



## Higher National Unit specification

### General information

**Unit title:** Computer Arts and Design: Technologies (SCQF level 7)

**Unit code:** HG58 34

**Superclass:** CB

**Publication date:** October 2016

**Source:** Scottish Qualifications Authority

**Version:** 01

### Unit purpose

This unit is designed to prepare the learner for working within the disciplines of Computer Art and Design by providing essential underpinning technical knowledge used in that discipline. It is intended that the learner will, as part of this process develop research and analytical skills within a chosen area of Computer Arts and Design.

### Outcomes

On successful completion of the unit the learner will be able to:

- 1 Identify the key technologies used in the production of Computer Arts and Design.
- 2 Apply and evaluate the key technologies used in the production of Computer Arts and Design.

### Credit points and level

1 Higher National unit credit at SCQF level 7: (7 SCQF credit points at SCQF level 7)

### Recommended entry to the unit

Access to this unit is at the discretion of the centre. However, it would be beneficial if learners were proficient in the use of a computer, and had experience of using it in the context of an art and design project. This may be evidenced by the possession of relevant Higher National units such as *Technologies for Computer Arts and Design*, *Basic Web Design* or *Screen Design 1*, or by prior experience. Higher Art & Design and or Craft Design and Technology would provide useful background knowledge, but are not essential to success in this unit. It is also recommended that learners have either completed, or are currently undertaking HN unit, *Digital Imaging 1*.

## Higher National Unit specification: General information (cont)

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### Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the Support Notes for this unit specification.

There are opportunities to develop the Core Skills of *Information and Communication Technology*, *Problem Solving*, *Numeracy* and *Communication* at SCQF level 6 in this unit, although there is no automatic certification of Core Skills or Core Skills components.

### Context for delivery

If this unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

The Assessment Support Pack (ASP) for this unit provides assessment and marking guidelines that exemplify the national standard for achievement. It is a valid, reliable and practicable assessment. Centres wishing to develop their own assessments should refer to the ASP to ensure a comparable standard. A list of existing ASPs is available to download from SQA's website (<http://www.sqa.org.uk/sqa/46233.2769.html>).

### 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.

Further advice can be found on our website [www.sqa.org.uk/assessmentarrangements](http://www.sqa.org.uk/assessmentarrangements).

## Higher National Unit specification: Statement of standards

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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 SQA.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment.

### Outcome 1

Identify and evaluate the key technologies used in the production of Computer Arts and Design.

#### Knowledge and/or Skills

- ◆ Colour
- ◆ Display systems
- ◆ Managing files
- ◆ Network technologies

### Outcome 2

Apply and evaluate the key technologies used in the production of Computer Arts and Design.

#### Knowledge and/or Skills

- ◆ Colour
- ◆ Display systems
- ◆ Managing files
- ◆ Network technologies

### Evidence Requirements for this unit

Learners will need to provide evidence to demonstrate their Knowledge and/or Skills across all Outcomes by showing that they can:

#### Outcome 1

- ◆ assemble an annotated, illustrative research portfolio for each of the above Knowledge and/or Skills.
- ◆ the research portfolio will be presented as part of a work/sketchbook
- ◆ identify and evaluate by production of a research portfolio for each of the key technologies identified from the knowledge and /or skills listed above, within a specific chosen Computer Arts and Design discipline.

## **Higher National Unit specification: Statement of standards (cont)**

**Unit title:** Computer Arts and Design: Technologies (SCQF level 7)

### **Outcome 2**

- ◆ apply theoretical knowledge to a practical art or design project within a chosen Computer Arts and Design discipline.
- ◆ produce an art and design artefact or product within a chosen subject area to a given brief.



## Higher National Unit Support Notes

**Unit title:** Computer Arts and Design: Technologies (SCQF level 7)

Unit Support Notes are offered as guidance and 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 purpose of this unit is to provide the learners with background knowledge of the technologies used in the practice of computer arts and design. This could include subjects such as interactive design, web design, digital video, illustration, time-based art, computer art 2D/3D animation and 3D modelling.

The unit is intended as both a research, and practical unit where the learner is invited to, collect information and produce a work/sketchbook and then evaluate this information by analysing the range of applications of the given technologies from the learners' subject area. In the final Outcome, learners should apply this knowledge, again within their chosen area.

Within the context of the Outcomes and Knowledge/Skills there has been no recommendation or identification of specific subject content. Computer Arts and Design are rapidly evolving disciplines and any prescriptive content could be out of date very quickly. This section will highlight the range of theoretical issues associated with Computer Arts and Design at the time of writing. There will be an on-going review of subject content to ensure fitness for purpose.

Technologies used in the practice of Computer Arts and Design include:

- 1 **Colour in Computer Graphics:** Colour mode, RGB (additive) CMYK (subtractive), HSB hexadecimal, pixels, alpha channels, grey scale, histogram.
- 2 **Graphic display, location and storage systems:** Cartesian systems, Grids, Pixels, bit/depth, colour palettes, raster, vectors, interpolation, resolution, half tone, anti-alias, aspect ratio.
- 3 **Managing Files:** Graphic file formats (format types). Metadata. Graphic Compression systems: (temporal, spatial, bit depth, lossy, loss-less). Naming conventions, file structures and storage.
- 4 **Network Technologies:** Blogging tools, video and image file sharing. Social Networking.

