

SQA Advanced Unit Specification

General information

Unit title: Architectural CADT: Animation (SCQF level 8)

Unit code: HR7A 48

Superclass: TD

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Unit purpose

This Unit is designed to provide learners with advanced knowledge and skills to enable them to develop visualisation techniques in architectural animation. This Unit allows the learner to develop knowledge and skills which will allow them to understand the processes involved in the preparation and development of architectural animations.

Outcomes

On successful completion of the Unit the learner will be able to:

- 1 Prepare a completed architectural model for animation.
- 2 Create a sequence of animated visualisations of the completed 3D architectural model.

Credit points and level

1 SQA Advanced Credit at SCQF level 8: (8 SCQF credit points at SCQF level 8)

Recommended entry to the Unit

This Unit provides animation competences with knowledge and skills relevant to the animation of architectural projects. Learners should demonstrate prior knowledge and skills in 3-dimensional architectural modelling, and be comfortable working in 3-dimensional CAD environments prior to entry to the Unit. This may be evidenced by possession of the following SQA Advanced Units: HR6M 47 *Architectural CADT: Residential Design*, HR71 47 *Architectural CADT: Building Technologies* or any equivalent level of study. While entry to this Unit will be at the discretion of the centre, it is recommended that learners also possess

a basic knowledge and understanding of design and visualisation. This may be evidenced by the possession of the following SQA Advanced Unit HR6H 47 *CAD: Visualisation, Rendering and Presentation*.

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the support notes for this Unit specification.

There is no automatic certification of Core Skills or Core Skill components in this Unit.

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.

Equality and inclusion

This Unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website www.sqa.org.uk/assessmentarrangements.

SQA Advanced Unit specification: Statement of standards

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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

Prepare a completed architectural model for animation.

Knowledge and/or skills

- ◆ materials
- ◆ texture mapping
- ◆ lighting
- ◆ cameras
- ◆ landscape
- ◆ entourage components

Outcome 2

Create a sequence of animated visualisations of the completed 3D architectural model.

Knowledge and/or skills

- ◆ rendering output options
- ◆ current and emerging trends within architectural visualisation
- ◆ visual communication
- ◆ lighting animation
- ◆ camera animation
- ◆ video editing tools

Evidence Requirements for this Unit

Outcome 1

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

- ◆ add and control lighting in a 3D environment
- ◆ add and control materials in a 3D environment
- ◆ add and control cameras in a 3D environment
- ◆ enhance the 3D scene by adding landscaping and entourage items

Evidence will be generated through assessment undertaken in controlled conditions. Assessment will be conducted under open conditions and as such learners should be allowed to refer to relevant course material. The time allocation for the assessment is a maximum of three hours.

Outcome 2

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

- ◆ produce a series of short animated visualisations
- ◆ produce a series of animated stills
- ◆ link a sequence of animations and rendered stills together to form a presentation show reel lasting no less than 30 seconds

The assessment should be designed so as to guide the learner to produce various types of animation.

Evidence will be generated through assessment undertaken in controlled conditions. Assessment will be conducted under open conditions and as such learners should be allowed to refer to relevant course material. The time allocation for the assessment is a maximum of three hours.

SQA Advanced Unit support notes

Unit title: Architectural CADT: Animation (SCQF level 8)

Unit support notes are offered as guidance and 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 is designed to build upon the knowledge and skills learned within previously undertaken computer animation Units. The Unit will concentrate on the creative and technical capabilities of an animated sequence to best show an architectural project.

This Unit is at SCQF level 8 and has been devised as an optional Unit within the SQA Advanced Diploma in Computer Aided Architectural Design and Technology. However, this does not preclude the use of the Unit in other awards where award designers feel this to be appropriate.

In designing this Unit, a range of topics have been identified that would be expected to be covered by lecturers. There are also recommendations as to how much time should be spent on each Outcome assessment. This has been done to help lecturers decide what depth of treatment should be given to the topics attached to each of the Outcomes. While it is not mandatory for centres to use this list of topics, it is recommended that they do so since the assessment exemplar pack for this Unit is based on the knowledge and/or skills and list of topics in each of the Outcomes.

This Unit is practical in nature and should be delivered in a way that reflects the workflow process in industry. Every attempt should be made to place the subject in context by analysing existing work from a range of sources such as industry portfolios.

Guidance on approaches to delivery of this Unit

Outcome 1

Learners should have access to 3D architectural models from previous SQA Advanced Units, and should be encouraged to make use of them for the assessments in this Unit. Where learners do not have 3D architectural models, assessor(s) should provide them for exercise and assessment purposes.

Both Outcomes 1 and 2 should be assessed in a project-based manner with learners submitting a single rendered animation sequence that incorporates all the required knowledge and skills for both of the Outcomes. As such, Outcome 2 should be introduced to the learners before they begin any practical work for Outcome 1.

Outcome 2

In Outcome 2, learners should be introduced to short descriptive animations and the techniques employed to stitch them together to produce an animated presentation sequence. This sequence could include visualisations from other SQA Advanced Units such as

Architectural CADT: Advanced Digital Media, and could contain a suitable background music track.

