

National Unit Specification: general information

UNIT	Technical Graphics 1 (Higher)
NUMBER	D171 12
COURSE	Graphic Communication (Higher)

SUMMARY

The purpose of the unit is to develop competence in applying manual techniques of pictorial representations, illustration and presentation graphics, and geometric constructions.

OUTCOMES

- 1 Apply manual techniques of pictorial representation to suit a range of subject matter.
- 2 Apply manual techniques of geometric construction in the generation of orthographic drawings.
- 3 Apply manual techniques of illustration and presentation to give emphasis and realism to graphic presentations.

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 1 (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 1 (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 pictorial representation to suit a range of subject matter.

Performance criteria

- a) 1- and 2-point perspective sketches of appropriate subject matter are produced accurately in terms of scale and proportion.
- b) Isometric drawings of consumer products incorporating curves, oblique drawings of engineered components and planometric drawings of room interiors are produced accurately.
- c) Isometric and oblique drawings of assembled and exploded parts and sections are accurately produced.
- d) The application of the 'measured-plan' method of drawing 2-point measured perspective is correct.
- e) The production of drawings, under test conditions, shows competence in applying a selection of techniques of pictorial representation.

Evidence requirements

Graphical evidence that the candidate can apply manual pictorial presentation techniques, as detailed in PCs (a) to (d), to an appropriate degree of difficulty. Test evidence for PC (e) which samples some of the techniques listed in PCs (b) to (d).

OUTCOME 2

Apply manual techniques of geometric construction in the generation of orthographic drawings.

Performance criteria

- a) Constructions used to produce drawings of intersections, interpenetrations and developments of right prisms and cylinders are appropriate to the purpose and demonstrate effective use of the principles of plane and solid geometry.
- b) Constructions used to produce true shapes, ellipses and tangencies are appropriate to the purpose.
- c) The production of drawings, under test conditions, shows competence in applying a selection of the techniques of geometric construction.

Evidence requirements

Graphical evidence that the candidate can apply manual techniques of geometric construction in the generation of orthographic drawings, as detailed in PCs (a) and (b), to an appropriate degree of difficulty. Test evidence for PC (c) which samples some of the techniques listed in PCs (a) and (b).

National Unit Specification: statement of standards (cont)

UNIT Technical Graphics 1 (Higher)

OUTCOME 3

Apply manual techniques of illustration and presentation to give emphasis and realism to graphic presentations.

Performance criteria

- a) The use of freehand illustration and presentation techniques is appropriate and effective in the context of preliminary graphics.
- b) Line, tone and colour are used effectively to give emphasis and realism to graphic presentations.

Evidence requirements

Graphical evidence that the candidate can apply appropriate illustration and presentation techniques to graphic presentations, as detailed for PCs (a) and (b).

National Unit Specification: support notes

UNIT Technical Graphics 1 (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 candidate should achieve a level of competence and skill in a range of graphic communication techniques that could be applied in an industrial or commercial context.

This unit will build on Standard Grade or Intermediate 2 Graphic Communication skills in pictorial representation, illustration and presentation techniques, and on the basic geometric constructions used in the generation of orthographic drawings. It will show how graphics are utilised in the consumer, engineering and construction industries and will provide an opportunity for the candidate to develop some of the graphic techniques used to create preliminary graphics.

The exercises chosen should involve products suitable for freehand sketching, formal pictorial drawings and illustration and presentation techniques. Preliminary sketches should progress to formal pictorial drawings that could be developed later in the course to produce presentation graphics of the type that would be produced for promotional purposes.

Geometry should be taught in the context of real examples and limited to single plane configurations. Geometric forms should be confined to right prisms and cylinders. The use of templates should be encouraged for informal drawings. The construction of true shapes, ellipses and tangents should not be taught in isolation from practical examples.

GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

Work should be integrated to cover more than one topic, to create a natural progression through the unit.

National Unit Specification: support notes (cont)

UNIT Technical Graphics 1 (Higher)

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Examples of instruments of assessment which could be used are as follows.

A series of drawing exercises could be used to gather evidence for all the performance criteria for pictorial representation. The candidate could be asked to produce sketches and formal pictorial drawings of products and constructions. Linking with illustration and presentation would test the development of these skills within an integrated context.

A series of drawing exercises could be used to gather evidence of geometric constructions, mainly by production of manual orthographic drawings using examples from real situations, such as components with cylindrical branches and bosses, dormer windows, stair rails and newel posts.

A series of graphic exercises could be used to gather evidence for all the performance criteria for illustration and presentation. The candidate could use photocopies, tracings or originals of some of the work produced in the preceding exercises for pictorial representation, and apply the skills of illustration and presentation.

Applications which are integrated should test the development of skills and knowledge of more than one outcome in the context of the whole unit.

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).