## Higher National Unit Support Notes (cont)

**Unit title:** Computer Arts and Design: Technologies (SCQF level 7)

### Guidance on approaches to delivery of this unit

This unit forms part of the Computer Arts and Design Group Award and has been identified as one of three key framework skills units in the award.

This unit is likely to form part of a Group Award that is primarily designed to provide learners with the background knowledge of different technologies used in the practice of computer arts and design. It is expected that the learner will have gained some experience of computer art and design before undertaking this unit. It is therefore suggested that this unit is introduced at a later stage of the delivery of the award so as to allow the learner to contextualise the given information.

This unit may be taught alone as an independent unit. However the learner must demonstrate applied knowledge through practical activities. It is therefore suggested that this unit is delivered in the context of other practical based units.

Assessment should be assessed summatively on completion of both Outcomes. Interim assessment may also be utilised.

### Guidance on approaches to assessment of this unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

A number of product-based assessment instruments will be required which will include work/sketchbooks of gathered evidence, illustrated report writing and evidence of practical work. Outcomes 1 and 2 can be cross-assessed through product-based assessment. Integrative assessment should be encouraged across a range of Design units as appropriate to the framework in which the unit is offered. If this approach is taken, then a matrix for assessment should be devised.

### Assessment Guidelines

#### Outcome1

Learners should demonstrate that they can identify and evaluate appropriate material that shows an understanding of the key theories used in the production/practice of their chosen area of Computer Arts and Design. All work must be self-initiated and cover all the key technologies identified in the four knowledge and/or skills have appropriate evidence of presentation and storage management skills.

## Higher National Unit Support Notes (cont)

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There is an opportunity for this Outcome to be assessed with Outcome 2 as an individual learning activity or it could form part of a project brief that requires a specific research Outcome. There is a major opportunity, therefore, for integration of this Outcome with a large variety of existing design projects throughout a variety of art and design, craft and design, multimedia, web, television and broadcast media and creative industries frameworks.

### Outcome 2

The learner should demonstrate that they have developed the ability to understand theoretical ideas within their chosen area of Computer Arts and Design. This can be evidenced through informal observation, formative checklists and summative project work

This Outcome could be assessed individually however there is an opportunity for integration of this Outcome with a large variety of existing art and design, craft and design, interactive design, web, television and broadcast media and creative industries frameworks.

If used in this manner, an assessment matrix should be devised.

### Opportunities for e-assessment

E-assessment may be appropriate for some assessments in this unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at [www.sqa.org.uk/e-assessment](http://www.sqa.org.uk/e-assessment).

## Higher National unit Support Notes (cont)

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### Opportunities for developing Core and other essential skills

All elements of the Core Skill of *Problem Solving*, namely Planning and Organising, Critical Thinking, and Reviewing and Evaluating would be developed and enhanced as learners undertake the unit, analysing and applying key technologies to a specific brief. Learners will work unaided in the selection of appropriate software and the modification or customising of applications to meet needs of purpose and context. Following procedures for security and safety will be routine practice. Analytical evaluation of all stages of proposed solutions and their potential and actual impact will be on-going. Access, to and interpretation and evaluation of examples applied materials would be of value during formative work and learners could be supported in identifying appropriate methods to measure achievement and progress.

Accuracy and effectiveness in the interpretation and communication of graphic information underpins the competencies developed in the unit. Some learners may benefit from formative opportunities to further develop skills in the analysis and application of graphic data, and the use of software packages or on-line tutorials to enhance skills may be useful.

Although communication skills are not formally assessed learners should produce and present work and sketchbooks of evidence, illustrated reports and evidence of practical work. to a professional standard, using accepted formats and terminology. Essential ideas and information should be expressed accurately and coherently. Use of language, spelling, and punctuation should be accurate. Presentations should demonstrate that learners are able to:

- ◆ collate, organise and structure accurate information effectively.
- ◆ signpost key points.
- ◆ select and produce support materials for their impact.
- ◆ use appropriate non-verbal communication techniques.
- ◆ respond to any questions in a way that progresses communication.



## History of changes to unit

Version	Description of change	Date

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## General information for learners

### Unit title: Computer Arts and Design: Technologies (SCQF level 7)

This section will help you decide whether this is the unit for you by explaining what the unit is about, what you should know or be able to do before you start, what you will need to do during the unit and opportunities for further learning and employment.

The purpose of this unit is to provide you with the background knowledge of the technologies used in the practice of computer arts and design. This could include interactive design, web design, digital video, illustration, time-based art, computer art 2D/3D animation and 3D modelling. It will help to place your elected vocational area in context and allow you to explore a range of theoretical issues which will then help you understand some of the conceptual ideas behind using the computer to produce art and design. You will be expected to undertake a number of research activities and some analysis into the following subject areas.

Technologies used in the practice of Computer Arts and Design:

- ◆ **Colour in Computer Graphics:** Colour mode, RGB (Additive) CMYK (subtractive) hexadecimal, alpha channels, grey scale, histogram, HSB
- ◆ **Graphic display, location and storage systems:** Cartesian systems, Grids, Pixels, bit/depth, colour palettes, bitmaps/raster, vectors, sampling, interpolation, resolution, half tone, anti-alias, aspect ratio
- ◆ **Managing Files:** Graphic File formats (format algorithms, format types), Metadata, Graphic compression systems (temporal, spatial, bit depth, lossy, loss-less), Naming conventions, file structures and storage
- ◆ **Network Technologies:** Blogging tools, Video and image file sharing, Social networking

You will be expected to produce an art and design artifact or product within a chosen subject area to a given brief.