Higher National Unit specification: general information

Unit title: Digital Audio Workstations 1

Unit code: H1M4 34

Superclass:	XL
Publication date:	June 2012
Source:	Scottish Qualifications Authority
Version:	01

Unit purpose

This Unit is designed to give candidates an understanding of digital audio workstations and the ability to record and manipulate audio and MIDI signals for sound production. It is designed to give candidates the underpinning knowledge required to use the main functions of a digital audio workstation and to take an audio engineering project to a conclusion by creating a production master. The Unit is primarily intended to give candidates the essential underpinning knowledge and skills they may require as a workstation programmer or sound production engineer.

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

1 Configure a digital audio workstation.
2 Perform audio and MIDI integration.
3 Perform a mixdown of a multitrack session with audio processing.
4 Produce an edited production master.

Recommended prior knowledge and skills

Entry is at the discretion of the centre, however, candidates should ideally have a basic knowledge of sequencing software and its use as well as an understanding of the role of computers for audio and music production.

Credit points and level

2 Higher National Unit credits at SCQF level 7: (16 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.

General information (cont)

Core Skills

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

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

Context for delivery

This is a mandatory Unit in the framework for HNC/D Sound Production and an optional Unit in the HNC/D Music framework. It is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

The assessment exemplar for this Unit provides assessment and marking guidelines that exemplify the national standard for achievement. It is a valid, reliable and practicable Instrument of Assessment. Centres wishing to develop their own assessments should refer to the assessment exemplar to ensure a comparable standard. Assessment exemplars are available on SQA's secure website.

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

Configure a digital audio workstation.

Knowledge and/or Skills

♦ External connections for MIDI data
♦ External connections for audio
♦ MIDI parameter configuration
♦ Audio parameter configuration

Evidence Requirements

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

♦ set up external connections to facilitate the recording and use of MIDI data
♦ set up external connections to facilitate the recording and playback of audio signals
♦ configure relevant MIDI parameters to facilitate the use of recorded MIDI data
♦ configure relevant audio parameters, including gain, channel level, EQ, routing and monitoring to facilitate the recording and playback of audio

Each candidate will need evidence to show that they can, in relation to project requirements, demonstrate the ability to configure a digital audio workstation. Evidence for this Outcome should take the form of an observation checklist. Details of integrating this Outcome with Outcome 2 can be found under the assessment guidelines for Outcome 1.

Higher National Unit specification: statement of standards (cont)

Unit title: Digital Audio Workstations 1

Outcome 2

Perform audio and MIDI integration.

Knowledge and/or Skills

♦ MIDI data recording
♦ Audio signal recording
♦ MIDI sequencing
♦ Audio sequencing
♦ Project file handling

Evidence Requirements

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

♦ perform MIDI sequence recording correctly
♦ perform audio signal recording correctly
♦ perform MIDI sequence playback correctly
♦ perform audio sequence playback correctly
♦ perform data file handling by showing the ability to name, locate, use and store project data files correctly and efficiently

Each candidate will need evidence to show that they can, in relation to project requirements, demonstrate the ability to perform audio and MIDI integration to facilitate the integration of MIDI and audio. Evidence for this Outcome should take the form of an observation checklist, together with a copy of the candidate's project. Details of integrating this Outcome with Outcome 1 can be found under the assessment guidelines for Outcome 2.

Outcome 3

Perform a mixdown of a multitrack session with audio processing.

Knowledge and/or Skills

♦ Dynamic processing
♦ Time-domain processing
♦ Audio channel level balancing
♦ Audio channel panning placement
♦ Prepare a session master
♦ Project file handling

Higher National Unit specification: statement of standards (cont)

Unit title: Digital Audio Workstations 1

Evidence Requirements

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

♦ perform dynamic processing correctly
♦ perform time-domain processing correctly
♦ perform channel level balancing correctly
♦ perform channel panning correctly
♦ create a session master which is undistorted and acceptable in terms of level and clarity
♦ perform data file handling by showing the ability to name, locate, use and store project data files correctly and efficiently

Each candidate will need evidence to show that they can, in relation to project requirements, demonstrate the ability to perform audio processing and create a session master. Evidence for this Outcome should take the form of an observation checklist of the processing and data handling, together with a copy of the candidate's session master and project.

Outcome 4

Produce an edited production master.

Knowledge and/or Skills

♦ Project file handling
♦ Audio waveform editing
♦ Audio dynamics control
♦ Final format production

Evidence Requirements

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

♦ perform data file handling by showing the ability to name, locate, use and store project data files correctly and efficiently
♦ perform audio waveform editing by showing the ability to use relevant edit points with glitch-free results
♦ perform audio dynamics control by showing the ability to use its application for relevant alterations to the audio frequency balance and dynamic range with glitch-free results
♦ perform final format production by showing the ability to transfer a completed master version to an industry standard format

Each candidate will need evidence to show that they can, in relation to project requirements, demonstrate the ability to perform audio mastering and create an edited production master. Evidence for this Outcome should take the form of an observation checklist of the processing and editing, together with the submission of the candidate's edited production master.

Higher National Unit specification: support notes

Unit title: Digital Audio Workstations 1

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 is primarily intended to give the candidates an understanding of digital audio workstations and their operation and handling. It is designed to provide the essential underpinning knowledge and skills candidates may require as a workstation programmer or sound production engineer. It is also applicable to those who have experience of operating and handling a digital audio workstation, by allowing them to improve their skills and reflect on how they handle projects and operate a workstation.

