Higher National Unit Specification

General information for centres

Unit title: Model Making: Integrated Lighting Effects

Unit code: F0MX 35

Unit purpose: This Unit is designed to enable candidates to explore, use and evaluate the use of integrated technical lighting effects in the area of model making using battery powered and transformed low voltage circuits or sealed 240v units.

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

1 Identify and evaluate integrated lighting effects.
2 Demonstrate the positioning and fixing of lighting circuits.
3 Plan the inclusion of integrated lighting in a model.
4 Integrate a lighting circuit into a model.

Credit points and level: 2 HN Credits at SCQF level 8: (16 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 will be at the discretion of the centre. However, it is recommended that candidates have sound knowledge of model making materials, processes and terminologies. This could be demonstrated by possession of HNC Modelmaking or equivalent.

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.

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: This Unit could be assessed by three or four instruments of assessment.

Outcome 1 is assessed by the candidates providing an evaluation of integrated lighting effects.
Outcomes 2 and 4 are assessed by practical assignments.
Outcome 3 is assessed by a presentation.

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

Identify and evaluate integrated lighting effects

Knowledge and/or skills

- Types of lighting and effect
- Integration and construction
- Care and maintenance
- Health and safety implications

Evidence Requirements

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

- identify types of lighting for integrating into models
- explain what types of effects, specific types of light can achieve
- explain care and maintenance of models that include integrated lighting
- evaluate factors affecting construction of models where lighting is to be included
- explain health and safety implications with the inclusion of integrated lighting

Evidence should be presented in the form of a written/oral/digitally-based report of a minimum 500 words or equivalent which includes referenced visuals.

Assessment guidelines

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

An observation checklist may be used to ensure that candidates have addressed all the knowledge and/or skills requirements.

Higher National Unit specification: statement of standards (cont)

Unit title: Model Making: Integrated Lighting Effects

Outcome 2

Demonstrate the positioning and fixing of lighting circuits

Knowledge and/or skills

- Lighting circuits
- Fixings
- Components
- Signage

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by showing that they can, in the production of sample integrated lighting circuits:

- use battery powered/transformed low voltage circuits and/or sealed 240v units
- demonstrate the accurate fixing of components
- demonstrate the correct positioning of components
- demonstrate the accurate application of signage
- carry out work to previously specified standards

Assessment guidelines

This Outcome may be a project-based assignment produced under studio/workshop conditions.

An observation checklist may be used to ensure that the candidates have addressed all the knowledge and/or skills requirements.

Outcome 3

Plan the inclusion of integrated lighting in a model

Knowledge and/or skills

- Lighting terminology
- Lighting symbols
- Components
- Materials
- Planning

Higher National Unit specification: statement of standards (cont)

Unit title: Model Making: Integrated Lighting Effects

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by planning the inclusion of integrated lighting into a model, showing that they can:

- explain the lighting requirements
- identify the components required to achieve the lighting effect
- identify the materials required to achieve the lighting effect
- produce planning notes and sketches which detail the construction

Evidence should be collated as a presentation in an annotated sketchbook or digitally generated with referenced visuals.

Assessment guidelines

This Outcome could be assessed on a stand-alone basis, but it may be possible to integrate assessment with that of Outcome 4.

The presentation may be digitally generated and include referenced visuals.

An observation checklist may be used to ensure that the candidates have addressed all the knowledge requirements.

Outcome 4

Integrate a lighting circuit into a model

Knowledge and/or skills

- Equipment and materials
- Wiring and components
- Safe workshop/studio practice
- Current health and safety legislation

Evidence Requirements

Candidates will need to provide evidence to demonstrate their knowledge and/or skills by integrating a lighting circuit into a model showing that they can:

- select and prepare equipment and materials
- position and affix all wiring and components
- demonstrate safe and appropriate use of materials and equipment
- work in accordance with current health and safety legislation
- evaluate the integrated lighting scheme in terms of planning, use of materials/equipment, use of wiring and components, effectiveness of finished result

Candidates must integrate a lighting circuit into a model.

Evidence of evaluation should be provided as either an oral or written presentation.

