

# Getting Started

## GCE Music Technology

### Edexcel Advanced Subsidiary GCE in Music Technology (8MT1)

First examination 2009

### Edexcel Advanced GCE in Music Technology (9MT01)

First examination 2010



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## Introduction

The world of music technology is in a constant state of flux. It is a big-money industry which reaches into all areas of modern music, from designing acoustic spaces to house traditional orchestral ensembles to programming jingles for television advertisements. As consumers we are being offered many more options in our choice of entertainment. As the boundaries between the internet and television programming become less distinct there is more demand for musical content than ever before in our history. In the last 5–10 years the ability to record professional quality music at home on relatively inexpensive equipment has become a very real option. Podcasting, YouTube, MySpace, music download sites, better quality internet radio and audio streaming etc. have all made self-promotion and distribution a much more viable option than has ever been the case previously. With all these opportunities come the associated problems of quality control and a glut of releases of dubious merit.

This qualification aims to give students the skills and knowledge they need to thrive in this brave new global industry by giving them the opportunity to develop both their practical skills and their aural discrimination so that their work can meet the highest standards.

There is a bewildering array of software available for composing, arranging, sequencing, recording, notating, editing, producing, remixing and mastering music. As such, since the Curriculum 2000 edition of the GCE Music Technology specification, it is much less straightforward to draw distinct lines and give unambiguous, definitive advice as to which software is appropriate for which task. The underlying principle of the new specification is that Edexcel want students to produce the highest quality work they possibly can, using whatever resources they have available to them, as long as their submissions are a result of their own efforts. Students should concentrate on getting things right throughout the process, from the capture of sounds or data input to editing, mixing and mastering their work, making the available technological resources serve their musical purposes along the way.

As notation and sequencing packages develop there is less of a distinction between the functionalities of individual programmes, although they may have very different workflows and interfaces. It is to be expected that, during the lifetime of this specification, these programmes will continue to add to their armoury with each new version, probably resulting in even more of an overlap of functionality. There are far less restrictions written into the specification to accommodate this phenomenon. Students are expected to act with integrity in how they go about producing their work, and controlled Assessment will assist in ensuring that teachers monitor their students' working practices. In general, students should indicate exactly what programmes, equipment and techniques have been used to produce their work so that the examiner can make an informed assessment.

## Specification changes at a glance

The new specification necessitated the Curriculum 2000 requirement to be transformed into a four-unit model. This table demonstrates how the old units relate to the new specification.

	Curriculum 2000	GCE 2008	
<b>AS</b>	<p><b>Unit 1</b> Two sequences or two recordings + structured commentary + logbook</p> <p><b>Unit 2</b> Two arrangements including notated score for arrangement 1 + logbook</p>	<p><b>Unit 1</b> One sequenced performance stimulus provided by Edexcel) One multi-track recording (free choice of stimulus) One arrangement (choice from two stimuli provided by Edexcel) Streamlined logbook</p>	<b>35%</b>
	<p><b>Unit 3</b> Listening and Analysing</p>	<p><b>Unit 2</b> Listening and Analysing</p>	<b>15%</b>
<b>A2</b>	<p><b>Unit 4</b> Sequenced performance Integrated sequence and recording Multi-track recording + logbook</p> <p><b>Unit 5</b> Two compositions (including scores) + logbook</p>	<p><b>Unit 3</b> One sequenced integrated performance (stimulus provided by Edexcel) One multi-track recording (free choice of stimulus) One composition (choice from three stimuli provided by Edexcel) Streamlined logbook</p>	<b>30%</b>
	<p><b>Unit 6</b> MIDI paper + special focus works paper</p>	<p><b>Unit 4</b> Listening and Analysing</p>	<b>20%</b>



## Areas of study

Areas of Study (AoS) are intended as threads which interweave all aspects of the course. Integration of practical and theoretical work has long been a guiding principle behind the structure of GCE Music Technology and this is partially achieved through the Areas of Study.

In the new specification there are three Areas of Study:

- AoS 1: The Principles and Practice of Music Technology
- AoS 2: Popular Music Styles since 1910
- AoS 3: The Development of Technology-based Music

In AS Music Technology students concentrate on the first two AoS. In A2 students extend their understanding of AoS 1 and in addition work on AoS 3.

Areas of Study are distinct from Assessment Objectives.

Areas of Study are set by Edexcel as a method of integrating the different aspects of learning within the course.

Assessment Objectives are set by the awarding body regulator as a method of ensuring that all aspects of the candidates' learning experience are weighted and assessed appropriately.

The Areas of Study draw together the different tasks and units, but the assessment objectives will clearly link to specific tasks.

### AoS 1: The Principles and Practice of Music Technology

This AoS deals primarily with the use of appropriate music technology equipment and the knowledge and skills required to achieve professional sounding, musical results when using this equipment.

All the practical skills needed to successfully complete the practical tasks for Units 1 and 3 should be taught within the context of this AoS. In addition, the knowledge of these skills will be examined in Units 2 and 4 (including a further practical task in Unit 4).

The skills and knowledge which should be covered in this AoS include:

- use of sequencing packages and associated data entry and editing skills
- mic techniques (including appropriate choice and placement)
- mixing and mastering techniques
- the creative use of technology in composing and arranging
- the theory necessary to understand why certain working methods are adopted in sequencing and recording.

## AoS 2: Popular Music Styles since 1910

Students are required to study the development of popular music from the advent of Dixieland jazz through to the popular music of the present day. They are not expected to have an in-depth knowledge of every style or genre (section B deals with specific genres in more depth), but should have a basic understanding of chronology, important artists and landmark events. They should also be able to comment on popular music in terms of its melodic, harmonic, rhythmic and structural elements, identify features of its instrumentation and arrangement and the technological processes regarding recording and production.

The following is a non-comprehensive list of the styles and genres which may be covered for this AoS:

- Dixieland Jazz
- Swing
- Blues
- Gospel
- Rhythm and Blues
- Country and Western
- Rock and Roll
- Reggae
- Soul
- Heavy Metal
- Progressive Rock
- Punk Rock
- Indie/Alternative
- Rap/Hip Hop
- House/Acid House
- Garage
- Drum and Bass/Jungle
- Ambient
- Grunge
- Nu-Metal

### **AoS 3: The Development of Technology-based Music**

Although AoS 3 will not be examined in Units 1 and 2 (AS), it makes good educational sense for teachers to ground their students in how the equipment they are using developed. For example, modern sequencing packages boast a vast array of functionality allowing significant manipulation of MIDI and audio data. If students have a passing familiarity with analogue equivalents of what is going on in the digital domain they are more likely to understand what is happening to the music they are working with. So teaching them how time-based modulation effects such as chorus, flanger and phasing were originally achieved by combinations of changing the speed of reel to reel tape recorders, feeding back the original signal etc. will assist in their understanding of the application of effects that are now available by clicking in the effects box of a channel strip. Explaining a concept such as this in a practical context is an example of how the practical and theoretical aspects of music technology are inextricably linked. Teaching the concepts on a whiteboard will have much less impact than teaching them in a practical way.



## AS Unit 1: Music Technology Portfolio 1

Unit 1 is worth 70 per cent of the total AS marks (35 per cent of the full GCE). It consists of three practical tasks and the completion of a logbook, all of which are externally assessed. The Music Technology Portfolio is allocated 140 marks, of which 40 are allocated to each of the tasks and 20 for the completion of the logbook.

