Higher National Unit specification

General information for centres

Unit title: 3D Level Editing

Unit code: F869 34

Unit purpose: This Unit is designed to provide candidates with an introduction to designing and developing a prototype custom level within a 3D level editor software package. The Unit should provide candidates with the knowledge and skills to design a themed environment and develop a basic level using features and facilities incorporated within the chosen 3D level editor software package. This Unit is primarily intended for candidates who propose to follow a career within the field of computer games development or 3D modelling.

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

1   Design a prototype level to be built within a 3D level editor software package for a given project brief.
2   Create a prototype level within a 3D level editor software package for a given project brief.
3   Publish and play the prototype level within the game player software package.

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: Access to this Unit will be at the discretion of the Centre. However, it is recommended that candidates should have proficiency in the use of computers and an understanding of computer games technology. This may be demonstrated by possession of F1K4 10 *Computer Games: Digital Gaming Design* (SCQF level 4) or equivalent qualifications or experience.

Core Skills: The achievement of this Unit gives automatic certification of the following:

♦   Critical Thinking at SCQF level 5
♦   Planning and Organising at SCQF level 5

There are also opportunities to develop aspects of the Core Skill in *Communication* at SCQF level 5 in this Unit which are highlighted in the Support Notes of this Unit specification.

General information for centres (cont)

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: It is recommended that all Outcomes are integrated into one holistic assessment which takes the form of a project. This project should require the candidate to design, create and publish a prototype level within a 3D level editing software package.

The assessment should be completed on an individual basis under open-book supervised conditions.

Assessors should ensure themselves of the authenticity of the candidate's evidence.

Higher National Unit specification: statement of standards

Unit title: 3D Level Editing

Unit code: F869 34

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

Design a prototype level to be built within a 3D level editor software package for a given project brief

Knowledge and/or Skills

♦ Working with a project brief
♦ Creation of design documentation

Outcome 2

Create a prototype level within a 3D level editor software package for a given project brief

Knowledge and/or Skills

♦ Basic environment modelling
♦ Understanding scale
♦ Textures
♦ Use of static meshes
♦ Duplication techniques
♦ Lighting effects
♦ Debugging
♦ File formats
♦ Compression
♦ Import techniques

Outcome 3

Publish and play the prototype level within the game player software package

Knowledge and/or Skills

♦ File naming conventions
♦ File structures
♦ Game play

Higher National Unit specification: statement of standards (cont)

Unit title: 3D Level Editing

EVIDENCE REQUIREMENTS FOR THE UNIT

Evidence is required which demonstrates that the candidate has achieved the appropriate level of knowledge and understanding of the content of the Unit. Assessors should ensure the authenticity of the candidate's work especially where evidence has been produced while unsupervised.

Outcome 1

Candidates will need to provide evidence to demonstrate their Knowledge and Skills by showing that they can design a prototype level for a given project brief.

A candidate's response can be judged to be satisfactory where the evidence produced shows the candidate is able to:

♦ interpret a project brief by defining a concept for a computer games level
♦ produce design documentation which outlines the theme, scope and structure of the level

Outcome 2

Candidates will need to provide evidence to demonstrate their Knowledge and Skills by showing that they can create a prototype level.

A candidate's response can be judged to be satisfactory where the evidence produced shows the candidate is able to:

♦ use an appropriate 3D level editor software package to create an environment that relates to the design documentation and project brief
♦ demonstrate good use of the level editor features to create a well designed and effective prototype level incorporating:
  — three distinct areas within the geometry
  — at least two different textures
  — at least two static meshes to support the theme of the game
  — lighting features
  — at least two other features offered by the level editing software such as movers, vertex editing, water
  — debug the prototype

Outcome 3

Candidates will need to provide evidence to demonstrate their Knowledge and Skills by showing that they can publish and play the prototype level.

A candidate's response can be judged to be satisfactory where the evidence produced shows the candidate is able to:

♦ save a copy of the completed file in a suitable location with the correct file naming convention
♦ access the level through the game player interface and demonstrate the functionality of the game through game play

Higher National Unit specification: statement of standards (cont)

Unit title: 3D Level Editing

ASSESSMENT GUIDELINES FOR THE UNIT

This Unit is intended to develop candidates' creative and technical skills through the use of a 3D level editing software package. It is recommended that the knowledge and skills are taught prior to attempting the assessed project. It may be beneficial to candidates if the brief and assessment requirements are issued early on in the Unit.

It is recommended that the candidate's knowledge and skills relating to Outcomes 1, 2 and 3 should be assessed by means of a project brief. This should require the candidate to design, create, publish and demonstrate the functionality through game play of a prototype level within a computer games level editor using the features and techniques provided by the software. There should be no requirement for programming skills within this project. The emphasis should be on analysing the project brief which requires problem solving capabilities along with a creative approach to the solution. The project should also allow scope for candidates to devise their own theme and geometry along with supporting features thereby encouraging individuality. The assessment should be completed on an individual basis and is open book. It is recommended that the assessment is carried out under supervised conditions but where this is not possible it may be necessary to ask the candidate to demonstrate their skills by observing additional tasks.

Candidates should be encouraged to manage their time effectively and produce the design documentation prior to implementation, maintaining a professional standard of work for documentation and the end product.

