National Unit specification: general information

Unit title: Animation: Lighting (SCQF level 6)

Unit code: FV2T 12

Superclass: KF

Publication date: September 2011

Source: Scottish Qualifications Authority

Version: 02

Summary

This Unit develops candidates' understanding of the use of light in arts and film, both traditional and animated. Candidates will learn about properties of light, types of light sources within computer generated lighting and will carry out a lighting study, which can then be applied to produce a computer generated scene.

The Unit is appropriate for anyone with an interest in computer generated animation and arts. It has been developed as part of the National Certificate in Computer Arts and Animation at SCQF level 6 and is also available as a freestanding Unit.

Outcomes

1 Describe aspects of light within a computer generated scene.
2 Describe the use of lighting moods and aesthetics within computer generated art.
3 Plan and carry out a light study of a landmark.
4 Create a computer generated model or scene showing the use of lighting.

Recommended entry

While entry is at the discretion of the centre, candidates would normally be expected to have attained three Standard Grades at General level, including English and Mathematics/ Numeracy, or other equivalent qualifications/experience. It would also be beneficial for candidates to have attained the following Unit or have equivalent knowledge and skills:

- Animation: An Introduction to Lighting (SCQF level 5)

National Unit specification: general information (cont)

Unit title: Animation: Lighting (SCQF level 6)

Credit points and level

1 National Unit credit at SCQF level 6 (6 SCQF credit points at SCQF level 6*)

**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.*

Core Skills

Achievement of this Unit gives automatic certification of the following Core Skills component:

- Critical Thinking at SCQF level 6
- Planning and Organising at SCQF level 4

There are also opportunities to develop aspects of Core Skills which are highlighted in the Support Notes of this Unit specification.

National Unit specification: statement of standards

Unit title: Animation: Lighting (SCQF level 6)

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.

Outcome 1

Describe aspects of light within a computer generated scene.

Performance Criteria

(a) Describe the properties of light within a computer generated scene.
(b) Describe the properties of light sources within a computer generated scene.
(c) Describe the appropriate referencing conventions.

Outcome 2

Explain the use of lighting moods and aesthetics within computer generated art.

Performance Criteria

(a) Explain the use of lighting moods within computer generated art.
(b) Explain the use of lighting aesthetics within computer generated art.
(c) Describe examples of different types of lighting moods and aesthetics used in computer generated art.

Outcome 3

Plan and carry out a light study of a landmark.

Performance Criteria

(a) Select a landmark to be studied and describe the reasons for this choice.
(b) Plan safe visits to the chosen landmark.
(c) Sketch the landmark under different lighting conditions.
(d) Photograph the landmark for reference purposes.

Outcome 4

Create a computer generated model or scene showing the use of lighting.

Performance Criteria

(a) Create a simple computer generated model or scene of a chosen landmark.
(b) Plan suitable lighting for the computer generated model or scene.
(c) Create computer generated lighting to effectively light the model or scene.

National Unit specification: statement of standards (cont)

Unit title: Animation: Lighting (SCQF level 6)

Evidence Requirements for this Unit

Evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

The evidence produced must be submitted using the candidate's own words. Assessors should assure themselves of the authenticity of candidate's evidence.

For Outcome 1 written and/or oral recorded evidence is required, gathered under supervised, open-book conditions, in the form of:

- a description of the properties of light within a computer generated scene to show how shadows and shadow types, lighting colour and lighting intensity can be simulated by computer rendering
- a description of the choices of light sources within a computer generated scene to simulate real life lighting sources such as distant lights, spotlights and standard light bulbs
- a description of the referencing conventions used to measure light within a computer generated scene to include wattage, candelas and Kelvin and how they relate to real life lighting

For Outcome 2 written and/or oral recorded evidence is required, gathered under supervised, open-book conditions, in the form of:

- an explanation of how computer generated lighting is used to generate a mood/aesthetic feel within computer generated art giving two examples from: gloomy mood, high reflections, a scene at a particular time of day
- a description of the use of three different examples of types of lighting moods/aesthetics used in computer generated art

For Outcome 3 written and/or oral recorded and product evidence is required, gathered under open-book conditions, in the form of:

- a short description of the landmark chosen and the reasons for its choice
- a plan of how the candidate intends to visit the landmark, to include a completed risk assessment
- a minimum of three digital photographs of the landmark, under different lighting conditions
- description, must be enhanced by the use of a minimum of three accompanying sketches, to clearly convey the use of lighting in the examples chosen

For Outcome 4 written and/or oral recorded and product evidence is required, gathered under open-book conditions, in the form of:

- a computer generated model or scene of the chosen landmark, using simple shapes that reflect the landmark's size and form
- a plan of how the candidate intends to generate suitable lighting for the computer generated model or scene
- a suitably lit computer generated model or scene of the chosen landmark emphasising the use of shadow, colour and intensity of the computer generated light

National Unit specification: support notes

Unit title: Animation: Lighting (SCQF level 6)

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

This Unit will provide opportunities for candidates to acquire knowledge of the fundamental principles of lighting and the skills which are essential in the production of a computer generated model or scene.