Students will produce a single audio CD entitled 'Music Technology Portfolio 1' containing the three completed tasks in the following order:

Track 1 — Task 1A: Sequenced Realised Performance

Track 2 — Task 1B: Multi-track Recording

Track 3 — Task 1C: Creative Sequenced Arrangement

The CD must be a finalised CDR suitable for playback in standard consumer CD players. CDRWs are not an acceptable format, nor are CDs containing just the MIDI files or proprietary program files. MDs are no longer an acceptable format for submissions. Both the CD and case/cover must be clearly labeled including the following information:

- 1 Subject and Unit (AS Music Technology: Unit 1)
- 2 Month and year of submission
- 3 Centre Name
- 4 Centre Number
- 5 Candidate Name
- 6 Candidate Number

There should be no announcements preceding the work on the CD.

It is the responsibility of the student to ensure that the quality of the audio on the final CD is of a suitably high standard as befits submission for this subject. It is the responsibility of the centre to ensure that the CD is playable in standard consumer CD players. CDs should be packaged appropriately to ensure that they reach the examiner in good working order. Slim jewel cases of crack-resistant flexible plastic are ideal, but any method of packaging which will ensure safe transit of students' work is acceptable. CDs should not just be wrapped up in clear plastic wallets as the CDs may well become damaged in transit.

Students will submit a completed logbook along with the CD highlighting particular aspects of their work including details of techniques they have used when undertaking the tasks and the equipment they have used.

It is advised that students also create a separate data CD containing their sequencing data files (for Task 1A) in the form of a MIDI file and also in the proprietary format of the sequencing package used. The CD must have the same information written/printed on it as the audio CD and must also be clearly labelled 'Data disc'. This CD must be retained by the centre and be available on request. It must not be disposed of until after results are made available.

## Task 1A: Sequenced Realised Performance

One of the factors which has the most impact on the quality of sequences is the choice of stimulus material. In the new specification, Edexcel has removed the responsibility for the choice of stimulus from the candidate. As such, there is no longer a set of selection criteria which the teacher needs to apply; in September each year a stimulus will be provided by Edexcel. The Sample Assessment Materials (SAMs) the stimulus given as an example is 'Money Money Money' by Abba. Please refer to *Appendix 1*.

Edexcel will not supply a recording of the stimulus; centres are expected to provide sufficient copies of the audio for their students. If there are multiple versions of the stimulus track available (for example, an album version, radio edit and a live version) Edexcel will clearly specify which is to be used as the stimulus for the sequence.

Candidates should study a range of popular music styles within AoS 2 as preparation for this task. It is good practice to cover a range of styles to get a feel for the mechanics of performance on different instruments and performance styles.

The task will be made available to centres in September, near the beginning of the teaching period of the AS course, so there will be sufficient teaching time to focus on the specific style chosen for the stimulus material.

### Teaching sequencing skills

Although the task for submission is made available in September, it would be unwise to begin sequencing the actual task straight away on receipt of the materials. There are a maximum of 20 hours available for the completion of the sequence and these should be carefully scheduled to ensure that candidates complete the data entry and still have plenty of time available for editing their work (see the later section titled 'Controlled Assessment' for further details of time limits and other aspects of the conditions in which students complete their practical work).

If it is possible within the centre, it would be good to introduce students to the concept of MIDI and sequencing long before they begin the AS course. Ideally, students should begin using Music Technology from the start of their KS3 experience, with demands gradually increasing in line with their increasing skill and knowledge levels in this area. Loop-based programmes are a good way into music technology for younger students, giving them instant results instead of having to program their own drum loops and bass lines etc. They might then move onto simple pattern-based sequencers, concentrating on programming short loops which they can then import into the loop-based software they are already familiar with. By the time they reach GCSE level, students should have some experience of using one of the more popular MIDI and Audio sequencing packages such as Cubase, Sonar or Logic. They then have the option of taking the Music Technology route through Edexcel GCSE Music where they are given an opportunity to sequence a track as part of their performance coursework. This element of the GCSE course is designed to naturally lead on to GCE Music Technology.

Commercial and educational software is readily available for users of all levels of sophistication, from the youngest users to high-end professional applications and to suit most budgets. There is an



increasing range of high quality shareware and freeware available written by enthusiasts, but these should always be used with care and with the blessing of the centre's central IT department.

There is no set restriction on which software may be used for the completion of Task 1A. However, students will be significantly disadvantaged if they are not able to access a full range of facilities with which to edit their pitch, rhythm and controller data. It is possible to use a range of different software packages for different stages of the task as long as all the work is the unaided work of the candidate. No credit will be given for any material which is not the student's own. This includes the use of pre-programmed loops (unless specifically stated otherwise on the documentation accompanying the task), any automatic facilities or plugins which 'humanise' a previously mechanical sequence or any other facility which juxtaposes an automatic or pre-programmed algorithm on the candidate's work to make it sound more polished than it actually is.

Any sequenced track should stand on its own as a musically satisfying performance. Some styles will automatically lend themselves more to sounding realistic when sequenced than others, but the underlying principal must always be to try and create a satisfying piece of music. A musically satisfying performance will be accurate and will interpret the music appropriately, mimicking how a live performer might interpret the piece. This is achieved through the process of data input and post-input editing.

## Data input

For best results, students should try to play in as much of the music as possible using a MIDI instrument such as a MIDI keyboard/guitar/wind controller/drumkit. The most natural sounding phrasing is captured by live performance. To achieve this, students will need to develop some playing ability on their MIDI instrument of choice. Even if a student has limited keyboard ability, it is still possible to learn short 2–4 bar phrases and play them in at a slower tempo, later speeding the song up to tempo again.

When playing phrases in at half speed, students should be made aware that staccato notes will sound unnaturally short when played at full tempo unless due care is taken.

However, it is not a specification requirement that candidates physically play the parts in, so they may input data using a mouse if they wish. Some programmes have various facilities to allow step-time input of data allowing various degrees of control over aspects such as note length and velocity. Use of step-time input facilities is acceptable as a method of data entry.

Students will have a skeleton score of the important parts they are to sequence for the task. Before they begin copying and pasting the parts they should check for accuracy and edit as appropriate. Individual note lengths, start times and velocities should be edited before copying and pasting to avoid unnecessary work later on. The accuracy of data input should be checked against the score AND the audio — this task focuses on recreating the sound of the audio stimulus, with the score as a guide.

Rests, staccato markings, ties and accents should all be observed as written in the score, but should be checked against the audio to hear exactly how they should sound; rests may not be fully observed in the recording or accents will be given different levels of emphasis, despite seeming identical in the score. It should be remembered that a score is a snapshot of a piece of music and, by necessity, quantises all aspects of the music in order to be legible.

All parts audible in the stimulus should be input. If work is submitted with missing parts it will attract a proportionate penalty.

The structure of the sequence should be identical to that given in the skeleton score (which will follow the audio as closely as possible). No sections should be omitted or repeated.

This is not an arrangement task — students should attempt to recreate the stimulus in as much detail as possible.

Care should be taken that any transpositions (including octaves) are taken into account when students are entering data from the skeleton score.

## Editing

A good performer will always interpret the music they play, adding slight dynamic gradations where none are specifically marked, interpreting the dynamics in a musical rather than exact fashion, adding nuances of timing and phrasing which cannot be accurately notated and giving the performance a sense of style using a combination of many subtle elements within the performance. A sequence must attempt to recreate this within the realms of the MIDI sequencer. If the student has taken great care with the initial data entry, practicing each phrase and carefully observing the phrasing of the part, editing will take a lot less time than for the student who has input all the notes using a mouse.

As a general rule, students should take at least the same amount of time editing their sequence as they did inputting the notes.

