



Higher National Unit Specification

General information

Unit title: Sound Production: Performance Based Digital Audio Workstations (SCQF level 8)

Unit code: J0LP 35

Superclass: XL

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Unit purpose

This unit is designed to provide learners with an understanding of the skills required to perform a live set utilising software and associated controller hardware. Learners will research current techniques and approaches used by leading artists and producers and employ a range of these techniques and approaches to construct a live set to a given brief. This unit is intended for learners who possess a broad knowledge of digital audio workstation operations and wish to apply the skills and knowledge within performance conditions.

Outcomes

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

- 1 Describe approaches used to develop a controller based live set in response to a brief.
- 2 Identify and prepare audio assets for use in a controller based live set.
- 3 Assign audio assets and effects parameters to a hardware controller for use in a live set.
- 4 Perform a controller based live set utilising synchronised audio assets and effects parameters.

Credit points and level

2 Higher National Unit credits at SCQF level 8: (16 SCQF credit points at SCQF level 8)

Higher National Unit Specification: General information (cont)

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Recommended entry to the unit

Access to this unit is at the discretion of the centre. However, it is recommended that learners undertaking this unit have prior knowledge of digital audio workstation operation. In addition, learners would benefit from basic musical knowledge. This could be evidenced through HN units such as: *Sound Production: Digital Audio Workstations* (SCQF level 7), *Sound Production: Synthesis and Sampling* (SCQF level 7), *Sound Production: Creative Music Re-mixing* (SCQF level 7) and *Sound Production: Understanding Music Theory* (SCQF level 7).

Core Skills

Achievement of this Unit gives automatic certification of the following Core Skills component:

Complete Core Skill	None
Core Skill component	Critical Thinking at SCQF level 6

There are also opportunities to develop aspects of Core Skills which are highlighted in the Support Notes of this Unit specification.

Context for delivery

This is an optional unit in the framework for HN Sound Production. It is recommended that it should be taught and assessed within the subject area of the group award to which it contributes.

The Assessment Support Pack (ASP) for this unit provides assessment and marking guidelines that exemplify the national standard for achievement. It is a valid, reliable and practicable assessment. Centres wishing to develop their own assessments should refer to the ASP to ensure a comparable standard. A list of existing ASPs is available to download from SQA's website (<http://www.sqa.org.uk/sqa/46233.2769.html>).

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.

Higher National 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

Describe approaches used to develop a controller based live set in response to a brief.

Knowledge and/or skills

- ◆ Influential artists and producers and their impact
- ◆ Utilisation of technology
- ◆ Choice of software and hardware
- ◆ Key techniques
- ◆ Approaches to set structure

Outcome 2

Identify and prepare audio assets for use in a controller based live set.

Knowledge and/or skills

- ◆ Using markers
- ◆ Audio quantisation
- ◆ Timing correction
- ◆ Musical key matching
- ◆ Audio waveform editing
- ◆ Loop creation
- ◆ One shot creation
- ◆ Critical listening
- ◆ File naming and handling

Outcome 3

Assign audio assets and effects parameters to a hardware controller for use in a live set.

Knowledge and/or skills

- ◆ Asset assignment
- ◆ Effects parameters
- ◆ Virtual instruments
- ◆ Hardware configuration
- ◆ Software configuration
- ◆ Controller assignation
- ◆ MIDI CC data
- ◆ File naming and handling

Higher National Unit Specification: Statement of standards (cont)

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Outcome 4

Perform a controller based live set utilising synchronised audio assets and effects parameters.

Knowledge and/or skills

- ◆ Asset synchronisation
- ◆ Structure and arrangement
- ◆ Arrangement transitions
- ◆ Real-time controller operation
- ◆ Virtual instrument control
- ◆ Timing and key matching
- ◆ Gain structure

Evidence requirements for this unit

Outcome 1

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

- ◆ Describe the impact of at least two influential artists and producers in producing digital audio workstation and controller based live sets.
- ◆ Describe how they utilise technology including choice of hardware and software and highlight key techniques employed in their live set.
- ◆ Provide an example of how a musical genre may influence the approaches and techniques used.
- ◆ Provide an example of how an intended audience or venue may influence the structure of a performer's live set.
- ◆ Describe an approach that may be developed for a live set in response to the brief.

Learners will produce written and/or oral evidence under open-book conditions. Oral presentations should be recorded on a high-quality format.

