Higher National Unit Specification

General information for centres

Unit title: 3D Animation Motion Studies

Unit code: DW9G 34

Unit purpose: The Unit is intended to introduce the candidate to 3D model animation, and will allow the candidate the opportunity to explore a range of simple and complex animation techniques.

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

1   Produce designs for a proposed 3 Dimensional model.
2   Construct a 3 Dimensional model.
3   Use animation tools and techniques to create motion.

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 is at the discretion of the centre. However, it maybe beneficial if the candidate had some basic knowledge of computer graphics and animation techniques and was proficient in computer use including saving files in a methodical way. This may be evidenced by the possession of relevant National Units, Higher IT or prior experience. It is recommended that the candidate has completed 2D Animation Studies before starting this Unit.

Core Skills: There are opportunities to develop the Core Skills of Information Technology, Problem Solving, and Communication 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 an instrument of assessment that would require candidates to produce a 3 Dimensional animation, which would include conceptual artwork/drawings/reference images submitted in the form of a workbook. The animation should be submitted in a format appropriate to design brief requirements.

General information for centres (cont)

It would also be possible to break this assessment down into three separate assessment events which assessed each Outcome separately. The brief may be supplied by the tutor or negotiated with the candidate based on an appropriate range of characters or concepts which would fully address the range of knowledge, skills and evidentiary requirements which would allow for integrated or separate assessment. In order to meet the Evidence Requirements, it is recommended that the candidate produce an animated sequence of no less than 90 seconds.

Higher National Unit specification: statement of standards

Unit title: 3D Animation Motion Studies

Unit code: DW9G 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

Produce designs for a proposed 3 Dimensional model

Knowledge and/or skills

♦ Research skills
♦ Development of possible solutions
♦ Developmental drawing
♦ Primary and secondary planes and surfaces
♦ Model sheets

Evidence Requirements

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

♦ produce referenced images/drawings and model sheets (front, back and side views of proposed model) relevant to their chosen/given brief
♦ produce illustrative material of a minimum of six A4 pages or equivalent (or computer equivalent on disc) annotating the different stages of research selection and possible solutions
♦ develop articulated movement of the model (front, back, side view) by a rough sketch and/or colour sampled sketches

Assessment guidelines

The assessment of this Outcome can be combined with Outcomes 2 and 3 as part of a single assessment for the Unit, details of which are given under Outcome 3 below.

If assessed independently these sketches of 3D model types can be assessed on the candidate's ability to cover the key requirements for their brief in researching, contextualising, evaluating work and their ability to produce sketched out ideas which are focused more on 3D shape and form for possible solutions of the model/character appropriate to the chosen/agreed brief. The assessment of this Outcome can be combined with Outcome 2 and this should be evidenced in the paper-based examples and orally discussed with their tutor. Work carried out in Outcomes 1 and 2 can also be used in conjunction with Outcome 3 as part of a single holistic assessment for the Unit, details of which are given under Outcome 3 below.

Higher National Unit specification: statement of standards (cont)

Unit title: 3D Animation Motion Studies

Outcome 2

Construct a 3 Dimensional model

Knowledge and/or skills

♦ Primitive geometry or box/cylinder-modelling techniques
♦ 3D animation processes
♦ Evaluation and problem-solving

Evidence Requirements

The candidate will need to provide evidence of their knowledge and/or skills by demonstrating that they can:

♦ produce a 3 Dimensional model that reflects the design solution
♦ document and annotate each amendment to the model to reflect changes to construction or materials
♦ supply three views of each model (front, back and side) during each stage of construction
♦ save rendered images in a format appropriate to the brief

Assessment guidelines

The assessment of this Outcome can be combined with Outcomes 1 and 3 as part of a holistic assessment for the Unit, details of which are given under Outcome 3 below.

If assessed independently the 3D model can be assessed on the candidate's ability to outline all key requirements for proposed shape, form, modelling techniques, devices for movement of the selected model/character with annotated notes/evaluative discussion with the tutor as its suitability to meeting the requirements of the brief.