It is possible for candidates to achieve full marks for timbral choice without having access to the best quality timbres; the mark scheme emphasises the appropriateness in the choice of timbre and subsequent editing to make it sit well in the overall mix, or to reflect a particular aspect of the timbre present in the stimulus (eg changing the rotary speed of a Hammond organ sound). Conversely, it is possible for candidates who have access to high quality sounds to score 1 or 2 marks out of the 4 available for choice of timbre; the best quality saxophone sound available will still be inappropriate if the stimulus demanded an oboe. Better quality timbres may have a beneficial impact on students' motivation, but the emphasis in the mark scheme is on the choice and appropriate editing of the timbres available.

There has always been some debate over the use of expression (CC11) to create dynamic contrast in individual parts instead of main channel volume (CC7). In general, CC7 is used to balance the overall volume of a part in the full mix relative to the other parts and CC11 is used to create dynamic contrasts within that part. This should not be viewed as a hard and fast rule. Some students will struggle to see the value in using two controllers to do what they see as one job. It is important that students understand the difference between the two controllers and their use in the professional world of backing track production, thus they should be introduced to the conventional use of both controllers. However it is the final audible result that the examiner is interested in so, if a student has achieved sonic perfection and not used CC11 in the sequence in any way, they can still achieve



full credit for balance and dynamics. The mixer view in several packages makes use of automation data which may or may not refer to controller changes. It is acceptable for students to program the automation data in the mixer view as a means to achieving appropriate balance and dynamic contrast instead of/as well as using the traditional MIDI controller method.

This highlights another reason for teaching basic sequencing skills before undertaking the actual task; students need to understand the use of different standard sequencing tools, processes and editing screens for their written examination, so they should have experience of using these in short tasks which have been set as an introduction to the course. They can then make educated decisions as to which tools, processes and editing screens they may need to achieve their goals in a fraction of the time it would take if they had to try out several methods of working during their directed time for the sequencing task. For example, a student may find it much easier to work with the mixer view and automation data as a means of inputting all dynamic contrast and adjusting balance, but another may find it much simpler to use the strip editor to draw in the appropriate controller values.

Balance and pan are not independent of each other, hence they are jointly credited in Criterion 2: Choice of Timbre and Mix. Placing parts in the stereo field will have an impact on their apparent clarity in the mix, so they may or may not need additional adjustments to their overall volume levels. Both of these aspects should therefore be edited in conjunction with one another. It is probably a good idea to add reverb at the same time — if a part has a lot of reverb it will sound further back in the mix, so this will have an impact on its overall volume setting.

To gain full credit for dynamics, students must shape each part appropriately in addition to the overall dynamic contrasts demanded by the music. Some parts in the stimulus may not need shaping over the duration of a note in order to sound musical, but others will, particularly lead parts. Care should be taken not to go to extremes in dynamic shaping in order to draw the examiner's ear to the fact that the student has indeed paid attention to them. All dynamic editing should be musically appropriate (therefore unlikely to use extreme settings) and should mirror the stimulus insofar as is possible. If there is little or no shaping of dynamics (ie altering the dynamic over the duration of a note) then a candidate can score no more than 3 of the available 4 marks, even if all other aspects of dynamic contrast are faithfully observed.

Articulation should be entered as represented by the skeleton score, but tempered by the evidence available from the audio recording of the stimulus. The audio recording should always take precedence over what is marked in the score if there are any discrepancies. A score is always an approximation of a recording (or a performance is always an interpretation of a score) so it will never be 100 per cent faithful, no matter how careful the performer or transcriber. One example of this will be in the specific interpretation of dynamics, accents and staccato/legato markings. A performer will never perform all of the notes marked on a score identically in terms of weight or duration, so this should be reflected in the sequence either by performing it in as such or by editing the data to replicate this.

Phrasing is harder to define in specific terms because there are many contributing elements, from slight variations in tempo, duration and dynamics to the way certain groups of notes interact together, and even small variations in pitch. Phrases have an internal sense of direction or contour but also combine to create a sense of direction for a whole section of the piece. Hence it is best to try and capture a sense of phrasing by playing the phrase into the sequencer and later editing it for accuracy. If students use step-time entry methods then they should pay particular care to editing the phrases so that the notes within the phrase sound like they belong together and the end of one phrase sounds distinct from the beginning of another.

Criterion 4: Music Technology Skills is partially a new feature of the mark scheme. The style and creativity element is carried over from the criterion of the same name in the old mark scheme. It is a catch-all area for detail which has been programmed by the candidate but has not been credited elsewhere such as use of effects, tempo shaping and pitch bend. Tempo shaping and pitch bend may have some impact on articulation and phrasing as mentioned above, but they may also have an overall impact on the sequence, making it sound stylish as a whole. Care should be taken when entering tempo changes in order to avoid them sounding contrived. One method of achieving accurate and appropriate tempo changes is to import the audio into the sequencing program and alter the tempo over the duration of the piece so that the MIDI timing lines up with the audio timing. Apparent tempo changes at the end of phrases would then either be taken into account when programming the tempo information or should be achieved by changing the note lengths and start times instead of making further changes to the tempo. Style and creativity will also take into account stylistically programmed solos or fills and other elements which contribute to a stylish feel. Creativity in the mark scheme does not imply that the student should feel the need to add something which is not in the original stimulus; it may apply to a creative solution to a particular problem (as evidenced in the log) or to an appropriate fill.

Quality of recording is now taken into account as part of Criterion 4. Students will achieve high marks for this criterion if they present a recording which has no clipping or distortion, exhibits a good signal to noise ratio, is well balanced in the stereo field, contains no extraneous bleeps or clicks and starts and ends promptly without chopping the attack of the first note or reverb tail at the end. Other subtleties such as an element of post-production (in terms of overall EQ or compression) may be taken into account as appropriate. Poor quality recordings will attract poor marks in this criterion.

### **Is any software recommended/forbidden by Edexcel?**

Edexcel does not endorse any particular brand of software. It is recommended that sequencing software is used for sequencing tasks and notation software for notation tasks, but this is not a requirement. No specific programmes are forbidden. It is the responsibility of the centre to ensure that all work submitted is the student's own, so audio loops containing pre-recorded phrases or drum parts must not be used unless otherwise instructed by Edexcel. Audio samples of individual notes are acceptable, whether the samples have been created by the candidate or not. Virtual instruments and virtual modelling instruments are acceptable.

It is acceptable to add effects and processing in the audio domain after the sequence has been input and edited (for example adding a particularly suitable reverb from an effects unit, EQing a part or compressing the overall mix). It is not acceptable to record parts in the audio domain which are hard to program (for example an acoustic guitar part or a guitar solo).



## Task 1B: Multi-track Recording

Edexcel no longer offers the option of specialising in either sequencing or recording. Students are now expected to develop their skills in both disciplines by undertaking both a sequencing and a recording task.

In the previous specification it was a requirement that students present both an ambient (direct to stereo) recording and a multi-track recording concentrating on close-mic techniques and overdubbing. Students now have a maximum of 20 hours to produce one recording (see the later section titled 'Controlled Assessment' for further details of time limits and other aspects of the conditions in which students complete their practical work).