In the Unit the candidate will research the types and properties of lighting available prior to developing a lighting study in response to a brief. They will analyse and assess the importance of all factors influencing and affecting the study, including health and safety issues. They will produce a computer generated model or scene from a photographed landscape and apply suitable computer generated lighting.

It must be emphasised that lighting is a vast subject area and that the Unit is not intended to provide specialist expertise but to develop knowledge to raise candidates' awareness of lighting both functionally and aesthetically. Candidates should fully recognise the importance of lighting within computer generated art. Candidates should also recognise that lighting and its effects can significantly impact on a computer generated piece of art.

The candidate will also carry out a risk assessment of their chosen landmark adhering to Health and Safety Guidelines such as:

- risk of transport to be used
- awareness of traffic conditions
- policies of any businesses to be visited
- child protection

Candidates should be supplied with photographic equipment or may use the camera facilities on devices such as mobile phones.

This Unit is partially aligned to the National Occupational Standards Units (*Skillset*):

- ANIM 15 Create 3D Animation
- ANIM 16 Render 3D Animation

Guidance on learning and teaching approaches for this Unit

This Unit has been developed as part of the National Certificate in Computer Arts and Animation. Where taken as part of the National Certificate in Computer Arts and Animation at SCQF Level 6, opportunities may be taken to link or integrate with other aspects of the NC and a thematic approach adopted for both delivery and assessment. The candidate's learning experience would be greatly enhanced if this Unit was delivered prior to, or along with, project-based interior or exhibition design Units.

National Unit specification: support notes (cont)

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Outcome 1

As candidates may have limited knowledge of the principles of lighting, the delivery should be informative — lecture/seminar based. Content should focus on the fundamental principles of lighting, types of lighting, light sources and physical properties, light fitting types and aesthetic applications within a computer generated model or scene rather than on an expert level of technical knowledge.

Candidates should be encouraged to use a wide variety of research sources and to show initiative in finding original sources of research.

Outcome 2

Content should focus on the fundamental use of lighting within various computer generated media to convey a mood or to enhance the aesthetics of the work.

Candidates should be encouraged to use a wide variety of research sources and to show initiative in finding original sources of research. Extensive use of the internet and library facilities would be beneficial.

Outcome 3

Candidates plan and carry out a visit to a landmark. As such they must safely plan their visit and try to visit under differing weather and lighting conditions to appreciate the effect of light on the scene. Candidates must photograph the landmark for reference use in generating the computer model or scene in Outcome 4.

Outcome 4

Candidates create a computer model or scene of the chosen landmark. Emphasis is on lighting the scene or model, therefore it should be geometrically simple with the emphasis placed on the recreation of shadows, colours and intensity of light. The model or scene will be based on the photographs generated in Outcome 3 and simple shapes that reflect the landmark's size and form can be used.

Guidance on approaches to assessment for this Unit

In relation to Outcomes 1 and 2 candidates could produce folio evidence which should contain research information, gathered from a variety of sources, such as the internet, books and magazines, that shows a developing knowledge of the principles and uses of computer generated lighting in relation to computer generated art.

Outcomes 3 and 4 are practical in nature and the assessment approaches are fully expressed in the Evidence Requirements.

National Unit specification: support notes (cont)

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Opportunities for the use of 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 candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003), SQA Guidelines on e-assessment for Schools (BD2625, June 2005)*.

Opportunities for developing Core Skills

In this Unit candidates will:

- describe types and properties of lighting
- describe how light can create moods
- select examples to illustrate aspects of lighting
- produce a plan for a visit
- carry out a risk assessment
- assess lighting conditions
- produce photographs and sketches
- create a computer generated model

This means that as candidates are doing this Unit they will be developing aspects of the Core Skills in *Communication*, *Problem Solving* and *ICT*.

In addition candidates may develop aspects of the following Core Skills where specific learning and teaching approaches are adopted:

- *ICT* — through use of the internet in their research.
- *Working with Others* — through group research, planning and practical activities.
- *Problem Solving* — through communicating ideas, analysing and assessing situations in order to make decisions. They will plan and think critically and apply conclusions, to produce a computer generated scene lighting study which will involve a significant level of creative thinking.

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**

History of changes to Unit

Version	Description of change	Date
02	Core Skills Components Critical Thinking at SCQF level 6 and Planning and Organising at SCQF level 4 embedded.	29/09/2011