



Higher National Unit Specification

General information

Unit title: Computer Arts and Design: Advanced Digital Imaging (SCQF level 8)

Unit code: HM06 35

Superclass: CC

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Unit purpose

This unit is designed to extend the learners knowledge and/or skills of specific computer arts and design applications in relation to their own area of interest. Learners will be encouraged to use key functions and features used in the production of a design project underpinned by research and analysis.

Outcomes

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

- 1 Research and analyse the key functions and features of application software used in the production of a computer arts and design project.
- 2 Plan and prepare resource material suitable for inclusion in the production of an agreed computer arts and design project.
- 3 Produce a computer arts and design project that applies the key functions and features of application software.
- 4 Present the agreed computer arts and design project in an appropriate format and evaluate the effectiveness of the selected application software.

Credit points and level

2 Higher National Unit credits at SCQF level 8: (16 SCQF credit points at SCQF level 8)

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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 relevant software in the context of an art and design project. This may be evidenced by possession of relevant Higher National Units such as *Computer Arts and Design Technologies* (level 7), *Basic Web Design*, *Screen Design* or by prior experience. Higher *Art and Design and/or Craft Design and Technology* at SCQF level 6 would provide useful background knowledge, but are not essential to success of this unit. It is also recommended that learners have completed, or are currently undertaking HN Unit, *Digital Imaging*.

Core Skills

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

There is no automatic certification of Core Skills or Core Skill components in this unit.

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.

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. Learners should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

Outcome 1

Research and analyse the key functions and features of application software used in the production of a computer arts and design project.

Knowledge and/or skills

- ◆ Screen design theory
- ◆ Industry standard art and design application software
- ◆ Screen design functions and features of application software
- ◆ File Management methods
- ◆ Network technologies
- ◆ Computer art and design disciplines

Outcome 2

Plan and prepare resource material suitable for inclusion in the production of an agreed computer arts and design project.

Knowledge and/or skills

- ◆ Project planning tools and methodology
- ◆ Advanced features and functions of selected art and design application software
- ◆ Sources and references
- ◆ Formats
- ◆ Recording tools/techniques
- ◆ Production action planning and scheduling

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Outcome 3

Produce a computer arts and design project that applies the key functions and features of application software.

Knowledge and/or skills

- ◆ Key features and functions of selected software
- ◆ Production skills and methods
- ◆ Formats and platforms
- ◆ Workflow management

Outcome 4

Present the agreed computer arts and design project in an appropriate format and evaluate the effectiveness of the selected application software.

Knowledge and/or skills

- ◆ Presentation formats and platforms
- ◆ Evaluation techniques
- ◆ Relevance of selected software to computer arts and design project
- ◆ Strengths and weaknesses

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

Research and analyse the key functions and features of application software used in the production of a computer arts and design project.

- ◆ assemble an illustrated and annotated research portfolio for each of the key functions and features of application software identified from the knowledge and/or listed within a chosen computer arts and design discipline.

Outcome 2

Plan and prepare resource material suitable for inclusion in the production of an agreed computer arts and design project.

- ◆ select and prepare a range of visual material suitable for inclusion in a computer arts and design project.
- ◆ prepare a project plan including a project title, target audience, style/genre, narrative.
- ◆ prepare a project schedule noting key dates and work schedule.

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Outcome 3

Produce a computer arts and design project that applies the key functions and features of application software.

- ◆ select and apply appropriate application software and provide evidence for each of the key functions and features identified from the knowledge and/or skills listed within a chosen computer arts and design discipline.
- ◆ produce an art and design artefact or product within a chosen computer arts and design discipline that meets the requirements of a given brief.

Outcome 4

Present the agreed computer arts and design project in an appropriate format and evaluate the effectiveness of the selected application software.

- ◆ present an art and design artefact or product within an agreed computer arts and design discipline.
- ◆ produce a written/oral evaluation noting the effectiveness of the computer arts and design project citing the strengths and areas for improvement.

The assessment for Outcomes 2–4 can be combined together as a single assessment instrument for this unit. It is suggested that the learner be given brief/s that leads to the use of all the knowledge and/or skills. It is suggested that the learner submit a sketchbook and/or digital portfolio, which demonstrates the evidence requirements required for the outcomes.