The stimulus may be freely chosen from a style relating to AoS 2: Popular Music Styles since 1910. Edexcel will not set a particular piece or selection of pieces for each year — the choice is left completely to the candidate/teacher. The stimulus must be a commercially available recording. The specification states that the stimulus may be a commercially available piece of music or an accepted rock, pop or jazz standard, but it is difficult to see how any piece could become an accepted standard without being commercially available as a recording. For the purposes of this specification, 'commercially available' means that a piece has been recorded by a professional band and made available to the general public for purchase through traditional channels (including iTunes and other recognised internet music sites). It should not be a piece which has been recorded by the student's own band. Posting music on the internet and making it available for download does not qualify it as being 'commercially available'. If a piece has been recorded by several artists/bands, it is acceptable for any of the versions to be used as the stimulus as long as they are commercially available. Teachers are expected to exercise their professional judgement on whether they consider a candidate's choice of stimulus to be commercially available or not and to contact Edexcel in any unusual or borderline circumstances.

The recording should last between two and four minutes. Any recordings which are under two minutes in duration may not present enough information to accurately assess the student's recording skills and may therefore disadvantage the student. A recording which lasts significantly less than two minutes or more than four minutes may be penalised. If a student wishes to record a piece which lasts longer than four minutes it may be appropriate to change the structure of the piece slightly to allow it to fall within the specified time allowance (for example a verse and chorus may be omitted if musically appropriate).

The recording does not have to be an exact copy of the stimulus material — there are no marks awarded for accuracy in this task — but it may be beneficial for students to have a target sound they are aiming to recreate eg trying to achieve a similar reverb effect on a vocal track. It is acceptable to alter the instrumentation of the original stimulus track in order to meet the minimum requirements of the task and to cater for the resources available in the centre, but this is not an arrangement task, so there are no marks allocated to arranging skills. The specification does not require a vocal track to be recorded, although students may find it beneficial to do so in order to present the material in its best light.

## Number of tracks

A minimum of 8 tracks should be used. Any recording which uses less than 8 tracks may be penalised. A maximum of 12 tracks is suggested, but this is not intended to be a limiting factor — a piece will not be penalised for using more than 12 tracks, but the intention is for students to concentrate on high-quality sound capture and careful editing/mixing rather than on trying to achieve an impressive sound just by recording many tracks.

The following table contains some examples of how track-count is calculated:

Description	Number of tracks
DI Keyboard (mono)	1
DI Keyboard (stereo)	2
4 mic drumkit (stereo overheads, kick, snare)	4
8 mic drumkit (stereo OHs, kick, snare, hihat, 3 toms)	8
8 mic drumkit (as above) + additional room mics (pair)	10
9 mic drumkit (as 8 mic + additional mic on bottom head of snare)	9
Close-miked electric guitar (1 mic near speaker cone)	1
Electric guitar cab with 3 mic setup (1 close, 1 room, 1 on back of cab)	3
Lead vocal (single take)	1
Comped lead vocal/guitar solo from multiple takes	1
Lead vocal (double-tracked)	2
Gang vocals around 1 mic	1
Three vocal parts, each recorded separately	3
Bass guitar DIed or mic on cab	1
Bass guitar recorded onto 1 track using a mic on the cab and a DI feed from the same take recorded onto a separate track	2
String section recorded using a stereo pair	2
Three violins and one cello all recorded separately	4
Three violins and one cello all recorded simultaneously, but using 1 mic on each instrument to allow for individual balancing	4

Summary of track count:

A mono recording = 1 track

A stereo recording = 2 tracks

A recording of several instruments using one mic = 1 track

A recording of several instruments using a stereo pair = 2 tracks

A recording of x instruments using one mic per instrument = x tracks

Multiple takes of an individual instrument for comping into 1 track = 1 track

Multiple takes of an individual instrument for double tracking = 2 tracks



## Close-mic and DI (direct input) techniques

It **is not** a requirement that DI techniques are used in Task 1B; a student will not be penalised if the final recording uses only close-mic techniques.

It **is** a requirement that microphones are used; a recording using only DI techniques will not be accepted.

Ambient mics may be used as appropriate in conjunction with close-mic techniques. The specification states that a recording should 'contain a balanced use of close-mic and direct-inject (DI) capture' — this should be applied as appropriate to the chosen stimulus, but students should feel free not to use DI techniques if they are not appropriate to the stimulus and they can use more distant mic techniques if the recording would be better served in this way.

At least 4 tracks (counted using the examples above) should be captured using microphones.

It is acceptable to use multi-mic setups for any given instrument (for example a mic on each head of a drum or 2 mics in different positions for recording an acoustic guitar) but this is not expected at AS level.

It is expected that students will make use of overdubbing techniques. Although it is possible to capture a live performance in one take, it is unlikely that there would be sufficient separation of each of the tracks to allow for the full range of marks to be achieved in each criterion.

## MIDI and automation

MIDI sequencing cannot be used in this task. Any keyboard/synth parts must be captured using either a microphone or DI techniques.

Mixing automation is permissible in this task. It is acceptable for the automation to involve an element of MIDI (for example MIDI controllers used to control levels of individual tracks) — it is the use of MIDI programming for instrumental parts which is forbidden in this task (only live performers may be used).

## Teaching recording skills

Students should learn the importance of microphone choice and placement from the beginning of the course. They need to understand the characteristics of the major microphone types and polar patterns and to what situation each mic is best suited. Although an ambient recording is no longer a requirement of the specification in terms of the student submitting a complete ambient recording, it will still be useful to teach ambient mic techniques as part of the process of teaching mic placement.

The quality of initial capture is fundamental in multi-track recording, so this should be emphasised throughout the course. Students should be discouraged from adopting a 'fix-it-in-the-mix' attitude, even when it is possible to alter so many aspects of an audio recording with the equipment available today. Students have a maximum of 20 hours in which to complete Task 1B so the more they get right from the outset, the less time they need to spend correcting errors at the editing/mixing stage. They should consider the time restrictions when they are choosing stimulus material and planning out how many tracks to use etc — the more complicated the task is, the more difficult it will be to complete to a high level in the time available.

There should be a complete absence of extraneous noise from the final mixdown. There should be no clipping or distortion present in the recording and students should take whatever steps are necessary to ensure that external sources of noise (such as traffic or lesson bells) do not encroach on their work.

The performance itself is not assessed, but if a performance is particularly poor it will not lend itself to easy recording or a good quality result. This should be borne in mind when students are choosing their stimulus material; there is no point in choosing a particular song if there is nobody available in the centre who can do justice to the vocal part.

## Processing

The appropriate use of signal processing and effects accounts for 45 per cent of the marks for this task. For AS level, candidates will be expected to use EQ to reduce problem frequencies and ensure that all the recorded tracks sit well in the frequency spectrum without any restriction or awkward resonances. It is not always necessary to adjust the EQ on each recorded track — time well spent with mic placement will diminish the need for additional EQ at the mixing stage — but there will be some adjustment of EQ required to accommodate multiple tracks which inhabit the same range of frequencies, especially around the often crowded 100–600Hz range. It is likely that if even one track significantly detracts from the recording because of deficiencies in EQ, a student will score 3/6 or less for this criterion (another reason for keeping the overall track count down and concentrating on quality rather than quantity).

## Management of dynamics

Part of this criterion examines students' ability to record tracks at an appropriate level, capturing a healthy signal without peaking or distorting. Leaving too much headroom will result in a poor signal to noise ratio, even with modern digital recording equipment. In some instances where very quiet tracks have been normalised it can lead to digital quantisation of the amplitude of the signal, giving a harsh 'bit-crushing' effect. The other side of dynamics management deals with compression and limiters.

Bass guitars, vocals and kick drums almost always require some form of compression. Other instruments will probably sit better in the mix with a little compression too. However, if parts are over-compressed they can lose sparkle and become quite lifeless.

