
2D Graphic Communication Unit

SCQF: level 6 (9 SCQF credit points)

Unit code: J251 76

Unit outline

The general aim of this Unit is to help learners to develop their creativity and presentation skills within a 2D graphic communication context. It will enable learners to initiate, plan, develop and communicate ideas graphically, using two-dimensional graphic techniques. Learners will develop a number of skills and attributes within a 2D graphic communication context, including spatial awareness, visual literacy, and the ability to interpret given drawings, diagrams and other graphics. Learners will evaluate the effectiveness of their own and given graphic communications to meet their purpose.

Learners who complete this Unit will be able to:

- 1 Produce and interpret 2D orthographic sketches¹ and drawings
- 2 Produce 2D computer-aided designed production drawings
- 3 Produce preliminary 2D designs and illustrations for a multi-page promotional document
- 4 Create a multi-page 2D promotional publication and a project set of promotional publications

This Unit is available as a free-standing Unit. The Unit Specification should be read in conjunction with the *Unit Support Notes*, which provide advice and guidance on delivery, assessment approaches and development of skills for learning, skills for life and skills for work. Exemplification of the standards in this Unit is given in *Unit Assessment Support*.

¹ Drawing and sketching refers to manual and/or electronic methods unless otherwise stated.

Recommended entry

Entry to this Unit is at the discretion of the centre. However, learners would normally be expected to have attained the skills, knowledge and understanding required by one or more of the following or equivalent qualifications and/or experience:

- ◆ National 5 Graphic Communication Course or relevant Units

Equality and inclusion

This Unit Specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence. For further information, please refer to the *Unit Support Notes*.

Standards

Outcomes and assessment standards

Outcome 1

The learner will:

- 1 Produce and interpret 2D orthographic sketches and drawings by:**
 - 1.1 Applying appropriate drawing standards, protocols and conventions to produce orthographic sketches of everyday objects, components and assemblies with dimensions and complex features
 - 1.2 Using graphic communication equipment accurately and effectively and applying appropriate drawing standards, protocols and conventions to produce projected 2D line drawings of everyday objects, components and assemblies with dimensions and complex features
 - 1.3 Describing and justifying the use of the main types of graphic communication employed in the design, manufacturing and marketing of a product

Outcome 2

The learner will:

- 2 Produce 2D computer-aided designed production drawings by:**
 - 2.1 Applying computer-aided design skills, knowledge and understanding accurately and effectively and using appropriate drawing standards, protocols and conventions to create related orthographic views of single components and assemblies
 - 2.2 Applying computer-aided design skills, knowledge and understanding accurately and effectively and using appropriate drawing standards to create three examples of technical detail
 - 2.3 Applying computer-aided design skills accurately and effectively and using appropriate drawing standards to add textual and numerical information to orthographic computer-aided designed work

Outcome 3

The learner will:

- 3 Produce preliminary 2D designs and illustrations for a multi-page promotional document by:**
 - 3.1 Illustrating preliminary orthographic sketches of geometric forms and everyday objects
 - 3.2 Conducting preliminary research prior to the design of a promotional publication and preparing an outline specification
 - 3.3 Applying knowledge and understanding of graphic elements and principles to produce preliminary layout designs for a multi-page promotional document

Outcome 4

The learner will:

- 4 Create a multi-page 2D promotional publication and a project set of promotional publications by:**
 - 4.1 Using software accurately and effectively to construct a master page/template for a multi-page promotional publication
 - 4.2 Producing a multi-page promotional publication with complex features, which communicates effectively with its target audience and has relevant visual impact
 - 4.3 Describing and justifying the use of promotional graphics in industry and commerce and their impact on the environment and society

Evidence requirements for the Unit

Assessors should use their professional judgement, subject knowledge and experience, and understanding of their learners, to determine the most appropriate ways to generate evidence and the conditions and contexts in which they are used.

Evidence is required that the learner has met the Outcomes and Assessment Standards.

Evidence may be a combination of written, oral and graphical.

In general, Outcomes may be met using either manual graphics techniques or electronic techniques, or a combination of both manual and electronic. When an Outcome or Assessment Standard specifically refers to a task that can only be carried out using manual techniques or electronic techniques, then those must be used.

Evidence may be presented for individual Outcomes or it may be gathered for the Unit as a whole through combining assessment holistically in one single activity. If the latter approach is used, it must be clear how the evidence covers each Outcome.

For this Unit, learners will be required to provide evidence of:

- ◆ skills in interpreting and creating a range of 2D graphics — preliminary, production and promotional graphics
- ◆ an understanding of appropriate drawing standards, protocols and conventions including the principles of dimension and tolerance
- ◆ an understanding of techniques and terminology involved in creating graphic displays digitally
- ◆ an understanding of how graphic communication technologies impact on society and the environment

Exemplification of assessment is provided in *Unit Assessment Support*. Advice and guidance on possible approaches to assessment is provided in the *Unit Support Notes*.

