National Unit Specification: general information

UNIT   Music: MIDI Sequencing (SCQF level 7)

CODE   F79B 13

SUMMARY

In this Unit candidates will be given the opportunity to develop practical and creative skills which will allow them to use a MIDI (Musical Instrument Digital Interface) sequencer including digital audio to create, edit and mix audio. Candidates will also evaluate the production of their MIDI/audio sequence created in Outcome 1. This is a mainly practical Unit, but candidates will also gain knowledge and understanding of MIDI theory, functions and capabilities.

This Unit is suitable for candidates undertaking a music programme of study and interested in enhancing skills in MIDI sequencing and audio production. This Unit is also suitable for those who have prior knowledge of MIDI sequencing and wish to develop their practical and creative skills by incorporating audio tracks.

OUTCOMES

1   Create a MIDI/audio sequence.
2   Edit a MIDI/audio sequence in accordance with a given brief.
3   Mix a MIDI/audio sequence.
4   Evaluate the production of the completed MIDI/audio sequence.

RECOMMENDED ENTRY

Entry is at the discretion of the centre, however candidates would normally be expected to have attained the following or equivalent:

Music: MIDI Sequencing (SCQF level 6)

Candidates would also benefit from some knowledge or practical experience of computer multimedia applications.

National Unit Specification: general information (cont)

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CREDIT VALUE

1 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.

CORE SKILLS

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

The Unit provides opportunities for candidates to develop aspects of the following Core Skills:

♦ *Communication*
♦ *Information Technology*
♦ *Problem Solving*

These opportunities are highlighted in the Support Notes of this Unit Specification.

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

Create a MIDI/audio sequence.

Performance Criteria

(a) Correctly identify and configure hardware and software parameters to allow transmission and reception of MIDI and audio signals.
(b) Use arrangement/compositional techniques to create MIDI sequences.
(c) Use sequencer features effectively.
(d) Effectively record audio source(s) with appropriate signal levels and tracking arrangements.
(e) Save the MIDI/audio sequence to an appropriate medium ensuring that file handling is correct.

OUTCOME 2

Edit a MIDI/audio sequence in accordance with a given brief.

Performance Criteria

(a) Correctly identify and remedy technical errors in a MIDI/audio sequence.
(b) Effectively use a variety of editing functions to modify a MIDI/audio sequence.
(c) Save the MIDI/audio sequence to an appropriate medium ensuring that file handling is correct.

OUTCOME 3

Mix a MIDI/audio sequence.

Performance Criteria

(a) Use a variety of editing and controller functions to mix a MIDI sequence.
(b) Apply dynamic and time-based processing to audio track(s).
(c) Mix is creative and effective.
(d) Save final mix to an appropriate medium ensuring that file handling is correct.

OUTCOME 4

Evaluate the production of the completed MIDI/audio sequence.

Performance Criteria

(a) Describe the production techniques used in creating the MIDI/audio sequence.
(b) Analyse the effectiveness of production techniques used.
(c) Identify ways of improving future MIDI/audio sequences.

National Unit Specification: statement of standards (cont)

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EVIDENCE REQUIREMENTS FOR THIS UNIT

Product evidence is required to demonstrate that candidates have achieved all Outcomes and Performance Criteria.

Outcome 1

Product evidence, supplemented by an Assessor Observation Checklist, is required to demonstrate that the candidate has achieved Outcome 1 to the standard specified in the Outcome and Performance Criteria. Each candidate will:

♦ set up a MIDI sequencer workstation by selecting and connecting equipment, by routing MIDI data and by setting up input(s) for recording audio track(s).
♦ create MIDI sequences using arrangement/compositional techniques. At least two MIDI sequences should be completed and each must consist of at least six distinct composed/substantially reworked parts including one or more recorded audio track; the playing time of the two sequences should be a minimum of six minutes. Arrangement/compositional elements must include melody, harmony, rhythm, structure and timbre.
♦ use the following sequencer features: transport controls, metronome, tempo, time signature, looping, MIDI input recording, program change.
♦ save the MIDI sequence to an appropriate medium.

Each audio track should be recorded:

♦ at an appropriate signal level
♦ with as little electrical and background noise as possible
♦ with appropriate EQ and mic placement to achieve acceptable tonal qualities
♦ in an appropriate file location

It is not a requirement that the MIDI sequences be original compositions of the candidate. New arrangements of existing pieces are acceptable. Original and existing MIDI files are also acceptable and can be arranged and edited. However, some MIDI input recording must be carried out. The audio track must be a live recording produced by the candidate.