## Effects

The most important effect to get right is reverb — it gives the impression of space and depth. Almost all the tracks will require some reverb or they will sound out of place or too immediate. At AS level candidates should understand how to use different types of reverb to achieve the desired effect; they might use ambience settings (settings with a high proportion of early reflections to reverb tail) to place a track in the mix without losing definition, or use a gated reverb for a snare drum instead of just using different quantities of a generic reverb to place all the tracks in the mix.



Where other effects are used they should be used appropriately, enhancing the recording. It is unlikely that a flanger or filter sweep applied to the whole mix will be appropriate unless it is mimicking an effect used in the stimulus track. Similarly, any extreme use of effects should only be where the stimulus track demands it or it is likely to attract a mark of 1/6 for uncontrolled use of effects processing. Delay can often be used tastefully to thicken tracks (especially vocals), add a slapback effect to a guitar sound or give an impression of stereo width as well as its more obvious use as an echo.

No effects and processors are forbidden unless otherwise stated in future documents — the use of any effect to enhance the sound quality of the recording is to be encouraged. All parameters of the effects and processors used should be chosen by the student and they should be able to explain their choices in the logbook if necessary.

## Mixing

As for sequencing, balance and the use of stereo field are interlinked (see the section in sequencing for more detailed comments). It is up to the student to find a good compromise between recording enough tracks to facilitate successful panning (without sounding contrived) and recording so many tracks that it is very difficult to blend them all without causing congestion in certain areas of the mix. Care should be taken to ensure enough time is left for the mixing stage so that all the effort put into the rest of the task is not wasted by rushing out a poor final mix.

## Equipment requirements

Edexcel does not state specific minimum requirements in order to complete this task, but it is to be understood that better recording equipment will make it easier to achieve professional-sounding results. Centres should ensure they have sufficient equipment in place to complete all the tasks before offering the course to potential students.

It is possible to achieve high quality results with relatively inexpensive equipment as the 'studio-in-a-box computer + highly specified I/O device' combination becomes increasingly powerful and popular. It is not appropriate to state the minimum specification required for a computer workstation as it would be out of date as soon as a new MIDI/audio sequencing package is released.

The best approach is to find a software package which suits your teaching style and experience and choose a computer platform which has been proven capable of running this package well. Supplement this with recording equipment which is all of a similar quality level (there is no point in putting a £1500 microphone through a £60 mixer mic preamp) and which suits your method of working (for example recording to a hardware multi-track device or to computer-based media) and ensure that any future expansion plans will not immediately render this equipment obsolete. Consider the number of students who are likely to be taking the course and provide enough workstations for them all to be in a position where you are able to supervise them adequately during the completion of their practical work.

## Task 1C: Creative Sequenced Arrangement

As with the sequenced performances, the choice of stimulus material has a major impact on the quality of the final arrangement. In the GCE 2008 specification, Edexcel takes the responsibility for the selection of the stimulus material instead of leaving it up to the candidate.

Edexcel will provide two stimuli in September at the beginning of the AS year. Candidates will choose one of the stimuli to develop into an arrangement lasting between two and three minutes. The arrangement must be developed in one of two prescribed styles (the styles will be supplied along with the stimuli) with the logbook providing an opportunity for candidates to describe how the arrangement has met this requirement.

Suitable stimulus material for arrangement should include ample opportunity for melodic, rhythmic, harmonic and structural development in addition to lending itself to various instrumental combinations, so the chosen stimuli will reflect this.

### Use of the stimulus material

Students must develop the stimulus material. Arrangements which consist of nothing more than an orchestration of the stimulus material will receive limited credit. Students should be aware of the conventions of their chosen genre and develop the stimulus material freely within these conventions. However, they should still leave enough of the stimulus intact so that it is occasionally recognisable. It is acceptable to compose new material to extend the stimulus, but this is an arrangement task as opposed to a composing task — the stimulus needs to be used throughout the piece, although it may be split into motivic fragments or used in creative and original ways in the accompaniment etc.

It is important that students stay within their chosen genre. The arrangement should remain stylistically coherent throughout. Students should not be afraid to embrace stylistic conventions at this stage of their musical development — it is important to build a unique musical personality at some point in an artist's musical development, but most students of this age are still learning the musical rules before they can convincingly break them.

Arrangements can be for any combination of instruments, but freedom of choice should be tempered by an understanding of the instrumentation appropriate to the chosen style. No instrumental combinations are forbidden. Electronic instruments are acceptable if appropriate to the style.

### Sound sources

This task is a creative **sequenced** arrangement, so the focus is on using a sequencer as a tool to create an arrangement. As such, the same rules apply to the selection of sound sources as is the case for Task 1A, but there is a little more flexibility as to the use of samples. In some styles, especially dance music, the use of drum loops and vocal samples is expected. However, credit cannot be given for any work which is not the candidate's own, so it would be better to attempt to program their own drum loops using appropriate sounds in order to gain credit in the rhythm criteria. As a general rule, the use of samples is permitted, but they should be used sparingly and with care, ensuring that the candidate has done enough to score in all the compulsory criteria as well as the chosen optional criteria. It is feasible to score marks for development if loops have been manipulated in some way rather than just placed into the arrangement in their original form. Any



pre-recorded samples and loops must be declared in the appropriate place in the logbook. A separate audio recording of the sample/loop is not required unless the candidate feels that it is impossible to describe it in the space provided or to separate out what is the candidate's own work from that which is pre-recorded. In this instance the sample/loop should be recorded as track 4 on the audio CD and clearly labelled.

Other than the use of samples/loops as described above, no audio should be used in this task.

It is not necessary to submit a score for this task. Candidates may wish to submit some written work/graphic scores/screenshots/partial scores to support their arrangements but there are no marks available for scoring the piece.

## Unit 1: Logbook

A copy of the logbook for unit 1 can be found in *Appendix 1* of the specification (pp85–95). There is one logbook for the whole unit — it is divided into sections as appropriate to each task.

Candidates must complete the logbook for submission along with the audio CD containing the mixdowns of Tasks 1A, 1B and 1C and the data CD containing the MIDI and program files for Task 1A.

The logbook provides space to list the equipment used to complete the tasks and also provides students with an opportunity to list details which may otherwise be hard to notice in a complex texture eg the fine detail of panning, frequencies boosted/cut, types of reverb etc. Students should take this opportunity to draw the examiner's attention to details of their recordings.

Questions 1–8 in the logbook do not attract any marks. Questions 9 and 10 refer to aspects of task 1C (Creative Sequenced Arrangement) and are worth 10 marks each (20 marks in total). It is worth emphasising to students that this is equivalent to half the maximum marks of the arrangement itself (arrangement = 40 marks), so they should give equal care and attention to the completion of these questions as they would to their practical tasks.

Question 9 draws students' attention to the optional criteria in the mark scheme. This gives them an excellent opportunity to point out specific areas they wish to bring to the examiner's notice. They should take care to focus on development of the areas listed rather than just describing the piece in words to accompany the audio. This applies to how they have developed their piece from its initial working drafts to the final version and also to how they have musically developed the thematic material.

Question 10 requires students to focus on the fingerprints of their chosen style. It may be useful to encourage students to complete the first part of this question before they begin doing any creative work on their arrangements; if they can identify the musical fingerprints of their chosen style before they commence creative work then they are more likely to be able to incorporate these into their pieces. To gain the highest available marks for this question, students need to be able to link these stylistic fingerprints to examples in their arrangement using high levels of detail in their justifications. Additional pages may be used if required.

The logbook does not have to be completed under controlled Assessment. It may be completed at any point during the course and does not contribute to the 60 hours maximum time allowance for the unit (see section on Controlled Assessment for more details).