Higher National unit Support Notes

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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 80 hours.

Guidance on the content and context for this unit

This specialist unit is primarily intended for developing practical skills underpinned by researching and analysing key functions and features of application software used in a computer arts and design discipline. This includes subjects such as computer art 2D and 3D animation, 3D modelling, craft and design, digital imaging, digital video, film, game design, interactive design, web design, time based art, TV and broadcast media.

The learner will research and analyse key functions and features of application software used in computer arts and design disciplines through a workbook/sketchbook/case study. The learner should then be able to plan and prepare self-sourced and generated material suitable for inclusion in a software environment. The learner should then produce a computer arts and design project. They should present and evaluate the strengths and areas for improvement of the project to a given brief.

The section below highlights how the knowledge and/or skills can be matched to different art, design, and visual communication disciplines.

Key knowledge and/or skills

Screen design theory includes:

- ◆ Composition, unity, repetition, symmetry, proximity, texture, rule of 3rds, cartesian, continuity, line, shape, space, colour, colour palettes, colour range, tone, perspective, grid, proportion, staging, format, etc.

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Screen design functions and features will vary depending on the 2D/3D software environment:

- ◆ Image manipulation — colour mode, colour range, blend modes, layering, layer comps, layer styles, smart objects, filters, masking, vignette, grouping, interpolation, etc.
- ◆ 3D image manipulation — wire frames, rigging — ik and fk, geometries, modification tools, mesh, lathe, extrude, loft, texture mapping, null object, importing, rendering, exporting, lighting, camera, etc.
- ◆ Motion tools — interpolation, velocity, motion path, animating, tweening, key framing, tracking, parenting, puppet tool, rotoscoping, particle effects, expressions, etc.
- ◆ Scripting — Actionscript, Javascript, etc
- ◆ Mark-up languages and style sheets — HTML, XML, CSS

File Management

- ◆ Workflow management, naming and labelling conventions, metadata, graphic compression systems: (temporal, spatial, bit depth, lossy, lossless), storage and retrieval systems, etc.

Network technologies used in creation and distribution:

- ◆ Blogging tools, video and image file sharing, social networking, on-line tutorial, etc.

Guidance on approaches to delivery of this unit

This unit forms part of the Computer Arts and Design Group Award that is primarily designed to provide learners with the background knowledge of key functions and features of application software 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. The learner can work individually or in groups, however, the learner should produce individual evidence for all the knowledge and/or skills covered in all four outcomes. It is recommended that the whole process be assessed along with the final product/artefact.

The unit can be taught as a stand-alone unit, however, it may be taught with other units. In this case an assessment matrix should be produced.

One approach to delivery for **Outcome 1** could be to provide exemplar materials to assist the learner with the knowledge and/or skills used in a computer arts and design project. Demonstrations and practical exercises will help the learner understand these standards.

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Outcome 2 Plan and prepare resource material suitable for inclusion in the production of a computer arts and design project. The learner can develop their own brief or respond to a supplied brief that covers all of the knowledge and/or skills. The resource material should be self-sourced and generated, and suitable for inclusion in a computer arts and design project. The materials can be a blend of sketchbook and digital workbook whereby the learner creates a rough work in a sketchbook, which acts as a blueprint within a software environment. The material will likely form the basis for the assets used in the final design solution. The learner should produce a project plan and working schedule.

Outcome 3 the learner should be able to apply their knowledge and/or skills of the key functions and features used in a computer arts and design project. They should be able to manage their workflow to account for the nature and complexity of the functions and features to ensure that the product is completed within the allotted time.

Outcome 4 requires the learner to present a computer arts and design project for discussion/critique. This could be in the form of an in-class discussion, a blog or other suitable format. This would allow the learner to get feedback from their peers and offer considerations for areas of improvement. The learner can use the discussion as the basis for an evaluation of the strengths of the project and consider areas for improvement.

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.

Integrative assessment should be encouraged across a range of art and 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.

