

Higher National Unit Specification

General information for centres

Unit title: Sound Production: Multi-track Mixing

Unit code: DJ2E 34

Unit purpose: This unit is designed to enable candidates to develop an understanding, of the processes involved in mixing multi-track recordings and demonstrate practical ability in this field. It prepares them for this by developing the basic knowledge required to analyse and appreciate completed mixes, along with practical opportunities for them to apply relevant mixing techniques to a multi-track recording. It is primarily intended to complement skills developed in other areas of sound capture and reproduction, and would be suitable for candidates with limited experience in mix-down situations.

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

1. Demonstrate an understanding of the art and science of mixing.
2. Mix down a multi-track recording, incorporating signal processing techniques.
3. Develop an understanding of, and utilise current mix-down formats.
4. Create and edit a mix-down master.

Credit points and level: 2 HN 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.*

Recommended prior knowledge and skills: It is not necessary for candidates to have had previous experience of multi-track mixing. The practice and understanding of mixing will be developed during the course of the unit. Candidates should have good communication skills. These may be demonstrated by the achievement of core skill Communication at Higher level or by possession of Higher English and Communication or a suitable NQ Communication Unit (SCQF level 5/6).

Core skills: There may be opportunities to gather evidence towards core skills in this Unit, although there is no automatic certification of core skills or core skills components.

Context for delivery: This is an optional Unit in the frameworks for HNC/D Sound Production group awards. It is recommended that it is taught and assessed within the context of the particular group award to which it contributes.

General information for centres (cont)

Assessment: This Unit could be assessed by two instruments of assessment – one written and one practical, which would require candidates firstly to produce a report or answer questions based on a study or analysis of an example of a multi-track mix-down, and secondly, to complete a multi-track mix-down. The second part will be achieved using practical skills developed over the course of this Unit. It would also be possible to break this unit down into four separate assessment events. Practical assessment should be carried out in controlled conditions.

Higher National Unit specification: statement of standards

Unit title: Sound Production: Multi-track Mixing

Unit code: DJ2E 34

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

Demonstrate an understanding of the art and science of mixing.

Knowledge and/or skills

- ◆ Evaluation of sound engineering and mixing techniques.
- ◆ Identification of production techniques.
- ◆ Role of the mix-down engineer.

Evidence requirements

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

- ◆ provide an accurate and clear explanation of sound engineering and mixing skills used in an example of a mixed down recording. The example should be derived from either a supplied mix-down, or from material provided by the candidate.
- ◆ identify production techniques, with reference to context and genre. (Examples of 'context' may refer to recording style, location, final media or dissemination.)
- ◆ discuss the appropriateness of sound balancing, processing and other relevant mixing techniques.
- ◆ describe the role of the mix-down engineer in a multi-track session, with reference to context and genre.

The above items refer to the bullet points listed under knowledge and/or skills and must be assessed on each assessment occasion. Candidates must provide a satisfactory response to all the listed items in the form of a report or in response to a specific question or questions.

Evidence should be generated through an assessment event, which allows either a written or oral response. The use of personal notes may be permitted during the presentation. These should be retained as evidence. The assessment should be carried out under controlled condition

Higher National Unit specification: statement of standards (cont)

Unit title: Sound Production: Multi-track Mixing

Assessment guidelines

In the assessment candidates will be required to produce a report based on an example of a multi-track mix-down. The report may be supplemented by additional questions to ensure coverage of all aspects of the evidence requirements. The format of the report is not part of any mandatory evidence requirements for this Unit and it may be presented in any suitable way. It is anticipated that reports will be in written or oral form.

Mix-down techniques should be discussed and an understanding demonstrated of any signal processing involved. The report should include background information on the studio or recording location, engineer, artist and producer, as well as any historical or genre-specific context, which may be relevant.

Where an example of a mix-down is used as part of the assessment, it should be provided in an appropriate form, allowing the candidate and/or assessor to easily reproduce the example. The requirement for the use of specific reproduction equipment should be avoided, as should reproduction formats and equipment, which are specific to location.

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

Mix down a multi-track recording, incorporating signal processing techniques.

Knowledge and/or skills

- ◆ Understanding of equipment used and its interconnection.
- ◆ Understanding of mixing techniques.
- ◆ Recognise problem areas within a mix-down session
- ◆ Use of signal processing.
- ◆ Understanding of imaging or signal placement within a mix-down session
- ◆ Use of time domain effects.
- ◆ Correct use of monitoring in context.
- ◆ Appropriate documentation.