## AS Unit 2: Listening and Analysing

Unit 2 is worth 30 per cent of the total AS marks (15 per cent of the full GCE). It is assessed through a 1 hour 45 minute examination paper set and marked by Edexcel. It is divided into two sections, each worth 40 marks (paper total = 80 marks).

Students will be provided with individual CDs so that they are able to listen to the musical extracts as many times as they wish within the time allowed.

Section A will consist of four questions drawing on AoS 1: The Principles and Practice of Music Technology and AoS 2: Popular Music Styles since 1910. The questions will relate to the extracts on the audio CD and will test students' aural perception of musical characteristics and features of the extracts including relevant technological aspects.

The style of questions may include multiple choice questions, short answer questions, extended response questions and questions including diagrams, illustrations, photographs, charts, grids, generic sequencer editing windows and standard musical notation.

For section A students are required to study the development of popular music from the advent of Dixieland jazz through to the popular music of the present day. They are not expected to have an in-depth knowledge of every style or genre (section B deals with specific genres in more depth), but should have a basic understanding of chronology, important artists and landmark events. They should also be able to comment on popular music in terms of its melodic, harmonic, rhythmic and structural elements, identify features of its instrumentation and arrangement and the technological processes regarding recording and production.

Section B will consist of two questions drawn from the two Special Focus styles for the year, testing similar elements to those listed above for section A, but in more depth and detail. Students will be expected to have an extended knowledge of these styles including the origins and development of the style and any factors which may have influenced this development. They should also have an understanding of how the styles have influenced later styles, genres and artists. Up to 20 of the available 40 marks for this section may focus on contextual or historical aspects of the Special Focus styles.

See page 46 of the specification for a list of the Special Focus styles for 2008–2013.

Where possible, students should use vocabulary appropriate to the subject in their responses to questions. In some cases responses will only gain credit if they use the appropriate specialist vocabulary. In others cases more marks will be available for correct responses with appropriate vocabulary than correct responses without.

Examination technique is always a factor in the level of success students experience in written examinations. As such it is vital that they have as much experience of the exam environment and exam-style questions as possible before they attempt the real thing.



## A2 Unit 3: Music Technology Portfolio 2

Unit 3 is worth 60 per cent of the total A2 marks (30 per cent of the full GCE). It consists of three practical tasks all of which are externally assessed. Candidates must also complete a logbook for submission along with the audio CD containing the final mixes of the three practical tasks, but it will not attract any marks. The Music Technology Portfolio is allocated 120 marks, of which 40 are allocated to each of the tasks.

Students will produce a single audio CD entitled 'Music Technology Portfolio 2' containing the three completed tasks in the following order:

Track 1 — Task 3A: Sequenced Integrated Performance

Track 2 — Task 3B: Multi-track Recording

Track 3 — Task 3C: Composing Using Music Technology

The CD must be a finalised CDR suitable for playback in standard consumer CD players. Both the CD and case/cover must be clearly labelled including the following information:

- 1 Subject and Unit (A2 Music Technology: Unit 3)
- 2 Month and year of submission
- 3 Centre Name
- 4 Centre Number
- 5 Candidate Name
- 6 Candidate Number

Students will submit a completed logbook along with the CD highlighting particular aspects of their work including details of techniques they have used when undertaking the tasks and the equipment they have used.

Students must also submit a separate data CD containing their sequencing data files (for Task 3A) in the form of a MIDI file and also in the proprietary format of the sequencing package used. The CD must have the same information written/printed on it as the audio CD and must also be clearly labelled 'Data Disc'.

### Task 3A: Sequenced Integrated Performance

In September at the start of the A2 year a choice of two stimuli will be provided by Edexcel. In the sample assessment materials the stimuli provided are 'It's a Sin' by Pet Shop Boys and 'There Must Be An Angel' by Eurythmics.

Edexcel will supply neither a recording nor a score of the stimuli; centres are expected to provide sufficient copies of the audio for their students. If there are multiple versions of the stimulus tracks available, Edexcel will clearly specify which is to be used as the stimulus for the task.

Task 3A is essentially the same as Task 1A in every detail except that a live vocal track must be integrated with the sequenced tracks. If desired, students may record another two audio tracks

in addition to the vocal track (for a maximum of three audio tracks). This may be useful in order to capture parts which are more difficult to sequence convincingly eg a strummed acoustic guitar pattern.

All aspects of timbral choice, sequencing skills, choice of software, and most elements of the mark scheme are identical to those for Task 1A. Differences between the mark schemes for Task 1A and 3A are listed below:

- **Balance/Pan:** There are additional references to how the audio sits within the mix as a whole. Candidates should ensure that the audio tracks are compressed and EQed appropriately so as not to sound divorced from the rest of the sonic palette of the recording. Applying reverb (and/or other effects) in the audio domain to all the tracks (including the sequenced tracks) is permissible and may be more appropriate in this task than in Task 1A in order to create a sense of unity across the mix.
- **Capture of Live Audio:** This criterion replaces 'Quality of Recording' from the Task 1A mark scheme. The weighting of the marks reflect the effort required for a successful end product. The extra marks have been diverted from the accuracy marks (now out of 6 instead of 8 for Task 1A). The descriptors for this criterion are an amalgam of several of the descriptors in the multi-track recording mark schemes.

## Task 3B: Multi-track Recording

The stimulus for this task may be freely chosen from a style relating to AoS 3: The Development of Technology-based Music. In practice this encompasses any music from AoS 2: Popular Music Styles since 1910 which have been professionally recorded since the process of recording automatically involves the use of and implicit development of technology-based music, but it also allows candidates to choose music from genres such as contemporary art music involving technology. The stimulus must be a commercially available recording, applying the same principles as those listed for Task 1B.

The recording should last between three and five minutes. A recording which lasts significantly less than three minutes, or more than five minutes may be penalised. It would be unfair to treat a piece lasting two minutes in the same way as one which has fulfilled the specification requirements. If a student wishes to record a piece which lasts longer than five minutes it may be appropriate to change the structure of the piece slightly to allow it to fall within the specified time allowance.

Students must capture a minimum of 12 tracks. A maximum of 24 tracks is suggested, but this is not intended to be a limiting factor — a piece will not be penalised for using more than 24 tracks, but students should consider quality before quantity. Track count is calculated in the same way as for Task 1B.

Mic placement should be dealt with in the same way as with Task 1B: DI capture is not a requirement but may be used if required, and more distant mic techniques may be appropriate (particularly in capturing certain percussion instruments), however a minimum of 8 tracks must be captured using microphones. Overdubbing is not mandatory, but students may be disadvantaged if they attempt to capture all tracks simultaneously.

MIDI sequencing cannot be used in this task. Any keyboard/synth parts must be captured using either a microphone or DI techniques.

Mixing automation is permissible in this task. It is acceptable for the automation to involve an element of MIDI (for example MIDI controllers used to control levels of individual tracks) — it is the use of MIDI programming for instrumental parts which is forbidden in this task (only live performers may be used).

The mark schemes for Tasks 1B and 3B are identical, but at A2 level candidates will be expected to display a higher level of sophistication in their use of EQ, effects and processors.

## Topic choice

Students must choose one of the following topics:

- Topic A: Recording acoustic and/or orchestral instruments
- Topic B: Recording percussion instruments

The choice of stimulus material should take into account one of the listed topics.

Topic A requires students to record at least four acoustic and/or orchestral instruments. This means that four of the instruments captured must be acoustic rather than electronic/electric.