This unit will be assessed on four instruments of assessment. The first will require the learner to research and analyse the key functions and features used in a computer arts and design project. This could be in the form of a visual annotated sketchbook/workbook/mood board, or case study. The second instrument of assessment requires the learner to plan and prepare resource material suitable for inclusion in the production of a computer arts and design project. The third instrument of assessment requires the learner to produce a product that applies the key functions and features used in the production of a computer arts and design project. The final instrument of assessment requires the learner to present and evaluate the key functions and features used in the production of a computer arts and design project meeting all the knowledge and/or skills for Outcomes 1–4. It is desirable that the assessment takes place in a controlled setting. Any work produced out with these conditions, where for example the mode of delivery of the unit is open learning or VLE based, must be authenticated by the tutor.

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One approach to assessment for **Outcome 1** could be to present as an illustrated and annotated research portfolio/workbook/sketchbook and/or written/oral illustrated case study and include references.

All evidence should be contextualised from within the key functions and features of application software that is applicable to the learners chosen area of study.

Outcome 2 could be presented as a blend of traditional/digital sketchbook. The learner could produce a written and/or oral project plan that clearly states their intention within the project. A project schedule could be in any suitable form that notes key deadline dates, and allocated time for producing the project on time. The learner may supply their own brief in consultation with their tutor. It is recommended that the learner keep a project diary and logs the development of the project.

Outcome 3 the learner should produce a final product/artefact that clearly meets the aims of the brief and shows documented process throughout. The learner should be able to use a range of key functions and features of application software in a computer arts and design project.

Outcome 4 requires the learner to present a computer arts and design project for discussion/critique. This could be in the form of an in-class discussion, a blog or other suitable format. This would allow the learner to get feedback from their peers and offer considerations for areas of improvement. The learner can use the discussion as the basis for an evaluation of the strengths of the project and consider areas for improvement in written or oral format.

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.

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, by analysing and applying an industry standard computer art and design project to a specific brief. Learners undertake a complex practical task, where identifying and assessing the relevance of the functions and features involved in creating a computer arts and design project. Learners design effective strategies that allow on-going opportunities for review and modification reflecting problem-solving skills. Learners will benefit from support materials and/or personal interviews with the assessor to reinforce analytical evaluation approaches to overall achievement in order to inform any future activities and further development. Learners need to produce and present materials that should be acceptable as

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industry standard including thorough research, design and production of a computer arts and design project, and critical reflection of the whole process to a project brief.

All elements of Core Skill of *ICT*, namely Accessing Information and Providing/Creating Information would be developed and enhanced as learners undertake the unit. This would be through accessing Information for relevant resources and on-line software training sites that display key functions and features used in computer arts and design projects. Providing and Creating Information by using software programmes to design and create computer arts and design projects.

History of changes to unit

Version	Description of change	Date

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General information for learners

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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.

This unit is primarily intended for developing practical skills underpinned by researching and analysing key functions and features of application software used in a computer arts and design discipline. This includes subjects such as computer art 2D and 3D animation, 3D modelling, craft and design, digital imaging, digital video, film, game design, interactive design, multimedia, web design, and time based art, TV and broadcast media.

The unit concentrates on:

- ◆ research and analyse of the key functions and features of application software used in the creation of a computer arts and design project.
- ◆ the planning and preparation of resource material suitable for inclusion in the production of a computer arts and design project to a brief.
- ◆ producing a project that applies the key functions and features of application software used in the production of a computer arts and design project to a brief.
- ◆ presenting and evaluating the effectiveness of application software used in the computer arts and design project.

Outcome 1

You will carry out research into the function and features in a workbook/sketchbook/case study. All research will be submitted for assessment.

Outcome 2

You will plan and prepare resource material showing the key functions and features suitable for inclusion in the production of a computer arts and design project. This will involve a range of written and illustrative materials.

Outcome 3

You will produce a project that applies the key functions and features of application software used in the production of a computer arts and design project.

Outcome 4 requires you to present your computer arts and design project and to evaluate your strengths and areas for improvement of application software used in a computer arts and design project.

To complete this unit successfully, you will be required to achieve a satisfactory level or performance in all four outcomes.