Evidence requirements

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

- ◆ control the signal flow of a multi-track recording throughout a mix-down session.
- ◆ isolate individual signals in a mix-down session.
- ◆ identify problem areas within a mix-down session and provide a solution.

Higher National Unit specification: statement of standards (cont)

Unit title: Sound Production: Multi-track Mixing

- ◆ apply appropriate processing to individual signals.
- ◆ effectively use recognised forms of signal processing: i.e. EQ, dynamic processing, effects processing etc.
- ◆ display an understanding of imaging or signal placement within a mix-down session.
- ◆ control effectively the overall mix-down level so that it does not exceed appropriate standards.
- ◆ correctly use an audio monitoring system appropriate for the mix-down session.
- ◆ produce a mix-down from a multi-track recording.
- ◆ produce documentation.

The above items refer to the bullet points listed under knowledge and/or skills and must be assessed on each assessment occasion. Candidates must provide satisfactory evidence of the application of the skills required to carry out the tasks indicated above.

Evidence should be generated through an assessment undertaken in controlled conditions. Candidates will be assessed after an adequate period of tuition and practice. Candidates should submit relevant documentation, such as track-sheets and a record of outboard equipment parameter settings and connections, as evidence. A tutor checklist should be used to record achievement of each of the knowledge and/or skills.

The mix should consist of a minimum of twelve discrete tracks.

Assessment guidelines

The assessment of this Outcome can be combined with Outcomes 3 and 4 as part of a single assessment for the Unit, details of which are given under Outcome 4 below.

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

Develop an understanding of, and utilise current mix-down formats.

Knowledge and/or skills

- ◆ An awareness of mix-down formats.
- ◆ Limitations of formats.
- ◆ Appropriateness of format for purpose.
- ◆ Appropriate use of format in a mix-down situation.
- ◆ Correct use of connections or interfaces.
- ◆ Understanding and use of correct levels recorded to mix-down format.
- ◆ Correct use of archiving notes and labelling of mix-down media.
- ◆ Labeling and associated records

Higher National Unit specification: statement of standards (cont)

Unit title: Sound Production: Multi-track Mixing

Evidence requirements

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

- ◆ understand the specifications and appropriate use of a number of mix-down formats used in a multi-track mix-down session.
- ◆ select a mix-down format or formats, appropriate for purpose.
- ◆ correctly connect to and record to a chosen format.
- ◆ identify appropriate recording levels pertinent to chosen format.
- ◆ label accurately all mix-down media and associated records.

The above items refer to the bullet points listed under knowledge and/or skills and must be assessed on each assessment occasion. Candidates must provide satisfactory evidence of the application of the skills required to carry out the tasks indicated above.

Evidence should be generated through an assessment undertaken in controlled conditions. Candidates will be assessed after an adequate period of tuition and practice. Candidates may bring to the assessment event any notes that they have made personally. These should be submitted as evidence. Candidates may demonstrate practically their understanding of mix-down formats by the correct choice and use of formats throughout a mix-down session. Additional written or oral assessment may also be undertaken, allowing the candidate to demonstrate a more comprehensive understanding of current mix-down formats. A tutor checklist should be used to record achievement of each of the knowledge and/or skills.

Assessment guidelines

The assessment of this Outcome can be combined with Outcomes 3 and 4 as part of a single assessment for the Unit, details of which are given under Outcome 4 below.

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 4

Create and edit a mix-down master.

Knowledge and/or skills

- ◆ Understanding of editing techniques appropriate to purpose.
- ◆ Correct use of audio editing tools/system.
- ◆ Identify edit points and execute correctly.
- ◆ Identification of final mastering media appropriate to purpose.
- ◆ Use of final mastering media and equipment appropriate to purpose.
- ◆ Understanding requirement for archiving notes and labelling of mix-down master.

Higher National Unit specification: statement of standards (cont)

Unit title: Sound Production: Multi-track Mixing

Evidence requirements

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

- ◆ understand the technical processes necessary to carry out suitable editing of an audio mix-down in order to produce a final mix-down master.
- ◆ carry out correctly identified editing to create a final mix-down master.
- ◆ apply suitable signal processing, as required.
- ◆ create a final mix-down master on relevant media.
- ◆ produce appropriate archive notes and labelling for final mix-down master media.