Higher National Unit Specification: Statement of standards (cont)

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Outcome 2

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

- ◆ Perform quantisation of audio with the use of markers on a minimum of three pre-recorded songs to match a session tempo.
- ◆ Perform audio track editing to match all audio to the same musical key or appropriately related musical key.
- ◆ Perform audio waveform editing to create a minimum of four seamless loops to match a session tempo.
- ◆ Perform audio waveform editing to create a minimum of four one-shot audio events.
- ◆ Utilise critical listening and the above editing techniques correctly in the context of the brief and source material to achieve appropriate results.
- ◆ Bounce all edited files to create audio assets in preparation for a live set.
- ◆ Utilise appropriate file naming and handling conventions.

Evidence for this outcome will be an assessor observation checklist, together with submission of the learner's session and audio files. Evidence will be produced under open-book conditions.

Outcome 3

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

- ◆ Configure software for communication with hardware controller.
- ◆ Import edited audio assets.
- ◆ Assign all audio assets to appropriate tracks.
- ◆ Create a minimum of two effects tracks.
- ◆ Create at least one virtual instrument track.
- ◆ Assign controller to volume and mute parameters.
- ◆ Assign controller to trigger a minimum of four audio assets.
- ◆ Assign controller to a virtual instrument.
- ◆ Assign MIDI data controllers to a minimum of three parameters.
- ◆ Utilise appropriate file naming and handling conventions.
- ◆ Apply the above requirements correctly in the context of the brief and source material to achieve appropriate results.

Evidence for this outcome will be an assessor observation checklist, together with submission of the learner's session and audio files. Evidence will be produced under open-book conditions.

Outcome 4

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

- ◆ Synchronise audio assets in preparation for a live set.
- ◆ Create an arrangement with a minimum ten-minute duration in preparation for a live set.

Higher National Unit Specification: Statement of standards (cont)

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During the live set:

- ◆ Ensure a minimum of four simultaneous audio elements are performed in synchronisation.
- ◆ Include a minimum of two real-time transitions.
- ◆ Perform appropriate real-time control of volume and mute parameters.
- ◆ Perform appropriate real-time control of effects tracks.
- ◆ Trigger a minimum of three audio assets appropriately.
- ◆ Perform real-time MIDI controller data to assigned parameters.
- ◆ Perform real-time control of a virtual instrument.
- ◆ Ensure correct timing and musical key matching is maintained throughout the live set.
- ◆ Ensure appropriate gain structure is maintained throughout the live set.
- ◆ Apply the above requirements correctly in the context of the brief and source material to achieve appropriate results.

Evidence for this outcome will be an assessor observation checklist together with a video recording of the performance. Evidence will be produced under open-book conditions.



Higher National Unit Support Notes

Unit title: Sound Production: Performance Based Digital Audio Workstations (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 80 hours.

Guidance on the content and context for this unit

The purpose of this unit is to provide learners with the opportunity to expand their understanding of digital audio workstations within the context of live performance conditions. It will allow learners to research approaches taken by current artists, DJs and producers, and apply similar approaches to their own live set. The learner has not only the opportunity to perform research, but to also develop skills in audio and MIDI editing and processing before applying these within a live performance.

In Outcome 1 — learners will perform research to gain an understanding of how digital audio workstations in conjunction with hardware controllers are utilised in live sets. Learners will examine specific genres and applications, and any key performance or production techniques employed by performers within. Their findings will provide further insight into the use of both software and hardware and the technical skills needed to develop a live set. Learners will also establish how a performer will structure their live set dependant on the type of audience or venue. Through their findings, learners will be able to initiate an approach to the development of their own live set.

In Outcome 2 — based on their brief, learners will begin to develop an approach to their live set with a focus on formulating the practical aspects of their performance. Learners will obtain the knowledge and skills to effectively perform complex audio editing techniques. They will acquire and prepare audio assets for inclusion in their live set. The edited assets will be synchronised in terms of timing and have the same or appropriate musical related key. Using an appropriate tempo and time signature, learners perform quantisation of audio with the use of markers as opposed to basic time-stretch functions. This will provide the opportunity to use pre-recorded songs not quantised to a grid and edit them to a specific tempo and grid.

Learners will produce additional audio assets that will form part of their live set. These may include edited looped percussion, basslines, a capellas, synthesizer hooks, and one shot creation of sound effects and synth stabs. Any of these additional assets that are formed around a musical key, must be musically deployed appropriately to other simultaneous audio assets. The learner will also cover the importance of always utilising correct appropriate file naming and handling conventions.

