Higher National Unit specification

General information for centres

Unit title: Audio Visual: Digital Content Delivery and Formats

Unit code: F1TJ 34

Unit purpose: This Unit is designed to provide candidates with the Knowledge and/or Skills necessary to encode/transcode and deliver digital content in a range of formats.

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

1 Evaluate and select digital content delivery systems.
2 Prepare and encode digital content using optimisation techniques.
3 Review and evaluate the encoding process.

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 would be highly advantageous for candidates to have some prior experience in digital editing or image manipulation and knowledge of digital file formats and organisation, or to have undertaken one of the following Units:

DW9P 34	*Editing for New Media Art & Design*
DM10 34	*Editing to a Director's Brief*
DM0X 34	*Editing: An Introduction*
DM0Y 34	*Editing: Own Programme*
DE2W 34	*Graphics for Creative Multimedia Design*
DF64 34	*Multimedia Computing: Animation 1*
DF65 34	*Multimedia Computing: Animation 2*
DF66 34	*Multimedia Computing: Audio and Video 1*
DF67 34	*Multimedia Computing: Audio and Video 2*
DF69 34	*Multimedia Computing: Screen Based Graphics*
DM36 34	*Multimedia Computing: Video with Audio*

Core Skills: There are opportunities to develop the Core Skills of Information Technology, and the components Communication and Problem Solving at SCQF level 5 in this Unit, although there is no automatic certification of Core Skills or Core Skills components.

General information for centres (cont)

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: All 3 Outcomes may be assessed using a holistic assessment in the form of a project that allows candidates to assemble a portfolio of evidence.

However each Outcome may be assessed separately as follows:

Outcome 1 could be assessed by a single instrument in the form of a report which demonstrates a candidate's knowledge of digital platforms, media formats, and encoding processes and which evidences analysis and selection of platforms and formats to a given brief. It would be possible to break this assessment down into two separate reports which assess the evaluation of formats in the first, and the selection of formats in the second.

For Outcome 2, candidates could be assessed on two separate digital files which are encoded or transcoded for two candidate-defined digital delivery platforms, and which have been placed on delivery and or storage media.

Outcome 3 could be assessed by a single instrument in the form of a report which demonstrates a candidate's critical analysis of encoded digital files to a given brief.

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

Evaluate and select digital content delivery systems

Knowledge and/or Skills

♦   Digital Delivery Platforms
♦   Digital Encoding Formats
♦   Digital Codecs
♦   Digital Delivery Media
♦   Digital Bandwidth
♦   File size
♦   Image Quality
♦   Digital Resolution
♦   Platform Compatibility

Evidence Requirements

The candidate is required to evaluate and compare a minimum of four different digital encoding formats with specific reference to digital delivery platforms, digital codecs, digital bandwidth, file size, image quality, digital resolution, and platform compatibility.

Within the evaluation the candidate must then select and justify two of these digital encoding formats in response to a given brief with specific reference to digital bandwidth, file size, image quality, digital resolution, and platform compatibility.

Finally the report must define and analyse the audio visual content resources which are required to implement delivery for the proposed platforms, with specific reference to digital encoding formats, digital encoding codecs and digital delivery media.

Assessment Guidelines

The assessment of this Outcome could be combined with the other Outcomes by using a project that covers all three.

Higher National Unit specification: statement of standards (cont)

Unit title: Audio Visual: Digital Content Delivery and Formats

This Outcome could be assessed as a separate assessment event using a single instrument in the form of a report which demonstrates a candidate's knowledge of digital platforms, media formats, and encoding processes and which evidences analysis and selection of platforms and formats to a given brief. It would be possible to break this assessment down into two separate reports which assess the evaluation of formats in the first, and the selection of formats in the second.

Material utilised by the candidate could include a range of image and audio based material including bitmap and vector graphics, video and audio files. The report(s) could take the form of audio visual presentation.

Outcome 2

Prepare and encode digital content using optimisation techniques

Knowledge and/or Skills

♦   Digital file organisation and collation
♦   Digital encoding formats
♦   Digital encoding codecs
♦   Digital encoding methods
♦   Digital resolution
♦   Digital File Transfer
♦   Digital File Archiving
♦   Digital Storage Media

Evidence Requirements

The candidate is required to prepare, collate and organise digital audio visual source files. The candidate is then required to optimise and encode the source material using digital encoding codecs for two different types of digital delivery platform.

