

Higher National Unit Specification

General information for centres

Unit title: 3D Design: Digital Modelling

Unit code: F0MC 34

Unit purpose: This Unit is designed to introduce candidates to 3D graphics software. It will enable candidates to gain the technical knowledge and skills required to generate and manipulate 3D objects using appropriate software.

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

- 1 Set up and configure a 3D digital drawing.
- 2 Create 3D digital images.

Credit points and level: 1 HN Credit at SCQF level 7: (8 SCQF credit points at SCQF level 7*)

**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: Entry to this Unit is at the discretion of the centre. Candidates should have competence in operating a computer and knowledge of file format, file size and storage. Knowledge of a 2D software digital/drawing package and/or completion of HN Unit Digital Imaging 1 would be an advantage.

Core Skills: There are opportunities to develop the Core Skills of Information Technology and Numeracy at 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: Outcome 1 is assessed by the production of a minimum of two on screen examples that demonstrate co-ordinates, working units, reference planes and grid.

Outcome 2 is assessed by the creation of dimensionally accurate 3D digital images.

Evidence can be submitted as a digital file or in hard copy format.

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

Set up and configure a 3D digital drawing

Knowledge and/or skills

- ◆ Co-ordinates
- ◆ Working Units
- ◆ Reference planes
- ◆ Grid
- ◆ Storage

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by setting up and configuring a 3D software package for a specific purpose, showing that they can:

- ◆ demonstrate knowledge and use of reference planes and co-ordinate types
- ◆ produce a minimum of two examples which demonstrate co-ordinates, working units, reference planes and grid
- ◆ store images for retrieval

Evidence should be presented as either a digital file or in hard copy format.

Assessment guidelines

A checklist may be employed to identify that candidates have developed all appropriate elements which will include the co-ordinates, working Units, reference planes and grid. The Tutor delivering the Unit should determine the appropriate level of, and, the number of images. The evidence for this Outcome could be submitted either in the form of a digital file or in hard copy format.

Higher National Unit specification: statement of standards (cont)

Outcome 2

Create 3D digital images

Knowledge and/or skills

- ◆ Component parts
- ◆ Dimensions
- ◆ Use of tools

Evidence Requirements

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

- ◆ create dimensionally accurate 3D digital images
- ◆ use image editing and manipulation tools
- ◆ produce a final 3D image that is fit for purpose

Images should be presented either as a digital file or in hard copy format.

Assessment guidelines

Candidates could work to a given brief. The evidence submitted for this Outcome could be in the form of either a digital file or in hard copy format.

Administrative Information

Unit code: F0MC 34
Unit title: 3D Design: Digital Modelling
Superclass category: JC
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History of Changes:

Version	Description of change	Date

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Higher National Unit specification: support notes

Unit title: 3D Design: Digital Modelling

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 purpose of this Unit is to introduce candidates to a 3D computer software package and to acquire skills to use the software as a tool when undertaking a design project.

The object given for modelling by the tutor should reflect the chosen area of study of the candidates.

Guidance on the delivery and assessment of this Unit

This Unit has been developed as part of the HND Computer Art and Design Award. It is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

Opportunities may be taken to link or integrate with design projects.

This Unit should be delivered initially as a series of demonstrations and exercises. Candidates could be given an object or plan on which to base the realisation of the model exercise.

Assessment can be made from a series of responses to test the candidates' knowledge of the software, if appropriate and from assessing a series of 3D images to test the candidates' skills in practical application. Candidates should save all work to a suitable storage medium.

Final submissions may be submitted electronically or as hard copy.

Opportunities for developing Core Skills

Candidates will work in a context which requires original computer aided design work. Informative work access to, and opportunities for, evaluating digital design models would be valuable. Candidates should be able to work unaided in the selection of appropriate software and the modification or customising of applications to meet identified needs of purpose and context.

Discussions with the class group and/or the assessor would, however, reinforce analytical evaluation of approaches taken to the design process.

Accuracy in the interpretation and communication of graphic information underpins the competencies developed in the Unit. Some candidates may benefit from formative opportunities to further develop the effectiveness of their application of graphic data. The use of software packages or on-line Tutorials to enhance skills may be useful. Consideration for other users and an adherence to practices and procedures impacting on security and safety would be a routine aspect of good practice. Candidates could, in some circumstances, be advised on techniques for diagnosing, and if practical, correcting some technical problems.

Higher National Unit specification: support notes (cont)

Unit title: 3D Design: Digital Modelling

Open learning

This Unit could be delivered by open learning. However it would require planning by the centre to ensure 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

Unit title: 3D Design: Digital Modelling

This Unit will introduce you to the use of a 3D digital graphics package. It has been designed to give you knowledge of the basic building blocks of 3D software and the skills required to construct basic images suitable for a 3D design project.

On completion of the Unit you will be able to:

- ◆ set up and configure a 3D digital drawing
- ◆ create 3D digital images

In **Outcome 1** you are required to demonstrate how to set up the basic drawing parameters that you will need to produce a particular image. This will include establishing your basic drawing area, specifying the scale and type of drawing Units you intend to use. You will also be required demonstrate a knowledge of co-ordinates, the 3D drawing space and also the separate parts of the drawn object.

In **Outcome 2** you will create a series of images using various digital image editing and manipulation tools.