Assessment standard thresholds

If a candidate successfully meets the requirements of the specified number of Assessment Standards they will be judged to have passed the Unit overall and no further re-assessment will be required.

The specific requirements for this Unit is as follows:

- ◆ 8 out of 12 Assessment Standards must be achieved.

It should be noted that there will still be the requirement for candidates to be given the opportunity to meet all Assessment Standards. The above threshold has been put in place to reduce the volume of re-assessment where that is required.

Development of skills for learning, skills for life and skills for work

It is expected that learners will develop broad, generic skills through this Unit. The skills that learners will be expected to improve on and develop through the Unit are based on SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work* and drawn from the main skills areas listed below. These must be built into the Unit where there are appropriate opportunities.

2 Numeracy

2.2 Money, time and measurement

4 Employability, enterprise and citizenship

4.2 Information and communication technology (ICT)

5 Thinking skills

5.3 Applying

5.4 Analysing and evaluating

5.5 Creating

Amplification of these is given in SQA's *Skills Framework: Skills for Learning, Skills for Life and Skills for Work*. The level of these skills should be at the same SCQF level of the Unit and be consistent with the SCQF level descriptor. Further information on building in skills for learning, skills for life and skills for work is given in the *Unit Support Notes*.

Appendix: Unit support notes

Introduction

These support notes are not mandatory. They provide advice and guidance on approaches to delivering and assessing this Unit. They are intended for teachers and lecturers who are delivering this Unit. They should be read in conjunction with:

- ◆ the *Unit Specification*
- ◆ the *Unit Assessment Support packs*

Developing skills, knowledge and understanding

Teachers and lecturers are free to select the skills, knowledge, understanding and contexts which are most appropriate for delivery in their centres.

Approaches to learning, teaching and assessment

Centres should be very clear on what represents the capability and creativity of the learner and that of the software when making assessment judgments. Software wizards for items like templates should not be accredited to the learner.

Printed copies of digital evidence must be supplied for verification.

Skills, knowledge and understanding for the assessment of this unit

The following provides details of skills, knowledge and understanding sampled in this unit assessment:

| Skills, Knowledge and Understanding | |
|---|--|
| Graphic types | The role of preliminary, production and promotional graphics in the design, manufacturing and marketing of a product or publication and producing effective preliminary, production and promotional graphics. |
| Manual techniques and/or computer-aided techniques | <p>Selecting and applying manual and/or computer-aided and desktop publishing (DTP) graphic techniques and processes.</p> <p>Using graphic communication applications and a range of common graphic media, equipment and/or devices to produce effective and informative graphic communications.</p> |
| Drawing standards, protocols and conventions | <p>Applying recognised drawing standards, protocols and conventions in engineering and construction, including symbols and standards.</p> <ul style="list-style-type: none"> ◆ line types: <ul style="list-style-type: none"> — dimension lines, centre line, hidden detail, cutting planes, fold lines ◆ dimensioning: <ul style="list-style-type: none"> — linear, radial, angular, diameter, tolerance ◆ symbols for sections ◆ hatching ◆ third-angle projection system |
| Geometric shapes and forms | <p>Producing graphics representing products, components, assembly and other items.</p> <ul style="list-style-type: none"> ◆ interpenetration ◆ intersections of right prisms and cylinders ◆ true shapes ◆ ellipses ◆ common geometric forms and partial cuts of those forms ◆ components built from various simple combinations of forms |

| Skills, Knowledge and Understanding | |
|---|--|
| Views and techniques | <p>Appropriate selection and use of 2D views and techniques, when producing graphic communications:</p> <ul style="list-style-type: none"> ◆ third-angle orthographic projection ◆ tangency (internal and external radii location) ◆ true lengths and true shapes ◆ surface developments ◆ a range of sectional views (full, part, revolved, and stepped) and cut-aways ◆ assembly drawings (minimum three parts) ◆ exploded orthographic views ◆ auxiliary views ◆ use of appropriate scales |
| Techniques in sketching (paper-based and/or using electronic tablets or similar devices) | <p>Applying electronic and/or manual sketching techniques:</p> <ul style="list-style-type: none"> ◆ proportion ◆ line quality ◆ line sketching using related orthographic views |
| Illustration techniques using manual and/or computer-aided formats | <p>Using illustration techniques to create effective and informative graphic communications for representing:</p> <ul style="list-style-type: none"> ◆ light ◆ shadow ◆ reflection ◆ tone ◆ layout ◆ material ◆ texture |
| Producing effective multi-page promotional documents | <p>Applying and using:</p> <ul style="list-style-type: none"> ◆ colour theory: <ul style="list-style-type: none"> — warm, cool, contrast, harmony, accent, advancing and receding ◆ design elements and principles: <ul style="list-style-type: none"> — line, shape, texture, value, mass/weight, alignment, balance, contrast, depth, dominance, emphasis, proportion, rhythm, unity/proximity, white space, grid structure <p>Techniques used to create promotional documents and graphic displays.</p> <p>Presenting research/investigation and generating ideas for work to support/justify a graphic communication proposal.</p> |