Candidates could evidence their knowledge and skills by means of an oral presentation to the assessor supported by electronic evidence such as a presentation including design sketches, justification of choice of theme, textures and features; screenshots of the completed level etc. This should also include a demonstration of the final level within the game player. Alternatively, a report may be presented in any suitable way. Reports which may be written or oral should outline design decisions, choice of theme and components of the built level. The report should be supported by a demonstration of the final level within the game player. Candidates should aim to communicate their design decisions and demonstrate their prototype in an effective manner.

In either case, the candidate should provide electronic files saved within appropriate file formats for all stages of the development process up to and including the final level.

Administrative Information

Unit code: F869 34

Unit title: 3D Level Editing

Superclass category: CB

Original date of publication: August 2009

Version: 01

History of changes:

Version	Description of change	Date

Source: SQA

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 Level Editing

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

3D level editing software is readily available and is popular because it is proven to be easily learned by both beginners who can simply point and click to quickly develop a level and by more advanced developers who want to customize objects and entities within the level. There is a wide selection of 3D level editors on the market. UnrealEd is probably the most popular as it has a large community base of users, a powerful underlying engine and an easy to use interface. There are books and online resources available for support and tutorial preparation. It is also a cost effective implementation for centres due to its relatively low cost per user.

It is anticipated that the Unit would be delivered early in the first year of the HND Computer Games Development programme as an introduction to developing a games level without the need for any programming knowledge.

This Unit is intended as an introduction to 3D level design and it aims to encourage creative and practical activities that will ultimately lead to the production of an atmospheric games environment having learned a number of basic design and modelling skills. The content will broaden the candidate's awareness of different methods of games creation and implementation through an engaging and creative approach, encouraging self direction through exploring and utilising the facilities of the chosen software package.

Guidance on the delivery and assessment of this Unit

This Unit is intended to give candidates the knowledge and skills to undertake a project which involves designing and creating a computer games level from a given brief. The teaching and learning emphasis is on creative rather than technical skills.

It is recommended that this Unit be delivered on a stand alone basis or as a precursor to the HN Unit *Games Customisation and Scripting* at SCQF level 8.

All Outcomes for the Unit are assessed in one holistic assessment. While much of the knowledge and skills will require to be delivered prior to undertaking the assessment project, centres may wish to consider providing candidates with the project brief and assessment requirements early on in the delivery schedule to assist them in planning their approach. The Knowledge and Skills required should be delivered through tutor led demonstrations and practical tutorials. There may be opportunities to encourage candidates to research specific features of the software on the Internet, through forums or online tutorials.

Candidates should be encouraged to play games within the game player in order to analyse the geometry and themes available within the game player software. This knowledge should inform their design decisions. Centres are encouraged to provide class time for group discussion on design ideas and concepts. It may be possible to incorporate peer analysis and feedback sessions, particularly at the design stage.

Higher National Unit specification: support notes (cont)

Unit title: 3D Level Editing

It is likely that the assessment will take a number of weeks to complete. The design and development stages could be completed in defined stages or the assessment evidence may be submitted in its entirety. The approach chosen must be suitable for the candidates and not disadvantage them. Assessment evidence could take the form of an oral presentation to the assessor (or class) supported by electronic evidence such as a PowerPoint presentation including scanned design sketches; information on choice of theme and textures; screenshots of the completed level etc. This presentation should also incorporate a demonstration of the final level within the game player. Alternatively, the candidate could produce a report outlining design decisions, proposed geometry, choice of theme, components of the built level along with a demonstration of the final level within the game player. Observation checklists should be used to verify all required features have been developed and that the game works correctly.

In either case, the candidate should provide electronic files saved with appropriate file formats for all stages of the development process up to and including the final level.

Opportunities for developing Core Skills

Since the Core Skill components of Critical Thinking at Planning and Organising at SCQF level 5 are embedded in this Unit, it is strongly recommended that you follow the assessment guidelines given. If you wish to use a different assessment model, you should seek prior verification of the assessment instrument(s) you intend to use to ensure that the Core Skill components are still covered.

Open learning

If this Unit is delivered by open or distance learning methods, additional planning and resources may be required for candidate support, assessment and quality assurance.

For further information and advice, please see Assessment and Quality Assurance for Open and Distance Learning (**www.sqa.org.uk**).

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website **www.sqa.org.uk/assessmentarrangements**

General information for candidates

Unit title: 3D Level Editing

This Unit is designed to introduce you to developing a computer games level within a 3D games level editing software package. The aim of the Unit is to provide you with the knowledge and skills to interpret a project brief and then go on to design, develop and play a prototype level within the chosen software editor.

You will be assessed on developing a working games level prototype based on your creative designs and using the knowledge and practical skills you have learned. There is one assessment for this Unit, which covers all the Outcomes.

In Outcome 1 you will be required to create design documentation based on the requirements laid out in a give project brief. This documentation should include details explaining the theme of the game, design sketches to indicate the proposed geometry and other information that supports the proposed look and feel of the level. You should also consider the scope of your task, ie the amount of work involved and the time you have available to complete the project.

In Outcome 2 you will build the level you have designed within the chosen 3D level editing software package and include the required number of features and elements.

In Outcome 3 you will publish your level, ie save it with the correct file naming convention within the appropriate file folder structure of the game player software. You should ensure that it can be played by demonstrating the level to your assessor.

On completion of the Unit you should be able to:

♦   design a prototype level to be built within a 3D level editor software package for a given project brief
♦   create a prototype level within a 3D level editor software package for a given project brief
♦   publish and play the prototype level within the game player software package