Higher National Unit Support Notes (cont)

Unit title: Sound Production: Performance Based Digital Audio Workstations (SCQF level 8)

In Outcome 3 — learners will take the next step to preparing for their live set by configuring their choice of DAW software for communication with a hardware controller. They will then assign audio assets to appropriate tracks within the DAW, and depending on their approach to the live set, will determine which assets will run in software or be triggered by the controller.

Learners will create effects tracks to allow for appropriate bussed effects chains to be utilised. This may include: delay, beat slicing/repeat, reverb feedback control, EQ sweeps, plugin triggering or 'keying'. At least one virtual instrument will also be integrated into the live set to be triggered loop-based sample or played real-time from the controller. Learners will need to carefully consider their approaches to the live set when assigning their controller to the required parameters. Consideration should be made to key techniques to be utilised in the live set that may need specific MIDI CC control.

In Outcome 4 — the learner will plan and structure their live set in readiness for performance. They will synchronise all audio assets and create an arrangement of at least ten minutes in duration ensuring at least four simultaneous audio elements are performed in synchronisation. An example could be two pre-recorded songs, one triggered loop and a virtual instrument being played. The real-time transitions that the learner will incorporate could be performed using volume, mute or triggering of audio assets.

To maintain correct gain structure, the learner could make appropriate use of dynamic effects throughout the live set.

Through practise the learner will develop the correct approach for their live set, ensuring timing and key matching is maintained, and employ the appropriate real-time use of hardware controller and associated MIDI controller data to the required parameters.

This unit offers the potential for aspects of the following National Occupational Standards to be demonstrated:

CCSMT10	Develop key MIDI and DAW audio techniques
CCSMT12	Create a sample and audio file library — archive digital content
CCSMT16	Operate analogue and digital equalisation for music and audio industries
CCSMT18	Operate analogue and digital dynamics and effects for music and audio industries
CCSMT39	Carry out software sound and audio manipulation
CCSMT42	Use audio mix automation and control surfaces

Guidance on approaches to delivery of this unit

Although the emphasis of the unit is performance, suitable focus should be applied to critical listening skills, whereby corrective and creative processes are utilised within the DAW.

In Outcome 1 — learners would benefit from listening to and watching existing online live set performances followed by discussion. Key production skills and techniques should be demonstrated and explained as well as discussion on selection, production and deployment of contextualised audio assets. Where possible, learners would further benefit from talks and demonstrations by experienced artists or industry personnel.

Higher National Unit Support Notes (cont)

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In Outcome 2 — learners would benefit from working on a typical digital audio workstation session with a focus on quantisation with the use of markers. The learner could work with live pre-recorded material which will allow them to use markers to align the audio to a grid and tempo. The same approach to loop creation could be applied.

Learners can perform further waveform editing on one shot samples to be triggered from the controller. These could be percussion sounds, brass hits, synth stabs sound effects or any other sound element that the learner feels will enhance their live set. The sounds could be created through sound design, recorded live or edited from a sound library. When performing musical key matching the learner could also consider closely related keys that may be appropriate during transition within the live set.

In Outcome 3 — learners would benefit from practicing using hardware controllers on audio assets to familiarise themselves with both the hardware and software to determine a suitable approach to their live set. Approaches could involve the use of keyboard controllers or dedicated controllers for specific software. Learners could develop their live set using alternative software for performance as opposed to the software used for editing and asset creation. Learners would also benefit from learning potential applications of MIDI CC data before deciding on how to utilise these creatively and appropriately within their live set.

Adequate time should be allocated to allow learners to experiment with approaches to their performance and determine appropriate methods of assigning the controller to their assets, virtual instruments and tracks.

In Outcome 4 — learners should be provided with adequate time to rehearse their live set before assessment. The emphasis is ensuring that the real-time aspects of the live set are performed appropriately whilst maintaining the correct gain structure. The learner could perform at an actual event or venue as part of their brief, or if not possible, a simulated environment could be created.

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.

It is recommended that each assessment is carried out and assessed sequentially. However, the initial brief will allow the learner to begin formulating an approach to their live set, and subsequently develop the live set through the tasks of each outcome being issued separately. Evidence for all outcomes should be produced under open-book supervised conditions to ensure authenticity of learner evidence and to enable assessment of performance evidence.