| Skills, Knowledge and Understanding | |
|---|--|
| Computer-aided design (CAD) | <p>Applying generic techniques, customs and practices used across a range of 2D and 3D CAD packages to create orthographic views:</p> <ul style="list-style-type: none"> ◆ 2D-drawing tools: <ul style="list-style-type: none"> — line, circle, rectangle, ellipse, trim, array (linear, box and radial), offset, mirror, project edge, extend, fillet, chamfer, text ◆ modelling features: <ul style="list-style-type: none"> — extrude, revolve, loft, helix, extrude/sweep along a path ◆ modelling edits: <ul style="list-style-type: none"> — shell, fillet (regular/irregular), chamfer (regular/irregular), mirror, array (linear, box and radial), add, subtract, intersect ◆ 2D constraints: <ul style="list-style-type: none"> — linear, radius, diameter, perpendicular, parallel, fixed, tangent, concentric ◆ terminology: <ul style="list-style-type: none"> — component, assembly, sub-assembly, work-plane/plane, axis, feature, profile, sketch, face, edge, datum, suppress ◆ assembly: <ul style="list-style-type: none"> — 3D constraints (mate, align, centre axis, orientate, offset, tangent), stock/library components |
| Desktop publishing (DTP) | <p>Applying and using generic DTP terms and techniques including:</p> <ul style="list-style-type: none"> ◆ planning strategies: <ul style="list-style-type: none"> — thumbnails, visuals and annotation ◆ generic DTP terms and techniques: <ul style="list-style-type: none"> — copy/paste, import/export — single- and multi-page format — page size, orientation, grid, guides, snap, master page, layers, document sizing — cropping (square and full cropping), rotate, text box, handles, text wrap, flow text along a path, extended text — colour fill, colour picking, textured fills, gradient fill, transparency, drop shadow — serif, sans serif and script fonts, font styles, placeholder text (lorem ipsum), reverse, drop caps — column, margin, gutter, caption, header, running headline, heading, title, footer, folio, column rule/rule, indent, hanging indent, line spacing, pull quote, justification — proofs (pre-press), registration marks, crop marks, bleed ◆ file types: <ul style="list-style-type: none"> — raster (tiff, jpg, png, bmp), vector (svg, dxf) and their features |
| Graphic communication technology and society | <p>The impact and influence of CAD systems and graphic communication technologies on industry and society:</p> <ul style="list-style-type: none"> ◆ the paperless office ◆ use of recycled materials |

| Skills, Knowledge and Understanding | |
|--|--|
| | <ul style="list-style-type: none"> ◆ CAD, as it supports manufacturing and other industries ◆ DTP in marketing and promotional activities ◆ remote working ◆ communication crossing international boundaries |
| Safe working | The safe working practices and systems that support graphic communication activities in studios and other working environments. |

Combining assessment within Units

Assessment could be combined in this Unit by holistically assessing all the Outcomes of the Unit in a single assessment. When assessment within the Unit is holistic, teachers and lecturers should take particular care to track the evidence for each individual Outcome.

Administrative information

Published: July 2019 (version 4.0)

Superclass: CE

History of changes to National Unit Specification

| Version | Description of change | Authorised by | Date |
|---------|---|------------------------------------|----------------|
| 2.0 | Changes to wording in AS 3.3 and AS 4.4 to improve clarity — ‘and with complex features, and evaluating this design work’ removed. The word ‘folded’ removed from AS 4.1 to increase flexibility. Previous AS 4.3 removed — ‘Using software to design and produce a range of three additional promotional items with relevant visual impact and evaluate the entire range’ — to reduce evidence required. | Qualifications Development Manager | April 2014 |
| 2.1 | Reference to draughting removed throughout. | Qualifications Manager | April 2015 |
| 3.0 | Level changed from Higher to SCQF level 6. Unit support notes added. Assessment standard threshold added. | Qualifications Manager | September 2018 |
| 4.0 | Unit code updated | Qualifications Manager | July 2019 |

This specification may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged. Additional copies of this Unit can be downloaded from SQA’s website at www.sqa.org.uk.

Note: readers are advised to check SQA’s website: www.sqa.org.uk to ensure they are using the most up-to-date version of the Unit Specification.

© Scottish Qualifications Authority 2019