Higher National Unit specification: statement of standards (cont)

Unit title: Model Making: Integrated Lighting Effects

Assessment guidelines

This Outcome may be a project-based assignment produced under studio/workshop conditions, plus an oral/written evaluation of approximately 500 words, covering the specified points.

The assessment of this Outcome may be integrated with Outcome 3.

Administrative Information

Unit code: F0MX 35

Unit title: Model Making: Integrated Lighting Effects

Superclass category: VF

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: Model Making: Integrated Lighting Effects

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 80 hours.

Guidance on the content and context for this Unit

This Unit has been developed to introduce the candidate to the additional skills required by the model maker when a lighting effect is integrated into a model.

The continuing demand for more sophisticated models for exhibition, special effects, TV and film props and elaborate architectural models has created the need for a broad understanding of how lighting can be incorporated into a model.

Candidates will gain an understanding of what effects may be achieved, how this will affect material selection and model construction and how wiring and components are routed and fixed.

Candidates are not required to develop complex circuitry and should not be responsible for wiring mains circuits. Candidates should be limited to working with battery powered and transformed low voltage circuits or with sealed 240v units.

Candidates should be able to discuss options and lighting possibilities and be aware of the need to sub-contract special electrical circuits. They should also recognise the factors affecting health and safety and ongoing care and maintenance/replacement of components and be familiar with the relevant aspects of current health and safety legislation.

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 Unit should be delivered to candidates once they have had the opportunity to develop knowledge of the range of tools, equipment, materials and techniques available to them within their own specialist area.

Lectures and demonstrations with exemplars and class discussion along with appropriate visits should be used to provide a stimulating teaching package for this Unit.

Candidates should work independently when planning and developing solutions for Outcome 3 and 4.

It may be possible to integrate this Unit with other Units of the HND 3D Design: Model Making Group Award.

There may be an opportunity to collaborate with a real or simulated client in this project providing that the Evidence Requirements can be maintained.

It is essential that a model and base are available to each candidate. This could be:

- an existing model constructed as part of previous course work
- an existing model from an outside client
- a model being constructed concurrently

Opportunities for developing Core Skills

All elements of the Core Skill of Problem Solving, that is, planning and organising, critical thinking, and reviewing and evaluating, would be developed and enhanced as candidates undertake the practical work for the Unit. They are required to examine elements of integrated lighting, analyse a brief, and establish clear objectives. Identifying and assessing the relevance of all factors which may affect the success of designing and wiring integrated lighting effects will require sophisticated creative thinking. Taking account of legislative constraints and health and safety considerations, and working within the limitations of resources will involve understanding and practical problem solving in commercial contexts. Candidates have to select and prepare equipment and materials, position and affix all wiring and components and demonstrate safe and appropriate use of materials and equipment.

Evaluation of the process could be discussed as the Unit is delivered in terms of planning, use of materials, equipment, wiring and components, and candidates should be encouraged to consider criteria for measuring the effectiveness of the finished result, including reflection on their personal development and any implications for future work.

Open learning

Due to the practical nature of this Unit, delivery by Open learning is not recommended. Although parts of this Unit could be delivered by distance learning, 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**.

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: Model Making: Integrated Lighting Effects

The continuing demand for more sophisticated models for exhibition, special effects, TV and film props and elaborate architectural models has created the need for a broad knowledge of how lighting can be incorporated into a model.

This Unit will introduce you to the additional skills required by the model maker when a lighting effect is integrated into a model.

You will learn to identify and evaluate integrated lighting effects.

Through practical work you will learn what effects may be achieved, how this will affect material selection and model construction and how wiring and components are routed and fixed. You will not be asked to develop complex circuitry and should not be responsible for wiring mains circuits. You will work with battery powered and transformed low voltage circuits or with sealed 240v units.

You will discuss options and lighting possibilities and be aware of the need to sub-contract special electrical circuits and will also learn of the factors affecting health and safety, and ongoing care and maintenance/replacement of components.

Finally, you will plan an integrated lighting scheme and integrate it into a model, then evaluate the effectiveness of the finished product.