- An acoustic guitar would be classed as an acoustic instrument while an electric guitar would not.
- A piano would be classed as an acoustic instrument while an electronic keyboard or synth would not.
- Any of the instruments in a standard orchestra would be classed as being acoustic, including the percussion section.
- Vocals are not classed as acoustic instruments — in this context, the word 'instruments' does not refer to the voice as an instrument. Vocals may be recorded in addition to the four acoustic instruments, but they do not count towards the four instruments.

In summary, any instrument which requires electrical power to amplify it or produce its basic sound does not count as an acoustic instrument.

Topic B requires students to record at least four percussion instruments.

A drumkit counts as one instrument.

A pair of bongos counts as one instrument.

A pair of congas counts as one instrument.

A cabassa counts as one instrument.

Orchestral clash cymbals count as one instrument.

A marimba counts as one instrument.

Etc.

The four instruments required by topics A or B may be recorded in combination with any other voices or instruments — acoustic, electric/electronic or percussion.

Stimulus material may be arranged to meet the specification requirements, but this, as with Task 1B, is not an arranging task.

## Task 3C: Composing using Music Technology

Students are now required to submit one composition which is written in response to a brief set by Edexcel (from a choice of three). The composition briefs will be published in the September of the academic year of examination.

The briefs will require students to compose pieces along lines such as the following:

- a soundtrack/music for film or television
- electro-acoustic music with a specific theme
- popular song (with or without lyrics provided).

All briefs will have a specific time requirement (some may be more precise than others). This time requirement will override the specification requirement of three–four minutes, but will usually be around the three minute mark. Any compositions which are significantly longer or shorter than the specified requirement will be penalised under Criterion 1: Responding to Set Brief. Candidates will be disadvantaged in other criteria if their compositions are considerably too short or too long.

### Scores

No score is required to accompany the composition. Examiners will be instructed to assess the piece on the basis of the audio and any pertinent comments in the logbook. If candidates feel that they would gain from doing so, it is still acceptable to produce a score, commentary, screen shot etc. to accompany the audio, but it will not attract any additional marks in itself. Very experimental or unusual compositions would always benefit from an accompanying write-up to explain the compositional reasoning behind the piece.

### Sound sources

Any sound sources are acceptable for use in Task 3C. As for Task 1C, pre-recorded samples should be used with caution, but if they have been subjected to significant sonic manipulation, they will still attract credit for development. It is good practice to limit one's choice of source materials in order to allow for the selected material to realise its potential in a composition, so students should be advised to place limits on themselves in terms of their use of sound sources, tonality, number of parts, equipment used etc.

Task 3C is entitled 'Composing using Music Technology', so it is important that students do not write a piece for acoustic instruments only, failing to utilise technology in some way — even songs must allow for some manipulation of sounds or they will fail to score any marks in the criterion of the same name.



## Unit 3: Logbook

A copy of the logbook for Unit 3 can be found in Appendix 2 of the specification (pp97–108). There is one logbook for the whole unit — it is divided into sections as appropriate to each task.

Candidates must complete the logbook for submission along with the audio CD containing the mixdowns of Tasks 3A, 3B and 3C.

The logbook for Unit 3 does not attract any marks in itself, but it is a useful aid to draw the examiner's attention to specific points within the recordings. It is a specification requirement that the logbook is submitted along with the audio recordings. Work submitted without a logbook will not be marked.





## A2 Unit 4: Analysing and Producing

Unit 4 is worth 40 per cent of the total A2 marks (20 per cent of the full GCE). It is assessed through a 2-hour examination paper set and marked by Edexcel. It is divided into two sections, section A worth 62 marks and section B worth 18 marks (paper total = 80 marks). Please note that these marks are different to those printed in the specification, but are correct at the time of going to print. They reflect the marks as exemplified in the sample assessment materials for Unit 4.

Each student will be given an audio CD containing MIDI/audio files to be imported into music production software. Section A of the paper will consist of 4 questions and will instruct students to review the materials, commenting on musical elements and technological processes, identifying mistakes and discrepancies and correcting them. Section B will require candidates to produce a final stereo mix of the audio tracks to specific guidelines, incorporating elements of the questions they have already completed. Tasks may involve adding and editing MIDI data and may include vocal tracks. The final stereo mix will last approximately one minute.

Question 4 of section A will be a contextual question on some aspect of the development of music technology as pertinent to the audio on the CD provided. It will require an extended prose response with some of the marks attributed to the Quality of Written Communication (QWC).

As for Unit 2, it is essential that students gain as much experience of this type of question as possible before they are in examination conditions. Some students may prefer to answer question 4 either first or last instead of in the order suggested by the exam paper layout. It is entirely the prerogative of the student as to the order in which they attempt the questions (although they must attempt question 5 after they have completed questions 1–3), however they would be strongly advised to schedule a set amount of time for each question in order to complete the examination in the allotted time.

## Controlled assessment

All practical work must be completed under controlled assessment to help ensure the authenticity of the work.

Edexcel trusts teachers to guide students in the production of authentic work, ie work which is produced by students without unfair assistance from others, free of plagiarism etc. It is primarily the responsibility of teachers to ensure that all work submitted by its students is authentic.

Controlled Assessment apply to Units 1 and 3.

For Unit 1: Music Technology Portfolio 1, candidates have a maximum of 60 hours in which to complete Tasks 1A, 1B and 1C. The logbook may be completed outside of controlled assessment.

For Unit 3: Music Technology Portfolio 2, candidates have a maximum of 60 hours in which to complete Tasks 3A, 3B and 3C. The logbook may be completed outside of controlled assessment.

For both Units 1 and 3 the maximum time of 60 hours may be subdivided as appropriate for each of the tasks within the unit. The limit of 20 hours for each task as mentioned in both the specification and earlier in this document are given as a guideline for centres. It is felt that, as each task has an equal mark weighting it should receive an equal share of the available time for completion. However, it is feasible that one task may take 25 hours while the other two tasks take 15 hours each (a total of 55 hours for the unit). This is acceptable because in this instance the candidate has taken more than the recommended time for one task, but has not exceeded the maximum time limit of 60 hours for the unit it is the overall time for the unit which **must not** be exceeded. The recommended time limit of 20 hours for any one task within the unit may be exceeded as long as in doing so the candidate does not exceed the maximum time limit of 60 hours for the unit. It is not compulsory for candidates to use the full time allocation if they do not require it.

For all the practical tasks there is a distinction made between **research and preparation** and **writing**.

### Writing

Any evidence of work which will be sent to the examiner is classed as writing.

Tasks 1A and 3A: Any data input, editing, sound capture (for Task 3A), processing, mixing and mastering which will form part of the final mix is classed as 'writing'.

Tasks 1B and 3B: Any sound capture, editing, processing, mixing and mastering which will form part of the final mix is classed as 'writing'.

Tasks 1C and 3C: Any material captured in any form (on paper or recorded on any media) which will form part of the final evidence submitted to the examiner is classed as 'writing'.

All writing must be completed within the 60 hours maximum for the unit. Teachers are advised to keep a written record to ensure that each student's 'writing time' has not been exceeded.

Writing time will take place inside the centre either in timetabled lessons or outside them, as most convenient to all concerned. It must be under supervision by a teacher (not necessarily the music or music technology teacher) or a technician.

The time required to transfer final mixes to CD is in addition to writing time — it is not part of the 60 hours (unless candidates are mixing directly to CD).

Time taken to rectify technical problems is not included in the 60 hours writing time.

## Research and preparation

Any work which can be classed as research or preparation for the practical tasks may be completed outside of controlled Assessment. This means it can be completed at home or in the centre in the candidate's own time. There is no time limit to research and preparation.

Research and preparation is classed as any work done prior to that which is completed as part of the evidence to be submitted to the examiner.