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

♦   collate and organise digital audio visual material
♦   apply digital encoding methods to optimise digital file size and quality using digital encoding codecs for two different digital delivery platforms
♦   transfer and archive encoded digital content to appropriate digital storage media and checked to ensure that all files are functional

Candidates should adhere to current copyright legislation.

Assessment Guidelines

It would be beneficial if the digital content was prepared using formats and resolutions which are appropriate for delivery within the context of the given brief. Audio visual encoding or transcoding processes may be either hardware or software based.

Higher National Unit specification: statement of standards (cont)

Unit title: Audio Visual: Digital Content Delivery and Formats

The assessment of this Outcome could be combined with the other Outcomes by using a project that covers all three Outcomes. This Outcome could be assessed as a separate assessment event using separate digital files which are encoded or transcoded for two candidate-defined digital delivery platforms, and which have been placed on delivery and or storage media.

Collated and organised digital audio visual material could be evidenced by assessor checklist, archived source files, or by screen capture images of the source material folder.

Outcome 3

Review and evaluate the encoding process

Knowledge and/or Skills

♦ Digital artefacts
♦ File optimisation
♦ Playback quality
♦ Digital bandwidth
♦ File size
♦ Image quality
♦ Audio quality
♦ Digital resolution

Evidence Requirements

The candidate is required produce an evaluation of the digital encoding formats and the encoding parameters selected. The report should reference the following areas:

♦ Digital artefacts
♦ File optimisation settings
♦ Playback quality
♦ digital bandwidth
♦ File size
♦ Image quality
♦ Audio quality
♦ Digital resolution

Assessment Guidelines

This Outcome could be combined with the other Outcomes by using a project that covers all three Outcomes. However, it may be assessed by a single instrument in the form of a report which demonstrates a candidate's critical analysis of encoded digital files to a given brief.

Administrative Information

Unit code: F1TJ 34

Unit title: Audio Visual: Digital Content Delivery and Formats

Superclass category: KG

Original date of publication: July 2007

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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: Audio Visual Digital Content Delivery and Formats

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 is primarily concerned with equipping candidates with a grounding in the selection, preparation, and conversion of digital media files for incorporation in to a broad range of delivery media and mechanisms, including but not limited to streaming media, lossless archive, versatile disc formats, personal playback devices, incorporation into multimedia presentation, and incorporation into advanced edit and compositing scenarios. This Unit has been designed in the knowledge that such formats and playback platforms are subject to continual change and revision, and as such focuses on the skills and knowledge required to prepare and output material rather than on any specific delivery medium or mechanism. The main activities in the Unit are aimed at evaluating output solutions and highlight the skills and knowledge required to prepare materials for digital delivery in different formats for viewing in different digital contexts. The lecturer could act as the client for the finished design, or opportunities could be taken to work with external clients. In both cases it would be beneficial for the candidate respond to feedback accordingly. The Unit could be delivered as part of a cohesive course, although it can be delivered as a stand alone Unit.

Digital Encoding Formats are defined for the purposes of this Unit as being Video Formats and codecs, such as AVI, MPEG formats as well as Streaming media codecs, Digital Television, 3G.

Digital Delivery Platforms are defined for the purposes of this Unit as being content provision methods and mechanisms including handheld devices (phones, ipods, portable video devices), DVD/ HD-DVD players, VCD Playback Devices, presentation software and presentation devices, internet browsers, digital terrestrial broadcast receivers and Digital Satellite broadcast receivers.

Digital Delivery Media are defined for the purposes of this Unit as being the containers where digital files are stored during delivery, of which current examples include CDs, DVDs, HD-DVD and blue-ray discs, hard drives, including streaming LAN, WAN servers, as well as flash drive and flash memory devices.

Centres may adapt the delivery of the Unit to fit the specific requirements of their course structures. Candidates may complete the Unit using a range of video editing and conversion software or hardware.

Guidance on the delivery and assessment of this Unit

This Unit is designed to be practical in nature and, as such, could be run in conjunction with one or more visual production Units. This Unit could be used to enable candidates to produce audio visual material for inclusion in other projects for other Units. It is strongly recommended that the Unit be assessed using based on carrying out a project to a given brief. The Outcomes may be assessed in isolation providing the specific Evidence Requirements for each Outcome are evidenced.

Higher National Unit specification: support notes (cont)

Unit title: Audio Visual Digital Content Delivery and Formats

The aim of the Unit content is to enable candidates to produce correctly selected formats and compression optimisation to a specified brief. Candidates will be expected to produce material that conforms to industry standard requirements with regard to the language, common practices, legal and health and safety considerations of the medium. The emphasis throughout should be on the formats and processes required to meet the needs of a variety of scenarios where digital video and audio files need to be provided to a client for different end uses. This brief may be generated from within the requirements of an audio visual or multi media project.

