

Next Generation Higher National Unit Specification

Digital Audio Workstation (SCQF level 8)

Unit code: J6FP 48
SCQF level: 8 (16 SCQF credit points)
Valid from: session 2022–23

Prototype unit specification for use in pilot delivery only (version 1.0) August 2022

This unit specification provides detailed information about the unit to ensure consistent and transparent assessment year on year.

This unit specification is for teachers and lecturers and contains all the mandatory information required to deliver and assess the unit.

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Unit purpose

The development of more powerful computers and software, and low-cost electronics, has enabled radio and audio producers to build and operate inexpensive digital audio workstations (DAWs).

This unit enables learners to specify and build a DAW, understand its operation to an advanced level, and use it to make complex radio and audio content. The finished DAW should enable learners to record microphone audio into editing software with both headphone and loudspeaker monitoring.

Learners can select the appropriate microphone, audio interface and monitoring for the space they are working in.

They can produce and export content that meets appropriate standards for the medium they have chosen, with sound that is free from sonic and technical defects.

Unit outcomes

Learners who complete this unit can:

- 1 specify and assemble a DAW appropriate for complex radio and audio productions
- 2 use compression, equalisation and other effects to produce a finished product
- 3 edit, mix and master content in a DAW
- 4 output audio files in appropriate formats

Evidence requirements

For outcome 1, learners identify the appropriate equipment they need to assemble a working DAW. This includes a minimum of:

- ◆ a computer
- ◆ software
- ◆ an audio interface
- ◆ monitor speakers and headphones
- ◆ cabling

Learners should demonstrate an understanding of how to use the equipment safely.

In outcome 2, learners gain an understanding of common signal processing tools: compression and equalisation. They learn the theory of what these tools offer and can demonstrate their use in the real world, where different amounts of application can have a significant effect on the finished product.

In outcome 3, learners use a DAW to make a variety of finished content using multiple tracks or sources. All elements should be audible in the finished mix, without unwanted artefacts. Learners' finished output should be free of unwanted distortion and mastered to audio levels appropriate to the end-use.

In outcome 4, learners produce finished files to a client's technical specification, along with all appropriate metadata and production information. This can include multi-channel audio formats and heavily compressed files.

Grading

The unit contributes to learners' overall final grades. Please refer to the grading model in the Next Generation Higher National Educator Guide.

Knowledge and skills

The following table shows the knowledge and skills covered by the unit outcomes:

Knowledge	Skills
<p>Outcome 1 Learners should understand:</p> <ul style="list-style-type: none"> ◆ the purpose of a DAW ◆ the hardware required in a DAW ◆ the software required in a DAW ◆ how to use a DAW to produce content 	<p>Outcome 1 Learners can:</p> <ul style="list-style-type: none"> ◆ specify the equipment they need to build a DAW ◆ assemble a DAW
<p>Outcome 2 Learners should understand:</p> <ul style="list-style-type: none"> ◆ the concept of plug-ins ◆ how compression works ◆ how to equalise sources ◆ how to use effects 	<p>Outcome 2 Learners can:</p> <ul style="list-style-type: none"> ◆ use compression on a variety of source materials to control dynamics ◆ use equalisation to optimise audio in a variety of scenarios ◆ use plug-ins to improve the sound of a production
<p>Outcome 3 Learners should understand:</p> <ul style="list-style-type: none"> ◆ the importance of editing smoothly in complex programmes ◆ how to mix in a multitrack editor ◆ how to mix in mono- and multi-channel audio environments ◆ how to monitor audio levels for radio and audio 	<p>Outcome 3 Learners can:</p> <ul style="list-style-type: none"> ◆ receive audio in an appropriate file format ◆ prepare audio files that are matched in level and loudness ◆ use a DAW to edit and mix multiple tracks ◆ produce mixes that can be broadcast in multiple audio formats ◆ master audio to appropriate technical standards

Knowledge	Skills
<p>Outcome 4 Learners should understand:</p> <ul style="list-style-type: none">◆ the differences between compressed file types and lossless files◆ when to use different file types◆ metadata	<p>Outcome 4 Learners can:</p> <ul style="list-style-type: none">◆ master finished files to the format required by the client◆ supply appropriate metadata, in the file or as a document

Meta-skills

Throughout the unit, learners develop meta-skills to enhance their employability in the radio and audio sector.

