

Higher National Unit specification

General information for centres

Unit title: Computer Arts and Design: Advanced Software Applications

Unit code: F1EC 35

Unit purpose: This Unit is designed to extend the candidates knowledge of specific art and design software applications in relation to their own area of interest. Candidates will be encouraged to use advanced functions and features of chosen software and apply this gained knowledge to an art and or design project.

On completion of the Unit the candidate should be able to:

- 1 Analyse the functions and features of chosen art or design software.
- 2 Evaluate the functions and features of the chosen art or design software.
- 3 Apply the functions and features of chosen art or design software to a brief.

Credit points and level: 2 HN credits at SCQF level 8: (16 SCQF credit points at SCQF level 8*)

**SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

Recommended prior knowledge and skills: Access to this Unit is at the discretion of the centre. Candidates should have an understanding of the software applications and the design process having completed HN Units in Computer Art and Design such as HN Units DW9G 34 *3D Animation Motion Studies*, DW9J 34 *Animation: An Introduction*, DW9H 34 *3D Computer Visualisation* or have similar qualifications or experience.

Core Skills: There are opportunities to develop the Core Skill of Problem Solving, Information Technology 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.

Assessment: A number of product-based assessment instruments will be required. This will include work/sketchbooks of gathered evidence, illustrated report writing and evidence of practical work.

Outcomes 1, 2 and 3 can be 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.

Higher National Unit specification: statement of standards

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

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. Candidates 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

Analyse the functions and features of chosen art or design software

Knowledge and/or Skills

- ◆ Research
- ◆ Sourcing and collating information
- ◆ Industry standard art and design software applications
- ◆ Complex computer colour and pixel theory
- ◆ File compression techniques
- ◆ Advanced features & functions of selected software
- ◆ Critical analysis

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ collate and annotate an illustrative research portfolio
- ◆ analyse the use of computer colour and pixel theory
- ◆ describe advanced features and functions of selected art and design software
- ◆ demonstrate an understanding of file compression techniques and their use
- ◆ produce self-initiated work that critically analyses the features of software and its uses

Assessment Guidelines

Evidence should be presented as an illustrated and annotated research portfolio in any suitable format but should equate to at least 6 x A4 pages.

All evidence should be contextualised from within a range of software that is applicable to the candidates chosen area of study.

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 & design, craft & design, multimedia, web, television & broadcast media and creative industries frameworks. If used in this manner, an assessment matrix should be devised.

Higher National Unit specification: statement of standards (cont)

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Outcome 2

Evaluate the functions and features of the chosen art or design software

Knowledge and/or Skills

- ◆ Industry standard art and design software applications
- ◆ Complex computer colour and pixel theory
- ◆ File compression techniques
- ◆ Advanced features & functions of selected software
- ◆ Evaluation

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ produce case studies of finished computer art and design projects and the software used in its production
- ◆ produce case studies that describe the use of software in the production of finished art and design projects
- ◆ produce case studies that evaluate the effectiveness of the use of software in the production of finished art and design projects

Evidence should be presented as a folio of case studies. This would normally be in a written format but could also be digitally or orally presented.

Assessment Guidelines

Evidence should be presented as a minimum of three different case studies of 500 words each, or an oral presentation of 5 minutes. Case study examples could be a piece of candidates' own work or that produced by another artist or designer.

There is an opportunity for this Outcome to be assessed with Outcome 1 as an individual learning activity or it could form part of a project brief that requires a specific research Outcome.

Higher National Unit specification: statement of standards (cont)

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Outcome 3

Apply the functions and features of chosen art or design software to a brief

Knowledge and/or Skills

- ◆ Complex computer colour and pixel theory
- ◆ File compression techniques
- ◆ Advanced features and functions of selected software
- ◆ Creative application
- ◆ Time management

Evidence Requirements

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ develop ideas that make use of art or design software
- ◆ apply theoretical knowledge to a practical art or design project and brief
- ◆ research and develop concepts for an art or design brief
- ◆ produce a finished art and design artefact or product
- ◆ work to the timescale specified in the art or design brief

Evidence should be produced in the form of a sketchbook or appropriate equivalent project work

Assessment Guidelines

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

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

Administrative Information

Unit code:	F1EC 35
Unit title:	Computer Arts and Design: Advanced Software Applications
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Higher National Unit specification: support notes

Unit title: Computer Arts and Design: Advanced Software Applications

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 80 hours.

Guidance on the content and context for this Unit

The purpose of this Unit is to provide the candidates with the opportunity to gain a greater understanding of the possibilities to be gained from the advanced use of computer art and design software. This could include subjects such as multimedia, web design, digital video, illustration, time-based art, computer art, 2D/3D animation and 3D modelling and digital imaging.

The Unit is intended as both a research and practical Unit where the candidate is invited to analyse information and produce a work/sketchbook. The Candidates should then evaluate this information by looking at a number of case studies chosen from the candidates' subject area. In the final Outcome, candidates then apply this knowledge, again within their chosen area.