This Unit can be integrated with other Units where the candidate will have the opportunity to work with material supplied by the delivery lecturer or for an external Client. Accurate records should be made of the assessment instruments used showing how evidence is generated for each Outcome and giving marking schemes and/or checklists, etc. Records of candidates' achievements should be kept. These records will be available for external verification.

Opportunities for developing Core Skills

The delivery and assessment of this Unit may offer the opportunity to develop Core Skills in 'Written Communication' at SCQF level 6. In particular this development would be appropriate if a written report was used as the Instrument of Assessment for Outcomes 1 and 3. The general skill for this component is 'Produce well-structured written communication.'

The delivery and assessment of this Unit may offer the opportunity to develop the Core Skill of Information Technology at SCQF level 6. The technical processes of collating, and organising source material, and the additional in-depth processes involved in the encoding and archiving digital files in Outcome 2 are appropriate for the development of this Core Skill. The general skill for this component is 'Using an IT system effectively and responsibly to process a range of information'

These skills can be developed through formative activities, such as experimental encodings, or through preparing source material, without being formally assessed for certification of Core Skill.

The delivery and assessment of this Unit may offer the opportunity to develop the component 'Critical Thinking' of the Core Skill Problem Solving at SCQF level 6 because of the requirement to evaluate and select appropriate encoding formats and codecs in the teaching and assessment requirements of Outcome 1. The general skill for this component is to 'Identify and assess the relevance of the factors involved in a situation/issue and to develop and justify an approach to deal with this situation/issue'.

In both formative and summative assessment the candidate should be encouraged to link appropriate encoding formats to the selected digital delivery platform.

Specific skills which could be developed are:

♦   identifying the strengths and weaknesses of all stages of the problem solving strategy — ie analysing the situation, planning and organising the task and the Outcome of the activity
♦   referring to evidence on aspects of the strategy such as whether all factors were
♦   identified; effectiveness of the strategy and planning; suitability of resources; or
♦   appropriateness of the Outcome

Higher National Unit specification: support notes (cont)

Unit title: Audio Visual Digital Content Delivery and Formats

♦ drawing a conclusion — this should refer to and consider the evidence. The conclusion might involve suggesting an alternative or modification to the strategy or plan, making a prediction or a generalisation

The delivery and assessment of this Unit may also contribute towards the component 'Planning and Organising' of the Core Skill Problem Solving at SCQF level 5 because of the requirement to devise and implement an encoding strategy in the assessment for Outcomes 1 and 2. The general skill for this component is 'Plan, organise and complete a task.'

Specific skills which could be developed are:

♦ developing a plan
♦ identifying and obtain resources to carry out the plan
♦ carrying out the task

Open learning

This Unit may be suited to delivery by distance learning, providing the candidate has regular access to the specialist equipment required.

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: Audio Visual Digital Content Delivery and Formats

The Unit is designed to provide you with the Knowledge and/or Skills necessary evaluate and encode audio and video material for a range of purposes and contexts, and to ensure quality controls are met.

You will learn about and be responsible for:

♦ comparing a range of Digital delivery Platforms and formats
♦ planning the transcoding / encoding of video and audio material for a minimum of two delivery platforms
♦ organising and collating the source files in preparation for encoding / transcoding
♦ transcoding or encoding the acquired material using appropriate video codecs and formats for a minimum of two delivery platforms
♦ archiving the encoded media for storage or delivery
♦ evaluating the encoded media files

You will be assessed on:

♦ the evaluation and correct selection of media encoding formats
♦ the standard of the final encoded files and quality evaluation
♦ the report produced

You may be assessed holistically by project. However, 3 assessments may be used which will involve you in evaluating and creating encoded material to the standards given above. You will need to produce a portfolio of evidence which includes:

♦ a report in which you will research and compare at least four different digital delivery platforms and formats. From these, you will select two platforms to create digital media for, and evaluate the processes required to undertake the transcoding
♦ the encoded files archived on storage media
♦ an evaluation of the encoding parameters and the resulting files

On completion of the Unit you should be able to:

♦ evaluate and plan the digital encoding of audio and video material
♦ organise and prepare materials for transcoding/encoding
♦ encode/Transcode audio visual material according to plan
♦ archive encoded materials on appropriate mediums for delivery
♦ evaluate encoded material to specific criteria