

National Unit Specification: general information

UNIT	Technical Graphics 2 (Higher)
NUMBER	D172 12
COURSE	Graphic Communication (Higher)

SUMMARY

The purpose of the unit is to:

- develop competence in applying manual techniques of orthographic projection
- develop awareness of graphics within a typical company structure.

OUTCOMES

- 1 Apply manual techniques of orthographic projection to produce drawings of components, assemblies and locations.
- 2 Apply the principles of dimensioning to orthographic production drawings.
- 3 Demonstrate knowledge of the use of graphic communication within the consumer, engineering and construction industries.

RECOMMENDED ENTRY

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

- Standard Grade Graphic Communication at Grade 1 or 2
- Intermediate 2 Graphic Communication, or equivalent.

Administrative Information

Superclass:	VF
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National Unit Specification: general information (cont)

UNIT Technical Graphics 2 (Higher)

CREDIT VALUE

1 credit at Higher.

CORE SKILLS

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

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

National Unit Specification: statement of standards

UNIT Technical Graphics 2 (Higher)

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

Apply manual techniques of orthographic projection to produce drawings of components, assemblies and locations.

Performance criteria

- a) A variety of orthographic drawings is produced; the drawings are effective and include sectional, auxiliary and exploded views.
- b) Drawings produced of components and assemblies are neat and accurate, effectively represent desired features and are in accordance with PP7308.
- c) Drawings produced of locations are neat and accurate, represent desired features and are in accordance with PP7320 and PP7307.
- d) Scales used are appropriate as specified in PP7308 and PP7320
- e) The production of drawings, under test conditions, shows competence in applying a selection of the techniques listed in (a) to (d).

Evidence requirements

Graphical evidence of drawings produced by the candidate for PCs (a) to (d), to an appropriate degree of difficulty. Assemblies must have a minimum of three parts and be drawn from details of single components. Test evidence for PC (e) which samples some of the techniques listed in PC (a) to (d).

OUTCOME 2

Apply the principles of dimensioning to orthographic production drawings.

Performance criteria

- a) Dimensions are accurate and in accordance with PP7308 and PP7320.
- b) Dimensional tolerances on components are accurate and represented in accordance with PP7308.

Evidence requirements

Graphical evidence that the candidate can apply the principles of dimensioning as detailed in PCs (a) and (b).

National Unit Specification: statement of standards

UNIT Technical Graphics 2 (Higher)

OUTCOME 3

Demonstrate knowledge of the use of graphic communication within the consumer, engineering and construction industries.

Performance criteria

- a) The main types of graphic communication are correctly identified and their purpose justified.
- b) The explanation of appropriate types of graphic communication for given requirements is clear.

Evidence requirements

Written evidence which indicates that the candidate can explain the wide use of graphic communication.

National Unit Specification: support notes

UNIT Technical Graphics 2 (Higher)

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

The unit will develop the skills required in orthographic projection through component drawings, assemblies and locations and the use of British Standards. The drawing abilities required in these areas will be developed through a range of production drawings and planning diagrams of the type used in the consumer, engineering and construction industries. The knowledge and understanding of how graphic communication is used within industry will be studied.

Opportunities should be provided to relate the work to the industrial and commercial world through choice of drawing examples, industrial visits, videos and personal experiences. The types of drawing skills developed should be exemplified by the place they occupy in industry in the context of design, manufacture and marketing. It is suggested that many aspects of the unit can be dealt with in an integrated manner.

The objects chosen for drawing should be readily recognisable and the purpose of the drawings made clear to the candidate. Auxiliary views should be used to clarify features not clear from other views. Recommended British Standards scales and scale rules should be used. Dimensional tolerance values should be given however, reference to 'Tolerance tables' is not required.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

A resource-based learning approach is recommended. Work should be integrated to cover more than one topic to create a natural progression through the unit.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Centres may use the instruments of assessment that are considered to be most appropriate. Examples of instruments of assessment which could be used to generate and gather evidence of achievement are given below.

The candidate could be asked to produce drawings of existing products and locations to illustrate production drawings and diagrams. Drawings of locations and floor plans should use an appropriate scale and should include the use of graphical symbols.

The candidate could be set a sample of matching questions to test the ability to identify, classify and justify the use of types of graphic communication within the consumer, engineering or construction industries. These questions should test knowledge of how the types of graphic communication are used by departments of design, manufacture, sales and marketing. Where possible, actual examples of the types of graphic communication should be used for this exercise.

National Unit Specification: support notes (cont)

UNIT Technical Graphics 2 (Higher)

SPECIAL NEEDS

This unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative outcomes for units. For information on these, please refer to the SQA document *Guidance on Special Assessment and Certification Arrangements for Candidates with Special Needs/Candidates whose First Language is not English* (SQA, 1998)