If drums and/or percussion are used, these will count as one part only.

Practical understanding of techniques and processes should be assessed as the candidate works through the Unit in a controlled environment.

The evidence for this Outcome will be gathered under supervised conditions at an appropriate point in the Unit.

National Unit Specification: statement of standards (cont)

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Outcome 2

Product evidence is required to demonstrate the candidate's ability to identify technical errors and use editing functions to modify a given MIDI/audio sequence that includes one or more audio tracks. An Assessor Observation Checklist should be maintained by the tutor to ensure that all Performance Criteria are met.

The brief for Outcome 2 PC (a) will be a MIDI/audio sequence (of at least six distinct parts) which includes intentional errors that the candidate will be asked to rectify.

The rectified MIDI/audio sequence must be saved to an appropriate medium.

The brief for Outcome 2 PC (b) and (c) will be a MIDI/audio sequence of at least six distinct parts.

The candidate will be required to carry out the following editing functions:

♦ sequence/track/arrangement editing: tempo changes, time signature changes, program changes, markers, panning, structural alterations
♦ part/region editing: cut/delete, copy, paste, duplicate, transposition
♦ note editing: pitch, rhythm, velocity, quantise
♦ audio: EQ, normalise, top and tail

Candidates will be required to use each of these editing functions at least once within the completed saved file.

The evidence for this Outcome will be gathered under supervised conditions at appropriate points in the Unit.

Outcome 3

Candidates will be required to mix a MIDI/audio sequence (of at least six distinct parts). Product evidence, in the form of the mix, is required for this Outcome.

Performance evidence, supplemented by an Assessor Observation Checklist, is also required for Outcome 3. Candidates will be required to demonstrate the ability to use the following editing and controller functions in mixing: dynamics, fade in, fade out, modulation, volume, expression, panning, sustain, pitch bend, dynamic processing, time-based processing.

Although the assessor will have an input in monitoring candidate progress and in advising on next steps throughout delivery of the Unit, the responsibility for creating and/or editing and saving the completed MIDI/audio sequence is entirely that of the candidate.

The evidence for this Outcome will be gathered under supervised conditions at appropriate points in the Unit.

National Unit Specification: statement of standards (cont)

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Outcome 4

Candidates are required to produce written and/or oral evidence which shows their ability to critically evaluate the work carried out in Outcome 1.

This evidence will be gathered under open-book conditions towards the end of the Unit.

The Assessment Support Pack (ASP) for this Unit provides sample assessment material including an instrument of assessment, specified briefs and checklists. Centres wishing to develop their own assessments should refer to the Assessment Support Pack to ensure a comparable standard.

National Unit Specification: support notes

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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

Candidates should gain an understanding and develop skills and techniques used in the creation of a MIDI/audio sequence. Candidates will also have the opportunity to gain a conceptual and practical understanding of the selection, assembly and operation of MIDI and audio devices, including MIDI sequencers, computers, audio cards and keyboards. Candidates should also be able to apply skills and techniques learned when editing and mixing a MIDI/audio sequence.

It is recommended that various connections of MIDI with audio systems are demonstrated and that candidates have a clear idea of devices that are inter-connectable.

MIDI workstation setups may include:

♦ MIDI keyboard, MIDI interface, computer, MIDI sound module, headphones, microphone and mixer/interface
♦ MIDI keyboard/synthesizer, sequencer, headphones, microphone and mixer/interface
♦ computer with software, headphones, microphone and mixer/interface

Through practical activities candidates will develop knowledge and understanding of MIDI connectivity and MIDI protocol when creating a MIDI/audio sequence using a MIDI workstation. Recognition of MIDI data transmission within the MIDI workstation is also advisable in order that the candidates have an idea about the nature of MIDI data, ie that MIDI transmits MIDI data and not audio signals. Candidates will also be required to develop skills in the techniques of live recording into a digital audio channel using a suitable mixer/interface.

Outcomes 2 and 3 are designed to allow candidates to acquire skills required in editing and mixing MIDI/audio sequences to a given brief. In this way candidates should be encouraged to use the full range of editing and mixing features of the chosen MIDI sequencer workstation and the controllers referred to in the Evidence Requirements for this Unit.

Outcome 4 is designed to encourage candidates to reflect on their work. They will critically evaluate the production techniques used in Outcome 1 and identify ways in which to improve future MIDI/audio sequences.