Candidates are likely to work predominantly with supplied MIDI and/or audio project material and use this to operate a workstation and manipulate a sound production project. Candidates will use this material to demonstrate their ability to take an integrated MIDI and audio project to a conclusion.

Outcome 1 — candidates look at the configuration of the software and hardware parameters that are required to be set up for an integrated audio and MIDI project. Candidates will also set up a project for a workstation including MIDI and audio set-ups for software applications, system software and hardware. For information on audio configuration the candidates could be shown project file format, latency control, input gain control and channel allocation.

Outcome 2 — requires the candidates to perform MIDI and audio recording. Demonstrating that the input to output monitoring signal chain is correct for aural recognition and recording requirements could show this. The candidate should then record the signals to disk. Candidates should be made aware of the requirements of audio and MIDI sequencing. Data file handling relating to naming, location, utilisation and storing project files correctly and efficiently should be covered.

Outcome 3 — considers the application and function of audio processing within a digital audio workstation. It is beyond the scope of the Unit for the candidate to be taught and to understand the complexities of the art and science of mixing and mastering. The candidate is required to show that they can apply the basic processing and mixing functions available in a workstation environment. Pan, level, equalisation, effects and master output level controls should be covered. Data file handling relating to location, utilisation and storing project files correctly and efficiently should be covered.

Outcome 4 — should cover basic audio waveform editing relating to edit points where topping and tailing and fades may be performed. Audio dynamics control could be shown as the basic application of overall equalisation and compression to enhance the final production master version, with consideration to relevant alterations of the audio frequency content and dynamic range. Showing the transfer of a completed production master to an industry standard distribution format could cover final format production. Data file handling relating to naming, location, utilisation and storage of project files correctly and efficiently should be covered.

Higher National Unit specification: support notes (cont)

Unit title: Digital Audio Workstations 1

Guidance on the delivery of this Unit

This is a mandatory Unit in the framework for HNC/D Sound Production and an optional Unit in the HNC/D Music framework and is primarily designed to provide candidates with technical professional knowledge and skills related to a specific occupational area.

Guidance on the assessment of this Unit

The assessment for Outcomes 1 and 2 should be integrated where possible and delivered at the start of the Unit, providing sufficient skills to undertake subsequent Outcomes. Outcomes 3 and 4 should be undertaken sequentially as separate events towards the end of the Unit. The exact timing for delivery is at the discretion of the centre.

Assessment Guidelines

Outcome 1

It is possible to assess the Outcome knowledge and/or skills separately. This could be conducted at a single assessment event carried out in controlled conditions using an observation checklist to record achievement. However, it is recommended that this is integrated with Outcome 2 to produce a completed audio and MIDI track.

Should there be ambiguity regarding a candidate's response, oral questioning may be used to eliminate any doubt as to the candidate's understanding. The lecturer should note questions and responses.

Outcome 2

It is possible to assess the Outcome knowledge and/or skills separately. This could be conducted at a single assessment event carried out in controlled conditions using an observation checklist to record achievement. However, it is recommended that this is integrated with Outcome 1 to produce a completed audio and MIDI track.

Should there be ambiguity regarding a candidate's response, oral questioning may be used to eliminate any doubt as to the candidate's understanding. The lecturer should note questions and responses.

Outcome 3

It is recommended that the knowledge and/or skills for this Outcome is assessed separately. This should be conducted at a single assessment event lasting a reasonable time period, and carried out in controlled conditions using an observation checklist to record achievement, together with submission of the project files and session master produced by the candidate.

Should there be ambiguity regarding a candidate's response, oral questioning may be used to eliminate any doubt as to the candidate's understanding. The lecturer should note questions and responses.

Higher National Unit specification: support notes (cont)

Unit title: Digital Audio Workstations 1

Outcome 4

It is recommended that the knowledge and/or skills for this Outcome is assessed separately. This should be conducted at a single assessment event lasting a reasonable time period, and carried out in controlled conditions using an observation checklist to record achievement, together with submission of the edited production master produced by the candidate.

Should there be ambiguity regarding a candidate's response, oral questioning may be used to eliminate any doubt as to the candidate's understanding. The lecturer should note questions and responses.

Online and Distance Learning

This Unit could be delivered by open or distance learning. However, candidates would need to have access to appropriate equipment/technology and delivering centres would have to make arrangements to ensure authenticity of candidates' evidence.

Opportunities for developing Core Skills

Each Outcome of this Unit provides opportunities to develop aspects of the Core Skill of *Information and Communication Technology*.

Disabled candidates and/or those with additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering whether any reasonable adjustments may be required. Further advice can be found on our website **www.sqa.org.uk/assessmentarrangements**.

History of changes to Unit

Version	Description of change	Date

General information for candidates

Unit title: Digital Audio Workstations 1

This Unit is designed to give you the ability to record and manipulate audio and MIDI for sound production. It is designed to give you the underpinning knowledge required to use the main functions of a digital audio workstation and to take an audio engineering project to a conclusion by creating a final production master.

You will learn how to configure a digital audio workstation for recording and processing and how to connect external equipment to and from the workstation using MIDI and audio cabling and connections.

The Unit will give you the opportunity to integrate audio and MIDI information within a software environment and process that data accordingly.