Outcome 3

Use animation tools and techniques to create motion

Knowledge and/or skills

♦ Animation processes
♦ Key-framing
♦ In-betweening
♦ Rotational animation
♦ Scaling animation
♦ Ease-in ease-out techniques
♦ Squash and stretch

Higher National Unit specification: statement of standards (cont)

Unit title: 3D Animation Motion Studies

Evidence Requirements

The candidate will need to provide evidence of their knowledge and/or skills by demonstrating that they can:

♦   produce an animated sequence lasting no less than 90 seconds to the brief
♦   choose correct keyframe and in-betweening elements.
♦   save final rendered animation for the brief

Assessment guidelines

The assessment of this Outcome can be combined with Outcomes 1 and 2 as part of a holistic assessment for the Unit. It would be possible, if desired, to break this assessment down into three separate assessment events which assess each Outcome separately. If assessed separately examples of the techniques as outlined above need to evidenced that meet the requirements of the brief as discussed/agreed with tutor. The final animated sequence need not feature elements of narrative form or structure.

In this Outcome, the candidate should produce an animated sequence featuring a model in motion that includes the animation techniques outlined in Knowledge/Skills lasting no less than 90 seconds.

Administrative Information

Unit code: DW9G 34

Unit title: 3D Animation Motion Studies

Superclass category: JB

Date of publication: June 2006

Version: 01

Source: SQA

Higher National Unit specification: support notes

Unit title: 3D Animation Motion Studies

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 Unit is intended to introduce the Candidate to 3D model animation, and should afford the candidate the opportunity to explore a range of simple and complex animation techniques.

The brief may be supplied by the tutor or negotiated with the candidate based on an appropriate range of characters or concepts which would fully address the range of knowledge, skills and Evidence Requirements for holistic or separate assessment.

Outcome 1 requires the candidate to produce conceptual designs of the proposed 3D model. This may include the candidate carrying out research on existing structures/objects to enhance realism, or merely for inspiration. There should be research into character visual material properties, of shape and form, primary and secondary planes and surfaces angles sketched out.

The candidate must then produce reference images/drawings of the proposed model. These may be computer-generated, hand-drawn or composite images. The purpose of the conceptual design work is to introduce the candidate to the industry-standard practice of pre-production development.

The candidate should produce clear and precise model sheets, including front, side and back views of the proposed model. The model sheets can be hand drawn or computer-generated and printed out, and presented in the form of a workbook.

It is anticipated that the candidate must supply a minimum of six A4 or equivalent pages of sketches images/drawings in workbook or computer equivalent. The sketches should show articulated development of the model from front, back, side views, in the form of rough sketches/colour sampled sketches.

Outcome 2 requires the candidate to produce a 3D model. This Outcome gives the candidate the opportunity to create a simple or complex model, depending on the knowledge and skill level of the candidate. The model may be created using an appropriate software package, or an alternative medium.

The model should be capable of motion, with the model structure reflecting the initial design specifications.

♦   Each amendment to the model must be documented and annotated to reflect changes to construction, or materials indicating how the model has evolved to meet the requirements of the brief.
♦   Each candidate must supply three views of each model, front, back and side during each stage of construction. These rendered images should be saved in an appropriate format.

Higher National Unit specification: support notes (cont)

Unit title: 3D Animation Motion Studies

Outcome 3 requires the candidate use animation techniques to produce motion of the model. The purpose of this Outcome is to introduce the candidate to some of the fundamental principles of 3D model motion. The Outcome will introduce the candidate to the concept of key-framing, in-betweening and model deformation techniques. The Outcome would allow the candidate to include rotational or arced motion, scaled motion, ease-in ease-out techniques and squash-and-stretch techniques appropriate to the brief. These will challenge the candidate to incorporate techniques that are vital in the creation of 3D animated motion.

Given the motion-orientated nature of the Unit, the animated sequence need not feature elements of narrative form or structure.

In order to meet the Evidence Requirements, it is recommended that the candidate produce an animated sequence of no less than 90 seconds.

The final rendered animation should then be saved using an appropriate format.

Guidance on the delivery and assessment of this Unit

This Unit has been developed as part of a Group Award that is primarily designed to provide candidates with background knowledge on 3D animation motion and animation techniques. The Unit should be introduced at suitable stage in the Group Award to assist candidates in appreciating the breadth of animation techniques available to them in delivering 3D animation motion graphics.

