Higher National Unit Specification

General information for centres

Unit title: 3D Design: Introduction to Lighting

Unit code: F0MR 35

Unit purpose: This Unit is designed to enable candidates, from interior design and exhibition design disciplines, to develop knowledge of the principles of lighting design. It will enable candidates to develop an awareness of the types and sources of lighting that are commercially available to fulfil the requirements of 3D design projects.

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

1 Research a variety of lighting types and their properties.
2 Analyse the application of lighting design schemes.
3 Produce a lighting scheme design in response to a given brief.

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 experience 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 Problem Solving at SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components. There is also the opportunity to develop Core Skills in Communication.

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 an investigative/research task.

Outcome 2 is assessed by responses to case studies.

Outcome 3 is assessed by a response to a given brief. Evidence includes the production of a lighting plan, specification board (or equivalent) and colour sketches of the lighting design effects within the scheme.

Higher National Unit specification: statement of standards

Unit title: 3D Design: Introduction to Lighting

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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

Research a variety of lighting types and their properties

Knowledge and/or skills

- Research
- Fundamental principles of lighting
- Lighting types
- Properties of lighting types
- Light fittings
- Referencing conventions

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can, with reference to a particular task:

- use a minimum of three different sources of research
- accurately identify a variety of lighting types
- accurately identify the associated properties of types of lighting
- accurately identify types of light fittings
- use accepted referencing conventions

Evidence should be presented as a written and illustrated report or equivalent.

Assessment guidelines

Evidence could be presented as a written and illustrated report of a minimum of 4 x A4 pages or equivalent. The report could be in any suitable format – sketchbook enquiry, digitally generated or illustrated oral presentation.

Assessment of this Outcome is likely to be distinct from the assessment of Outcomes 2 and 3. However, knowledge gained through completion of this Outcome will contribute directly to Outcomes 2 and 3.

Higher National Unit specification: statement of standards (cont)

Unit title: 3D Design: Introduction to Lighting

Outcome 2

Analyse the application of lighting design schemes

Knowledge and/or skills

- Lighting scheme design
- Lighting terminology
- Lighting principles
- Sources of lighting
- Lighting design aesthetics
- Lighting design function

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can, with reference to three case studies, analyse:

- lighting design schemes
- fundamental lighting principles
- physical properties of light sources
- aesthetic applications of lighting schemes

Evidence should be presented as a written/oral illustrated report.

Assessment guidelines

Evidence could be presented as a written and illustrated report of a minimum of 3 x A2 pages or equivalent that covers a minimum of three case studies. The report could be in any suitable format — sketchbook enquiry, digital or illustrated oral presentation.

The assessment of this Outcome can be combined with Outcome 3.

Higher National Unit specification: statement of standards (cont)

Unit title: 3D Design: Introduction to Lighting

Outcome 3

Produce a lighting scheme in response to a given brief

Knowledge and/or skills

- Lighting principles
- Design process
- Specification of suitable fittings
- Lighting terminology
- Lighting symbols
- Visual presentation

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can, in response to a given brief:

- produce a lighting design
- specify light fittings
- illustrate a lighting design

Evidence should be presented in the form of:

- a scale lighting plan using industry standard terminology and symbols
- specification board (or equivalent) containing images and manufacturers' information on light fittings selected
- evidence could be presented as an A2 board (or equivalent) containing 3D colour sketches of the lighting design effects within the scheme

Assessment guidelines

The assessment of this Outcome may be combined with the case studies from Outcome 2.

Administrative Information

Unit code: F0MR 35

Unit title: 3D Design: Introduction to Lighting

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: Introduction to Lighting

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 opportunity for candidates to acquire knowledge of the fundamental principles of lighting essential in the production of a 3D design solution.

It should be recognised that lighting is a vast subject area and that the Unit is not intended to provide specialist expertise but to develop basic knowledge and to raise the candidates' awareness of lighting design both functionally and aesthetically. Candidates should fully recognise the importance of lighting within 3D design. Candidates should also recognise that lighting and its effects can significantly impact on a 3D design scheme.

Guidance on the delivery and assessment of this Unit

This Unit has been developed as part of the HND 3D Design Group 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 other aspects of the course 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.

Outcome 1

As candidates will have limited or no 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 rather than an expert level of technical knowledge.

Guest lecturers with specialist knowledge and external site visits would be beneficial as would group tasks to encourage active discussion.

Candidates should be encouraged to use a wide variety of research sources and to show initiative in finding original sources of research. The illustrated report produced should contain research information that shows a developing knowledge of the principles and uses of lighting and its effects on a 3D design scheme.

Higher National Unit specification: support notes (cont)

Unit title: 3D Design: Introduction to Lighting

Outcome 2

External visits would be beneficial to raise awareness of the lighting scheme designs which surround us on a daily basis. Case studies could be selected by the Tutor or the candidate and may relate to a specific linked Interior Design Unit. As above, lectures, seminars and specialist guest lecturers may be appropriate in the delivery of this Outcome, as would group tasks to encourage active discussion.

Tutors may be required to monitor the progress of the case study reports on a one to one basis during class time, ensuring that there is a cohesive pattern of analysis and evaluation.

Outcome 3

Candidates could be briefed for this Outcome in conjunction with an interior or exhibition design project which would give a clear context for the investigation.

Candidates' lighting scheme design ideas can be discussed on a one to one basis with the Tutor or in group discussions.

Candidates should be shown lighting plans containing standard symbols and specification sheets as exemplars.

It is anticipated that the delivery of this Outcome would take about 50% of the time allocated to this Unit.

Compliance with Evidence Requirements could be recorded on a checklist.

Opportunities for developing Core Skills

All elements of the Core Skill of Problem Solving should be naturally developed and enhanced as the Unit is completed. Candidates research the types and properties of lighting available prior to developing a scale lighting plan in response to a brief. Analysing and assessing the importance of all factors influencing and affecting the design, including Health and Safety issues will develop skills in planning and critical thinking. Applying conclusions to produce a specification board containing images and manufacturers' information on light fittings selected and colour sketches of lighting design effects within the scheme will involve a sophisticated level of creative thinking. Critical reflection and consideration of the success of the design solutions could be encouraged in discussion with the assessor in order to reinforce analytical and evaluative approaches to problem solving in working practice.

Open learning

It is not recommended that this Unit be delivered by Open learning due to its practical nature. 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**.

Higher National Unit specification: support notes (cont)

Unit title: 3D Design: Introduction to Lighting

Candidates with disabilities and/or additional support needs

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. 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: Introduction to Lighting

As a designer of three dimensional spaces and places it is essential that you know the principles of lighting in order to develop a complete design solution for your client.

In **Outcome 1** you will investigate a variety of lighting types, sources and commercially available light fittings, enabling you to identify these and understand their associated properties.

In **Outcome 2** you will analyse examples of lighting scheme design and produce a reference file that will be used as a source of inspiration and information.

In **Outcome 3** you will be required to develop and produce a complete lighting scheme design in response to a given design brief. You will use correct terminology and symbols and produce appropriate drawings and specifications.

You will be encouraged to develop your observational skills, research skills and 2D and 3D visualisation skills throughout this Unit and you will use a variety of drawing techniques to illustrate your thoughts and ideas. You will be encouraged to work both independently and as part of a group where you will be encouraged to participate in discussion and debate.