards, 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 3 (c), written and/or recorded oral evidence is required which demonstrates that the candidate can:

- ◆ identify the required range of architectural symbols from current British Standards as detailed in the Appendix attached to this Unit
- ◆ identify the third angle projection symbol

The assessment for Outcome 3 (c) 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 2)**

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 2 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

The mandatory content for this Unit can be found in the Appendix.

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

This Unit could be taught as a free-standing Unit or concurrently with any of the other Units that make up the Intermediate 2 Graphic Communication 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 2 Graphic Communication Course eg isometric views of an everyday item produced in F397 11 Technical Graphics 1 (Intermediate 2) and orthographic views of an everyday object produced in F398 11 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 current British Standards on line types, dimensioning and symbols across all three Units of the Intermediate 2 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 2 Graphic Communication Course.

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

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

#### **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: Practical exercises, to be included in a folio of work, 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 3: A short, closed-book, restricted response test lasting no more than 15 minutes covering the mandatory content listed in the Appendix to this Unit.

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.

#### **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: statement of standards (cont) — Appendix**

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

#### **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 two related views of everyday items in third angle projection
- ◆ drawings of everyday items in third angle projection
- ◆ sketches of sectional views of everyday items
- ◆ drawings of sectional views of everyday items

#### **OUTCOME 2**

The following is the mandatory content for Outcome 2:

- ◆ drawings of three-part assemblies, in third angle projection, working from orthographic or pictorial details of the components.
- ◆ sectional drawings of three part assemblies, in third angle projection, working from orthographic or pictorial details of the components. Limited to three main components involving straight-edged and curved surfaces.
- ◆ draw objects to a given scale (1:1, 1:2, 2:1).

#### **OUTCOME 3**

The following is the mandatory content for Outcome 3:

- ◆ correct use and identification of common drawing conventions to include:
  - line type applications (fold line, hidden line, section line, centre line, outline, projection/ construction line, hatching)
  - dimensioning (horizontal, vertical, square, radius and diameter, angular, AC, AF, CL)
  - architectural symbols (sink, sinktop, wash basin, wc, bath, shower tray, window, door, radiator, lamp, switch, socket, North symbol, sawn timber, insulation, brickwork, concrete)
  - third angle projection symbol