Higher National Unit Specification

General information for centres

Unit title: 3D Design: Digital Modelling Development

Unit code: F0MB 35

Unit purpose: This Unit is designed to develop the candidate's knowledge and skills in the use of 3D software. It will enable them to produce realistic 3D digital images suitable for presentation work.

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

1 Create realistic 3D digital imagery from source material.
2 Create views using 3D digital imagery.

Credit points and level: 1 HN Credit at SCQF level 8: (8 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 3D design process having completed HN Units in 3D Design or have similar qualifications or experience.

Core Skills: There are opportunities to develop the Core Skill of Information Technology 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: Assessment of the Unit could take place at a single event. Alternatively, the Outcomes could be assessed separately.

Outcome 1 is assessed by the creation of 3D digital imagery. Evidence can be submitted as a digital file or hard copy consisting of a project plan and image(s).

Outcome 2 is assessed by manipulating a digital image(s). Evidence can be submitted as a digital file or hard copy containing a minimum of three views.

Higher National Unit specification: statement of standards

Unit title: 3D Design: Digital Modelling Development

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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

Create realistic 3D digital imagery from source material

Knowledge and/or skills

- Interpretation of source material
- Dimensioning
- Project planning
- Software
- Rendering

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and skills by showing that they can, with reference to a given brief:

- evaluate the geometric composition of source material
- extract dimensions from the source material
- plan a sequence of construction and rendering and produce a project plan
- use appropriate software
- create dimensionally accurate and realistically rendered 3D image

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

Assessment guidelines

Candidates should work to a brief that provides source material from which candidates will extract the information necessary to create a complex 3D digital image. The tutor should determine the level of complexity and number of images.

Evidence for this Outcome could be submitted in the form of a digital file or hard copy consisting of a project plan and image. Consulting candidates' project plans and their evaluations of source material could assist the authentication of evidence.

Higher National Unit specification: statement of standards (cont)

Unit title: 3D Design: Digital Modelling Development

Outcome 2

Create views using 3D digital imagery

Knowledge and/or skills

- Image manipulation
- 3D Modelling
- Rendering
- Software
- Storage

Evidence Requirements

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

- manipulate a digital image
- produce a minimum of three views which are a realistic representation
- produce a minimum of three views which are suitable for final presentation
- store images using a suitable format for final output

Evidence should be presented as a digital file or hard copy that is a realistic representation ready for client presentation.

Assessment guidelines

Using an image created for Outcome 1, candidates may produce a realistic image for final presentation. Evidence for this Outcome could be submitted in the form of a digital file or hard copy.

Administrative Information

Unit code: F0MB 35

Unit title: 3D Design: Digital Modelling Development

Superclass category: JC

Original date of publication: August 2007

Version: 01

History of Changes:

Version	Description of change	Date

Source: SQA

SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of Higher National qualifications.

Additional copies of this Unit specification can be purchased from the Scottish Qualifications Authority. Please contact the Customer Contact Centre for further details, telephone 0845 279 1000.

Higher National Unit specification: support notes

Unit title: 3D Design: Digital Modelling Development

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 enhance the candidate's skills and knowledge in the use of 3D software in order to produce realistic 3D digital imagery suitable for presentation work, for example for use as visuals in client presentation of a 3D concept.

Candidates will evaluate source material and correctly dimension it in order to be able to create accurate and realistic 3D digital images from that source material.

For Outcome 1 candidates should work to a given brief/instruction that would provide source material from which candidates will extract the information necessary to create a 3D digital image. The level and number of images should be determined by the tutor and would vary according to the complexity of the images selected. Evidence for this Outcome could be submitted in the form of a digital file or hard copy consisting of image/s and a project plan.

For Outcome 2 candidates should demonstrate their ability by manipulating the image created for Outcome 1 in order to create a realistic representation ready for client presentation.

Guidance on the delivery and assessment of this Unit

This Unit has been developed for the HND 3D Design Group Award. 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 Unit may be linked/integrated with suitable Units in the HND 3D Design Group Award and a thematic approach adopted for both delivery and assessment.

This Unit should be delivered initially as a series of demonstrations and exercises.

For **Outcome 1** candidates could be given source material to work from, or they could provide it themselves. The tutor delivering the Unit can determine the suitability of any proposed material. The source material can be either 2D or 3D and could have been produced as part of another design Unit. Assessment evidence should show geometric evaluation of the source material. This could be in the form of a digital file or hard copy consisting of image/s and a project plan. This would be accompanied by a series of 3D images that demonstrate the candidate's practical application of their skills and knowledge.

Consulting candidates' project plans and their evaluations of source material could assist the authentication of evidence.

Higher National Unit specification: support notes

Unit title: 3D Design: Digital Modelling Development

For **Outcome 2**, having produced 3D images for Outcome 1, candidates would then go on to produce realistic representations normally using the image(s) already produced. Authentication of evidence for this Outcome would normally be by observation of candidates carrying out the task or at least a major part of the task. Observation could be recorded on a checklist.

Opportunities for developing Core Skills

The specific skills elements for Information Technology can be enhanced to a sophisticated level as candidates undertake the Unit and produce digital imagery. The selection of appropriate software application packages and the ability to manipulate, edit and store data in an appropriate format is an essential aspect of achievement. Candidates should be encouraged to identify needs of purpose and context and to maximise the effectiveness and impact of information communication for output on screen and in hard copy.

Consideration for other users and an adherence to practices and procedures impacting on security and safety would be integral to work undertaken. Candidates could be advised, if practical, on techniques for diagnosing and correcting potential technical problems.

Open learning

As this Unit is digitally based there are opportunities for Open Learning. The submission for this Outcome could be in the form of a digital file or a hard copy. Centres offering the Unit will be responsible for ensuring validity 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 Development

This Unit is intended to develop your knowledge and skills in the use of software for creating 3D images.

For **Outcome 1** you will produce realistic 3D images. Working from source material, you will evaluate the geometric composition of that material, extract dimensions and plan the way in which you are going to approach the construction and rendering of a 3D image that is based on the information that you have gathered. You will then construct the image and apply accurate rendering to the surfaces using 3D graphics software.

For **Outcome 2** you will manipulate an image to create a realistic representation ready for final presentation to a client. You will make use of the image(s) created for Outcome 1.