The Unit has been written to be applicable for a whole range of different art and design activities and the knowledge/skills reflect this.

The section below highlights how the knowledge/skills can be matched to different art, design and visual communication disciplines. Also included here are examples of the type of advanced functions and features found in software associated with computer art and design. This should be seen only as a guide because of the evolving nature of software and computer technology and may only be accurate at the time of writing.

Advanced Art and Design Software Applications:

- ◆ Advanced Computer Graphics: 3D visualisation and animation software
- ◆ Scripting and Programming: Multimedia and interactive web development software
- ◆ Video and Sound Manipulation: Time-based software
- ◆ Mark Up Languages and Style Sheets: Web layout software
- ◆ Print Processing & Image Manipulation: Bitmap editing and printing software

Colour and Pixel Theory

Colour and pixel theory can be applied to most computer graphics subjects. However colour theory for example takes time to master but once understood it helps extend knowledge of software. Similarly, a greater understanding of the mathematics behind colour and pixels will allow for a greater understanding of how computer graphic software works.

File Compression Techniques

Static graphics file compression might be seen, as a basic part of understanding most graphic software. However for motion and time-based files then it is often an advanced part of understand the software.

Higher National Unit specification: support notes (cont)

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Advanced features & functions of selected software

This is generally considered to be associated with the production of 3D graphics and animation. Subjects such as Spline & Shell Modifiers, Nurbs/Nurms, Rigging — both IK and FK and Expressions, Texturing with multiple layers and multipass rendering could be considered as some of the advanced features and function found in 3D modelling software.

Scripting and Programming

Scripting has always been associated with computer graphics to assist with automation and to develop interactivity. At the time of writing, computer artists and designers are increasingly expected to use scripting languages such as Actionscript, Javascript and Lingo. Actionscript for example is closely associated with the web development application Flash and has the capacity for Object Oriented Programming

Video and Sound Manipulation

Scripting can help automate processes. Some software has scripting features that could be considered as advanced functions. Most video and sound software have advanced functions.

Mark Up Languages and Style Sheets

At the time of writing, HTML, XML and CSS for example are the technologies behind WYSIWYG style web development software such as Dreamweaver. Their understanding and use could be seen as and advanced use of such software.

Guidance on the delivery and assessment of this Unit

This Unit has been developed as part of the Computer Arts and Design. It has been identified as one of three key skills Units in the award for study at HND level.

This Unit is likely to form part of a Group Award that is primarily designed to provide candidates with the background knowledge of different technologies used in the practice of computer arts and design. It is expect that the candidate 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 candidate to contextualise the given information.

The Unit has to be applicable to a range of art and design and visual communication disciplines.

Assessment should be continuous, and assessed summatively on completion of all three Outcomes.

Opportunities for developing Core Skills

Candidates should develop advanced skills in the use of Information Technology as they apply the functions and features of chosen art or design software to a brief. They should be fully familiar with sophisticated search strategies in accessing and evaluating electronic sources including a range of Internet sites, electronic databases and journal archives. The effective and responsible use of equipment and software applications, and use of methods for keeping all data gathered secure and

Higher National Unit specification: support notes (cont)

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well organised using efficient systems of recording, coding and storing outline information would be routine. Candidates are assessed on their ability to apply creatively advanced functions of selected software and their understanding of complex colour and pixel theory. Identifying and using to best effect all available resources, setting realistic timescales and adopting appropriate working methods should facilitate the management of any potential difficulties. Group discussion of issues may be useful although candidates should be independently able to justify and apply their own effective design solutions. Candidates should be encouraged to identify appropriate evaluative methods to measure achievement. Evaluation in which all aspects of the application of mixed media and their potential impact are analysed will be a critical underpinning aspect of presentation. Complex ideas and information should be presented accurately and concisely, using an appropriate style and structure for the intended.

Open learning

Because of the practical nature of this Unit, delivery by Open learning is not recommended. Although this Unit could be delivered by distance learning, it would require a considerable degree of planning by the centre to ensure the sufficiency and authenticity of candidate evidence.

For further information and advice please refer to the SQA document *Assessment and Quality Assurance for Open and Distance Learning* which is available on SQA's website: www.sqa.org.uk.

Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (www.sqa.org.uk).

General information for candidates

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You will be expected to undertake a number of research activities and analysis. You will then demonstrate a practical understanding of these by producing a finished piece of art or design work that makes use of appropriate software.

For **Outcome 1** you will compile an illustrative sketch/workbook of examples that analyse the functions and features of chosen art or design software. Carrying out this research it will help you to establish a basis for further study and introduce you to the disciplines of organisation, management and selection of material.

For **Outcome 2** you will look at case studies from within your chosen subject area and compile an illustrative or oral report analysing your examples in terms of the advanced software skills that have been used to create the work.

In **Outcome 3** you will apply your knowledge to a practical art or design brief or assignment. Having made the evaluation and analysis, you will have a clear idea of the advanced technologies used in computer art and design. These considerations will then be applied to the development of practical work.

Finally, for this Outcome, you will produce a finished artefact or design.