Higher National Unit Support Notes (cont)

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Project briefs could be either designed by the centre or learner driven. If project briefs are learner driven, the centre should ensure that they provide enough scope for generating the required evidence whilst not being over complicated. Example approaches of a brief may cover solo artist, DJ based set, or audio/visual performance.

Outcome 1 — a project brief should be issued, either designed by the centre or learner driven. Assessment could be produced by either a written report, an oral presentation or a personal research project. Oral presentations should be recorded on a high-quality format and kept as evidence.

Outcome 2 — learners could be provided with audio material from which to perform the necessary evidence requirements. These files could be in context to a centre designed brief. If the brief and audio material is learner driven, then the centre must ensure that material used is appropriate to meeting the needs of the evidence requirements. The required approaches of preparing audio assets should be evident from the learner's submitted session and audio files.

Outcome 3 — learners should have access to appropriate resources to allow integration of software and hardware. Both keyboard controllers and dedicated hardware controllers could be used and should be setup appropriately by the learner. The assigning of audio assets and effects parameters correctly in software and for use by a hardware controller should be evident from the learner's submitted session and audio files and an assessor observation checklist.

Outcome 4 — learners should have adequate time to finalise their live set prior to assessment. Evidence for this outcome will be an assessor observation checklist together with a video recording of the performance. The video recording should clearly capture the learner using both the controller and software whilst producing the outcome knowledge and/or skills required.

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.

Higher National Unit Support Notes (cont)

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Opportunities for developing Core and other essential skills

This unit provides the opportunity to develop the following aspects of Core and other essential skills.

Problem Solving: the learner will employ critical thinking when formulating approaches to a live set and selecting appropriate tools and processes for correcting, enhancing and mixing audio and MIDI material.

Communication: the learner will have the opportunity to develop written and/or oral communication skills in Outcome 1.

Information and Communication Technology (ICT): the learner could have the opportunity to develop skills in accessing information through use of online tutorial resources during delivery of this unit.

Entrepreneurial skills: opportunities to develop aspects of enterprise skills should be encouraged in learning, teaching and assessment approaches. Career development skills could be developed by the learner working on live briefs and being encouraged to work to deadlines. Learners will also be developing skills in industry standard techniques and processes.

Employability skills: the learner will have opportunity to develop self-management, problem solving and application of IT elements of employability skills.

Critical listening: the learner will have the opportunity to develop their critical listening through the production of assets.

This Unit has the Critical Thinking component of Problem Solving embedded in it. This means that when learners achieve the Unit, their Core Skills profile will also be updated to show they have achieved Critical Thinking at SCQF level 6.

History of changes to unit

Version	Description of change	Date
02	Core Skills Component Critical Thinking at SCQF level 6 embedded.	31/08/18

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General information for learners

Unit title: Sound Production: Performance Based Digital Audio Workstations (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 allows you to extend your knowledge and skills of digital audio workstations by researching current techniques and approaches of artists and producers who utilise a Digital Audio Workstation (DAW) and hardware controller approach to their live performances. From your research, you will formulate your own approach to a live set, culminating in your own live performance.

You will initially respond to a brief then research and describe approaches currently being employed by performing artists, before using the knowledge gained to describe a potential approach to your own live set.

You will also develop an understanding of more complex audio editing, including the use of markers to quantise audio to a grid and chosen tempo, and matching audio to a specific or appropriately related musical key. Using these editing techniques and others, you will produce a range of audio assets to use for your live set.

For your live set, you will arrange your audio assets into appropriate tracks and learn how to configure a hardware controller to your DAW and chosen software. You will then creatively apply MIDI controller data to parameters within your DAW to allow for real-time control of your live set.

You will be assessed through your ability to effectively interpret the initial brief, prepare the necessary assets for the live set, assign those assets to a controller, then perform the live set utilising synchronised audio assets and effects parameters.

There is no automatic certification of core skills within this unit, however you will have the opportunity to develop core skills such as *Problem Solving*, *Information and Communication Technology (ICT)*, and *Communication*.

You will also have opportunity to develop your critical listening skills throughout the delivery of the unit.

This Unit has the Critical Thinking component of Problem Solving embedded in it. This means that when you achieve the Unit, your Core Skills profile will also be updated to show you have achieved Critical Thinking at SCQF level 6.