It would be helpful if candidates could observe and experience a wide range of animation techniques delivered by professionals with a commercial setting.

Assessment guidance has been referenced under each Outcome.

Opportunities for developing Core Skills

Candidates are working in a context which requires the production of original computer aided design work. They should be able to work unaided in the selection of appropriate software and the modification or customising of applications to meet identified needs of purpose and context. They could, however, benefit from formative group work; opportunities to examine and evaluate examples of 3 dimensional animation would be useful and group discussion could reinforce an analytical approach to evaluating the effectiveness of the design process.

As they design and produce 3D animation to a given brief candidates need to analyse and seek solutions to a range of theoretical and practical problems, and identify specific objectives. Identifying and examining key requirements for their brief through research activities will include consideration of all aspects of production. Candidates could be supported as they identify and justify an appropriate creative approach to concept development enhancing critical thinking and general problem solving skills to an advanced level. Contextualising and developing sketched out ideas focused on 3D shape and form will involve significant creativity. Analysing and evaluating the potential and actual impact of their designs will be an aspect of underpinning knowledge and understanding, and candidates could be supported in identifying appropriate methods to measure achievement and progress.

Higher National Unit specification: support notes (cont)

Unit title: 3D Animation Motion Studies

Effectiveness in the interpretation and communication of graphic information and ideas underpins the competencies developed in the Unit. Some candidates may benefit from formative opportunities to further develop skills in the accurate analysis and application of graphic data, and the use of software packages or on-line tutorials to enhance skills may be useful.

Open learning

This Unit could be delivered by distance learning. However, it would require planning by the centre to ensure the sufficiency and authenticity of candidate evidence.

Opportunities to attend workshops and demonstrations could be incorporated to ensure appropriate mentoring of candidate progress.

It may be appropriate under the circumstances that distance-learning candidates engage in holistic assessment.

For information on normal open learning arrangements, please refer to the SQA guide "*Assessment and Quality Assurance of Open and Distance Learning*" (SQA, A1030).

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. For information on these, please refer to the SQA document *Guidance on Alternative Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs,* which is available on SQA's website: **www.sqa.org.uk**.

General information for candidates

Unit title: 3D Animation Motion Studies

The Unit is intended to introduce you to 3D model animation, and should afford you the opportunity to explore a range of simple and complex animation techniques.

The brief may be supplied by the tutor or negotiated with you. It needs to be based on characters or concepts that would fully address the knowledge, skills in the Evidence Requirements. You will be assessed holistically throughout the Unit.

Outcome 1 requires that you produce conceptual designs of the proposed 3D model. This may include you carrying out research on existing structures/objects to enhance realism, or merely for inspiration. You would benefit from visual enquiry into 3D elements of shape and form, primary and secondary planes and surfaces angles, and materials sketched out and applied to your model.

You must then produce a minimum of six A4 or equivalent reference images/drawings of the proposed model. These may be computer-generated, hand-drawn or composite images. The purpose of the conceptual design work is to introduce you to the industry-standard practice of pre-production development.

You should produce clear and precise model sheets, including front, side and back views of the proposed model. The model sheets can be hand drawn or computer-generated and printed out, and should be presented in the form of a workbook.

Outcome 2 requires that you produce a simple or complex 3D model. The model should be capable of motion, using either animation tools in an appropriate software package, or by alternative means. The model structure should reflect the initial design specifications.

♦   Each amendment to the model must be documented and annotated to reflect changes to construction, or materials indicating how the model evolves and meets the requirements of the brief.
♦   You must supply three views of each model, front, back and side during each stage of construction. These rendered images should be saved in an appropriate format.

Outcome 3 requires that you use animation techniques to produce motion of the model. The purpose of this Outcome is to introduce you to some of the fundamental principles of 3D model motion. The Outcome will introduce you to the concept of key-framing, in-betweening and model deformation techniques. The Outcome will allow you to consider rotational or arced motion, scaled motion, ease-in ease-out techniques and squash-and-stretch techniques. These will challenge you to incorporate techniques that are vital in the creation of 3D animated motion.

In order to meet the Evidence Requirements, you will produce an animated sequence of not less than 90 seconds.

The final rendered animation should then be saved in an appropriate format.