Learners should be given demonstrations that expand their existing knowledge of 3D architectural animation. Learners should be encouraged to investigate current and emerging trends in the visualisation of architectural projects within the promotional and marketing sectors

Exercises should make use of various file formats and resolutions, permitting learners to decide upon an appropriate resolution and render format for the final presentation.

Learners should be asked to supply research/inspiration and support notes, collated within a folder for reference.

The animation should be submitted in an appropriate format.

The actual time allocated to render the output should not be included in the assessment time specified, instead a reasonable rendering time should be agreed upon between the learner and the assessor(s).

It is intended that this Unit be presented at all times using the specialist application CAD software available at the centre. Appropriate technical and support material should be available to the learner.

Guidance on the delivery and assessment of this Unit

In delivery of this Unit, learners should be provided with the opportunity to gain as much 'hands-on' experience as possible. Each learner should have access to a PC with the CAD software installed.

Guidance on approaches to assessment of this Unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

Assessment for this Unit should be delivered as one single project-based assessment covering both Outcomes. Industry practice should be reflected wherever possible, such as; learners should be encouraged to plan the visualisation of the designs thoroughly before commencing any practical activities for the assessments, this could be through the use of sketches, storyboards, a log or similar.

Where available, evidence from the workplace can be incorporated to enhance the Evidence Requirements, provided that this evidence is appropriate and authenticated as the student's own work.

Assessment guidelines

Outcome 1

The assessment for this Outcome could be combined with Outcome 2 as part of a project-based assessment instrument for this Unit lasting no more than six hours. The assessment for this Outcome could also be carried out as a separate event; this is at the discretion of the presenting centre.

It is recommended that centres develop checklists to support the assessment requirements for each of the knowledge and/or skills items.

It would be useful, at this stage, if reference were made to Outcome 2 in order that learners are aware of the purpose of selected model/s. This will assist in holistic assessment, (if applicable), across Outcomes 1 and 2.

Outcome 2

This could be achieved by the creation of a brief specifically requesting a solar study through various times of the day, a fly-by/walkthrough, component animation or a construction sequence.

The assessment for this Outcome should be combined with Outcome 1 as part of a project-based assessment instrument for this Unit lasting no more than six hours. The assessment for this Outcome could also be carried out as a separate event; this is at the discretion of the presenting centre.

It is recommended that centres develop checklists to support the assessment requirements for each of the knowledge and/or skills items.

Opportunities for 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 learner evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at www.sqa.org.uk/e-assessment.

Opportunities for developing Core and other essential skills

There are opportunities to develop the Core Skills of *Communication*, *Problem Solving*, *Information and Communication Technology* (ICT) and the Core Skill of *Numeracy* all to SCQF level 6 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

Problem Solving is used in manipulating and modifying animated solutions. *ICT* and *Numeracy* skills are used when using different file types, transferring files and using different software applications to produce high-end graphics.

History of changes

Version	Description of change	Date

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SQA acknowledges the valuable contribution that Scotland's colleges have made to the development of SQA Advanced qualifications.

FURTHER INFORMATION: Call SQA's Customer Contact Centre on 44 (0) 141 500 5030 or 0345 279 1000. Alternatively, complete our [Centre Feedback Form](#).

General information for learners

Unit title: Architectural CADT: Animation (SCQF level 8)

This section will help you decide whether this is the Unit for you by explaining what the Unit is about, what you should know or be able to do before you start, what you will need to do during the Unit and opportunities for further learning and employment.

This Unit has been designed to help you develop underpinning knowledge and skills that will enable you to animate and visualise conceptual architectural projects. Using a variety of professional techniques, you will produce an animated sequence showcasing a conceptual Architectural project.

Throughout the Unit, emphasis may be placed upon the realisation of conceptual design projects; however the animation may also include technical content such as a construction method.

The Unit will be taught with a series of lectures, practical exercises and design tutorials, which will logically, and sequentially progress knowledge and skills from the simple to the complex. At all times, a strong design base will underpin your learning and assessment.

This Unit is designed to provide learners with advanced knowledge and skills to enable them to develop visualisation techniques in architectural animation. This Unit allows the learner to develop knowledge and skills which will allow them to understand the processes involved in the preparation and development of architectural animations.

There are two formal assessment events, which may be integrated. The greater element of assessment time and effort will be on the practical production of visualisation solutions appropriate to a given brief. The supporting evidence for all the practical assessment events are likely to be integrated into a single presentation, although other approaches are possible.

Assessments will be conducted under open-book conditions in which you will be allowed access to notes, textbooks and other material during the assessment. You will sit these assessments at prescribed points during the Unit at the discretion of the lecturer.

As you will be working consistently with numerical and graphical data within an IT-based platform, opportunities exist within this Unit for you to also develop Core Skills in *Communication, Information and Communication Technology (ICT), Problem Solving* and *Numeracy* to SCQF level 6.