The above items refer to the bullet points listed under knowledge and/or skills and must be assessed on each assessment occasion. Candidates must provide satisfactory evidence of the application of the skills required to carry out the tasks indicated above.

Evidence should be generated through an assessment undertaken in controlled conditions. Candidates will be assessed after an adequate period of tuition and practice. Candidates may bring to the assessment event any notes that they have made personally. These should be submitted as evidence. A tutor checklist should be used to record achievement of each of the knowledge and/or skills.

Assessment guidelines

The assessment of this Outcome can be combined with Outcomes 2 and 3 as part of a single assessment for the Unit. This could be carried out in controlled conditions, with the appropriate amount of time allocated for the assessment. It would be possible, if desired to break this assessment down into three separate assessment events, which assess each Outcome separately.

In this Unit candidates will produce, from a multi-track recording, a final mix-down recording and then create an edited master using an appropriate mix-down format, maintaining appropriate records.

The initial mix-down session should take place as either a single event or as a series of shorter events. The multi-track recording supplied should be appropriate to this level and should be of a genre and/or style made familiar to the candidates through demonstration and practice sessions prior to assessment. Where practice sessions are used, care should be taken to ensure that they would provide the candidate with sufficient opportunity to meet the evidence requirements of the Unit. Outcome 1 should be completed, before embarking on combined Outcomes 2, 3 and 4.

Higher National Unit specification: statement of standards (cont)

Unit title: Sound Production: Multi-track Mixing

The combined Outcomes should meet the following criteria:

- ◆ The candidate should be allowed to become familiar with the material to be mixed for assessment. A clearly identifiable mix-down plan should be created – although not so rigid as to restrict creativity.
- ◆ A ‘planning session’ should be completed before the mix-down session is started. A period of reflection would be beneficial prior to mixing.
- ◆ The mix-down should utilise appropriate techniques suitable for the type of session. Effective control of all technical aspects of the mix-down should be demonstrated at this stage, suitable to genre / style.
- ◆ Candidates should provide evidence of an understanding of mix-down formats and demonstrate the effective use of at least one. Understanding may be demonstrated in the form of a written or verbal report.
- ◆ A final edited mix-down master should be created, using editing techniques suitable to purpose.
- ◆ Accurate and appropriate records and labelling of media should be maintained throughout.

Outcomes 2, 3 and 4 may also be assessed separately. Assessors are advised that suitable instruments of assessment should be devised for the practical elements of the assessment. Checklists could be used to chart practical progress, along with accompanying physical evidence of achievement.

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.

Administrative Information

Unit code: DJ2E 34
Unit title: Sound Production: Multi-track Mixing
Superclass category: KG
Date of publication: September 2004
Version: 02

History of changes:

Version	Description of change	Date
02	Removal of Word Count and Presentation Length.	02/06/11

Source: SQA

© Scottish Qualifications Authority 2004, 2011

This publication may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged.

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: Sound Production: Multi-track Mixing

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 prepare candidates for a broad range of sound engineering roles, by giving them the essential underpinning knowledge and skills for employment. Candidates may work in small groups, depending on access to facilities and equipment. Candidates should use this unit to develop the skills of, and an appreciation of the role of the mix-down engineer in the context of a multi-track session.

Although this unit is expressed in generic terms, it should be related to a context, which is familiar to candidates.

The Unit can be approached from the standpoint of the individual developing an understanding and appreciation of the technical, creative and corrective skills required of the sound engineer.

Outcome 1 looks at the candidate's ability to analyse mix-down techniques applied to an example of a multi-track mix. Candidates should become familiar with relevant terminology and should make use of this when describing practices or techniques, which they have identified. They should also identify and appreciate the role of the mix-down engineer in relation to a multi-track recording session, with reference to context, style or genre.

In Outcome 2, technical abilities of the candidate are developed along with an appreciation of the need to work individually or in small groups. They should be encouraged to think about the following:

- ◆ The demands and constraints placed on the mix-down engineer by clients and deadlines, and the extent to which the engineer's contribution to a project is limited by budget or equipment.
- ◆ The need for rapid decision making on the part of the engineer – creative or technical judgements may need to be made, problems solved and technical solutions offered to ensure the smooth running of the session.