Self-management

This meta-skill includes:

- ◆ focusing: staying motivated on long-term projects, forward planning, timekeeping, setting up sessions properly
- ◆ initiative: content organisation, planning an approach to editing, problem solving
- ◆ integrity: creating compliant work, safe and ethical working practices
- ◆ adapting: adjusting to evolving situations, being receptive to feedback, understanding the impact of change on the overall production process

Social intelligence

This meta-skill includes:

- ◆ collaborating: working with others, managing client expectations
- ◆ communicating: storytelling through audio, working to a brief
- ◆ leading: learning how to work with new tools to manipulate content alone and in small groups

Innovation

This meta-skill includes:

- ◆ creativity: generating ideas, creating a finished product
- ◆ sense-making: researching; prioritising tasks, structures and logistics
- ◆ curiosity: trying new approaches and software tools to produce the sounds required
- ◆ critical thinking: breaking the edit down, deciding work is of a high standard, critical listening

Literacies

Learners develop core skills in the following literacies:

Numeracy

Learners develop numeracy skills by:

- ◆ keeping files organised on the editing timeline
- ◆ managing file durations
- ◆ understanding sample rates and bit-depth

Communication

Learners develop communication skills by:

- ◆ working with presenters, artists or clients
- ◆ receiving and responding to feedback
- ◆ presenting finished work, where applicable

Digital

Learners develop digital skills and computer literacy by:

- ◆ using computer-based editing software
- ◆ file management
- ◆ manipulating audio using software plugins
- ◆ ingesting and exporting files in various audio formats

Delivery of unit

You should deliver and assess this unit at SCQF level 8, alongside Content Creation at SCQF level 8; Radio Station Operation at SCQF level 8; Working in the Radio and Audio Industry at SCQF level 8; and selected optional units in the Higher National Diploma (HND) Radio framework.

Additional guidance

The guidance in this section is not mandatory.

In this unit, learners gain knowledge and skills in the context of commonly encountered issues. You should present learners with material that offers them scope to apply knowledge and skills in real-life or simulated DAW projects. You should encourage learners to take a proactive problem-solving approach, and emphasise the importance of critical listening skills, to help them identify opportunities to apply the DAWs' complex features correctively and creatively.

Equality and inclusion

This unit is designed to be as fair and as accessible as possible with no unnecessary barriers to learning or assessment.

You should take into account the needs of individual learners when planning learning experiences, selecting assessment methods or considering alternative evidence.

Guidance on assessment arrangements for disabled learners and/or those with additional support needs is available on the assessment arrangements web page:

www.sqa.org.uk/assessmentarrangements.

Information for learners

Digital Audio Workstation (SCQF level 8)

This section explains:

- ◆ what the unit is about
- ◆ what you should know or be able to do before you start
- ◆ what you need to do during the unit
- ◆ opportunities for further learning and employment

Unit information

This unit helps you develop the practical skills you need to produce radio programmes in a non-studio setting to a standard appropriate for broadcast or podcast. Before you start the unit, you should have a basic understanding of computer-based editing on accessible software.

Outcome 1 is practical in nature and requires you to understand what equipment you need to assemble a digital audio workstation (DAW). You develop your knowledge beyond basic DAW operation, learning when audio moves from the analogue to the digital domain, the signal path in a DAW, and connections between the hardware elements. You cover the importance of quality audio monitoring and metering, and the importance of file management and backup.

Used simply, the DAW can be an audio interface connected to a computer, but you should, at least theoretically, consider an audio control surface and multiple audio formats.

In outcome 2, you develop an enhanced understanding of dynamics and equalisation. In dynamics, you study the theory of audio compression, limiting and gating. The basics of compression ratios, attack and release are understood, allowing you to apply approximate settings speedily and take the guesswork out of working on audio. Similarly, you learn how to apply noise gates to reduce unwanted background noise.

You develop a deeper understanding of the audio frequency spectrum and how adjustments to each element interact.

Outcome 3 is practical in nature, and you create a wide variety of content in a DAW. You demonstrate your knowledge of the areas covered in outcome 2, while making content that meets the client's expectations.

Outcome 4 teaches you different audio formats, from mono and stereo to emerging surround formats. This enables you to embrace and implement new methods of producing audio as they emerge. You gain a solid understanding of file types and their different purposes.

Throughout the unit, you develop your meta-skills in self-management, social intelligence and innovation.

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Assessment of outcomes 3 and 4 can be integrated with outcomes in other units in the Higher National Diploma (HND) Radio framework.

The unit broadens your knowledge of the current radio and audio industry, and opportunities for work.

Grading

This unit contributes to your overall final grade.

Administrative information

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Superclass: LK

History of changes

Version	Description of change	Date

Note: please check [SQA's website](#) to ensure you are using the most up-to-date version of this document.