National Unit Specification: support notes

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GUIDANCE ON LEARNING AND TEACHING APPROACHES FOR THIS UNIT

The Unit can be delivered through practical demonstrations aided by theoretical presentations and notes. The nature of the Unit is very much practical and the candidate is encouraged to apply skills and knowledge in setting up and creating the finished MIDI/audio sequence through regular practice.

Candidates should be encouraged to keep notes on how they set up MIDI systems and of the various techniques they utilise to create, edit, mix and save their MIDI/audio sequences to a suitable medium. This information can be used to assist the candidate in their evaluation and can also help assessors ensure that candidates complete each task to the level required. Question and answer sessions could be used during the presentation and demonstration of the sequenced piece to ensure that candidates have a clear understanding of the Unit's purpose and what is required to pass. It would be beneficial for candidates to demonstrate an understanding of why an edit has been performed on a certain part of the sequence and why a mixing technique has been performed on a certain part of the sequence. This could be provided by writing a brief editing report or by oral questioning and may be included in the final evaluation.

Candidates should be encouraged towards independent learning and basic research to aid them with the technical evaluation for Outcome 4.

Candidates must be aware of, and adhere at all times to the requirements of current copyright legislation in relation to the creation, performance and use of music and other forms of intellectual property.

Health and safety should be integral to teaching and learning, and centres should view this holistically in any practical exercises. Candidates should be made aware that Health and Safety is the concern of all professionals.

Time should be allowed for any necessary reassessment.

OPPORTUNITIES FOR CORE SKILL DEVELOPMENT

Candidates will be producing written and/or oral evidence in their evaluation in Outcome 4, which provides opportunities to develop aspects of the Core Skill of *Communication*.

Candidates will have the opportunity to develop aspects of Problem Solving while undertaking the task of creating a MIDI sequence in Outcome 1.

Should the MIDI workstation include a computer and software, this will allow candidates opportunities to develop aspects of the Core Skill of *Information Technology*.

National Unit Specification: support notes (cont)

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GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Suitable instruments of assessment are as follows:

Outcomes 1, 2 and 3:   Practical exercises
Outcome 4:   Report

Outcome 1 could be assessed by providing the candidate with a list of equipment that may be used to set up a MIDI/audio workstation. MIDI workstation setups may include:

♦   MIDI keyboard, MIDI/audio interface, computer, MIDI sound module and headphones, microphone and mixer/interface
♦   USB MIDI keyboard, computer with USB and sequencer software, microphone and mixer/interface
♦   MIDI keyboard/synthesizer, sequencer, headphones, microphone and mixer/interface
♦   computer with MIDI sequencer and headphones, microphone and mixer/interface

The list of equipment given to candidates would include distracter items that would not be suitable for the MIDI workstation — such as a Firewire cable, Ethernet cable, musical keyboard (without MIDI capabilities) and musical software applications that cannot transmit/receive MIDI.

It may be possible to exchange MIDI sequences completed from Outcome 1 in order that they can be mixed by fellow candidates.

Outcome 2 may be assessed through a series of practical exercises. The centre will provide candidates with a MIDI/audio sequence that includes intentional errors that the candidates have to identify and correct through using various editing functions. Subsequent editing could be carried out using the same sequence or a different one.

Outcome 3 may be assessed through a series of practical exercises. The centre will provide candidates with a MIDI/audio sequence of at least six distinct parts and they must demonstrate mixing techniques by using all of the editing and controller functions listed within the Evidence Requirements.

Outcome 4 should be in the form of a report showing that the candidate has a good technical understanding of creating, mixing and saving MIDI with audio processing to professional standards. The report should include stereo and mono microphone placement and the process of mixing audio with MIDI data. The report should include mention of the MIDI controllers used and describe how effective these were in creating the final production. It should also detail the process of producing the audio track(s) including signals recorded, input dB levels and compression settings, equalisation, send effects, panning and balancing used and their effectiveness in achieving the final product. A concluding final product comparison to the original brief should be included along with reflection on where possible improvements could be made.

This exercise should not require a word count. Lists of equipment used and comparisons with professionally available sequences should be encouraged.

National Unit Specification: support notes (cont)

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Opportunities for the use of 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 communications technology (ICT), such as e-testing or the use of e-portfolios or e-checklists. Centres which wish to use e-assessment must ensure that the national standard is applied to all candidate evidence and that conditions of assessment as specified in the Evidence Requirements are met, regardless of the mode of gathering evidence. Further advice is available in *SQA Guidelines on Online Assessment for Further Education (AA1641, March 2003), SQA Guidelines on e-assessment for Schools (BD2625, June 2005).*

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**