Higher National Unit specification: support notes (cont)

Unit title: Sound Production: Multi-track Mixing

Outcome 3 considers a number of mix-down formats and their relevance to a completed mix-down session. Candidates should be made aware of:

- ◆ All currently available recognised mix-down formats. They should also display some background knowledge of less common or obsolete formats, with reference to archiving, restoration or re-mixing for storage on contemporary media.
- ◆ The requirement for accurate labelling and record-keeping/archiving should be stressed, along with developing an understanding of suitable storage conditions for appropriate formats

Outcome 4 deals with the creation of a final mix-down master. Candidates should also be made aware of:

- ◆ Use of editing tools and techniques relevant to purpose.
- ◆ Less common and obsolete techniques and practices, regardless of availability of equipment or facilities
- ◆ The technical requirements of duplicators, the broadcast media or other current forms of dissemination.
- ◆ Further signal processing for the advanced stages of ‘production master’ creation.
The role of the mastering engineer.

Guidance on the delivery and assessment of this Unit

This unit an optional unit in the group award HNC/D Sound Production, which is primarily designed to provide candidates with technical or professional skills related to a specific occupational area. It is expected, however, that those who successfully complete the award would progress a career in the audio, media or broadcast industries. The Unit will provide a solid and complementary grounding relevant to study in more advanced areas of Sound Production. This should allow the unit to be delivered in a way that enables candidates to appreciate its relevance to any occupational situation, along with developing an awareness of the potential broader use of the skills gained.

Advanced techniques such as automated mixing may be incorporated into the Unit. However, while there would be no need for such advanced techniques to be formally assessed, it would be advantageous for candidates to have some experience in this area before progressing to higher levels of study.

Assessment will be by a minimum of two instruments of assessment. However, each Outcome has the potential to be delivered separately, for which an individual instrument of assessment for each Outcome should be devised.

Candidates may bring with them any personal notes or material to the event, but they may not bring textbooks, handouts or other material not prepared by themselves.

Higher National Unit specification: support notes (cont)

Unit title: Sound Production: Multi-track Mixing

Open learning

This unit could be delivered by open learning. However, it would require planning by the centre to ensure the sufficiency and authenticity of candidate evidence. Arrangements would have to be made to ensure that a single assessment for Outcomes 2,3 and 4 is delivered in a supervised environment under controlled conditions

To keep the administrative burden to a minimum, it is recommended that a single report/presentation is used for Outcome 1, and that a single practical assessment is used for Outcome 2, 3 and 4.

For further information and advice please refer to *Assessment and Quality Assurance for Open and Distance Learning (SQA, February 2001 – publication code A1030)*.

Candidates with additional support needs

This Unit specification is intended to ensure that there are no artificial barriers to learning or assessment. 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. For information on these, please refer to the SQA document *Guidance on Special Assessment Arrangements for Candidates with Additional Support Needs* (BA 2399, SQA, due 2004).

General information for candidates

Unit title: Sound Production: Multi-track Mixing

This unit is designed to enable you to recognise the main issues, skills and knowledge required to develop in the role of the multi-track mix-down engineer. It is primarily intended to prepare you for a technical role in any of the media industries which require sound production skills.

The Unit is about the work of the mix-down engineer. It has four main areas, each of which is the subject of a separate Outcome. To begin with you will look at the overall skills and techniques involved in creating a multi-track mix. You will examine examples of completed mixes and analyse the technical or creative processes used as well as developing an appreciation of techniques used and an understanding of the demands of style and genre. You will also look at the role of the recording and mix-down engineer in relation to the recording session.

You will then develop the practical skills and understanding necessary to complete a multi-track mix-down. The practical use of signal processing will be examined and utilised along with the process of audio editing and use of appropriate equipment, culminating in the creation of a final mix-down master.

Overall, you will be expected to use the knowledge and skills from this Unit to enable you to complement a broad base of skills developed in other associated areas of study. This may help you in future to become a competent audio professional.

In order to complete this Unit successfully, you will be required to achieve a satisfactory level of performance in all Outcomes. The assessment for the first Outcome will normally be in the form of a report or presentation on the topic described above. The practical elements of this Unit may be assessed under controlled conditions and can be made specific to available equipment and facilities.

You will be notified prior to assessment event dates and will only be assessed after an adequate period of tuition and/or practise. You will be allowed to bring notes, which you have made personally for your own use. However, you will not be permitted to bring textbooks, handouts or other material, which you have not prepared yourself to the assessment.