Tasks 1A and 3A:

- Analysis of the stimulus and writing down or learning the parts from the audio
- Rehearsing the parts on a MIDI instrument
- Experimentation with timbres
- Learning sequencing techniques/experimenting with the equipment or software
- Experimentation with mic placement (Task 3A).

Tasks 1B and 3B:

- Choice of stimulus material
- Rehearsal of stimulus material with the musicians
- Experimentation with mic choice and placement
- Learning mic techniques and experimenting with equipment or software.

Tasks 1C and 3C:

- Choosing the stimulus/brief from the available options
- Experimenting with melodic/rhythmic/harmonic ideas
- Listening to other, related music
- Researching the range and capabilities of the chosen resources
- Working out rough drafts.

All the above is classed as research and preparation, the results of which can be brought into controlled assessment provided it is shown to the teacher first and is cleared for use by the teacher.



## Appendix 1

Sample Assessment Materials for Unit 1 and Unit 3

Paper Reference(s)

XXXX/XX

### Edexcel GCE

#### Music Technology

#### Advanced GCE

Unit 1: Creative Music Technology Portfolio

### Sample Assessment Material

Candidates must complete all **three** tasks, Task 1A, 1B and 1C.

The work submitted to Edexcel comprises a CD with three tracks, and the logbook and declaration document with Sections A and B completed.

**This question paper is a final draft version.**

**On accreditation of the specification this question paper will be subject to final copy editing and styling for publication to centres.**

#### Instructions to Candidates

Complete all THREE tasks.

Task 1A: Sequenced Realised Performance, Task 1B: Multi-track Recording and

Task 1C: Creative Sequenced Arrangement are worth 40 marks each. The logbook for these three tasks is worth 20 marks. The total mark for this unit is 140.

#### Instructions to Teachers

The complete portfolio, comprising Task 1A, 1B and 1C must be presented for assessment as stereo audio recordings on ONE CD, along with the logbook and declaration document with Sections A (Logbook) and Section B (Declaration form), completed.

Task 1A must be presented as Track 1, Task 1B as Track 2, and Task 1C as Track 3.

Centres are reminded that each candidate submission should be presented on a separate CD (**NOT** on MiniDisc™ or cassette tape) and this must be clearly labelled with centre number, candidate name and candidate number).

NXXXXXX

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## Task 1A: Sequenced Realised Performance

### Money Money Money (Abba)

Using the original Abba recording as your main stimulus you should make a sequenced realisation of this song.

A skeleton score has been included to assist you. However, you are reminded that this task is predominantly an aural task, and the original recording should be your main guide.

You are required to recreate a complete performance details as closely as possible to the original, but you may substitute instrumental timbre for the vocals.

**You should submit your completed performance as Track 1 on your Music Technology Portfolio 1 CD**

**(40 marks)**

# Money, Money, Money

Music and Lyrics by  
Benny Anderson and Björn Ulvaeus

**♩ = 120**  
**Intro**

Vocal

Electric Piano

Bass Guitar

Drum Kit

3

Vocal

E. Pno.

Bass

Dr.

6

**Am** **E/G#** **E** **Am**

**Verse**

Vocal

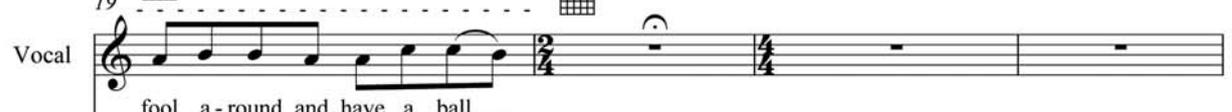
Dr.

work all night, I work all day, to pay the bills I have to pay, — ain't it sad... *sim.*

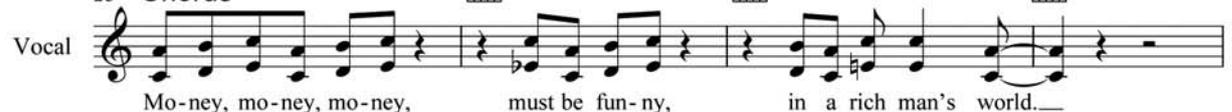
9  

12       **Bridge** 

16      *rit.* 

19   



23  **Chorus**    

27     

31       

35 **Am** **Dm** **E(b6)** **Am**

Vocal  
had a lit-tle mo-ney, It's a rich man's world.

3. Pno.

39  
It's a rich man's world. A

42 **Am** **E/G#** **E** **Am**

Vocal  
**Verse**  
man like that is hard to find, But I can't get him off my mind, ain't it sad. And

46 **E/G#** **E** **Am**

Vocal  
if he hap-pens to be free, I bet he would-n't fan-cy me, that's too bad. So

50 **Asus4** **Am** **E/A** **Am** **Bb/F** **F** **Fsus4** **F**

Vocal  
**Bridge**  
I must leave, I'll have to go. To Las Ve-gas or Mo-na-co. And

54 **Dm** **D#dim7**

Vocal  
win a for-tune in a game, My life would ne-ver be the same..

3. Pno.

58 **Am** **B** **Bdim** **Am**

Vocal  
**Chorus**  
Mo-ney, mo-ney, mo-ney, must be fun-ny, in a rich man's world.

62 **Am** **B** **Bdim** **Am**

Vocal  
Mo-ney, mo-ney, mo-ney, al-ways sun-ny, in a rich man's world. A-ha.

66

Vocal

A-ha. All the things I could do, If I had a lit-tle mo-ney,

71

Vocal

It's a rich man's world.

Pno.

74

Vocal

Mo ney, mo-ney, mo-ney, must be fun-ny, in a rich man's world.

78

Vocal

Mo ney, mo-ney, mo-ney, al ways sun-ny, in a rich man's world. A-ha.

82

Vocal

A-ha. All the things I could do, If I

86

Vocal

had a lit-tle mo-ney, It's a rich man's world.

Pno.

89

Vocal

It's a rich man's world.

Pno.

The musical score is written in a key signature of three flats (B-flat major or D-flat minor) and a 4/4 time signature. It consists of vocal lines and piano accompaniment. The piano part features a steady eighth-note accompaniment in the right hand and a bass line in the left hand. Chord diagrams for guitar are provided above the vocal lines, showing fingerings for various chords such as Dm, Em, Am, F7, E7, E(b6), C, Cdim, Bbm, Fm, Ebm, Gb7, and F7. The lyrics are written below the vocal lines, with some words hyphenated across measures.

## Task 1B: Multi-track Recording

Make a recording of a piece of music of your own choice in a style relating to Area of Study 2: Popular Music Styles since 1910

You must record a piece of music that is commercially available, or an accepted rock, pop or jazz standard.

Your recording should:

- last between two and four minutes
- use a minimum of eight and a maximum of 12 tracks
- contain a balanced use of close-mic and direct-inject (di) capture
- have a minimum of four tracks captured using microphones
- make use of overdub techniques
- use only live musicians, and contain no midi sequenced performance
- be a noise-free stereo production with use of appropriate effects.

**You should submit your completed recording as Track 2 on your Music Technology Portfolio 1 CD.**

**(40 marks)**

## Task 1C: Creative Sequenced Arrangement

You are required to create an original arrangement between two and three minutes in length based on one of the following stimuli and in one of the following styles:

Stimuli

- House of the Rising Sun (trad.)
- Life On Mars (Bowie)

A skeleton score for each stimuli has been included to assist you.

Style

- Ambient electronica (eg in the style of Royskopp/Air/Zero 7)
- Big Band Jazz/Swing (eg in the style of Glenn Miller/Tony Bennett/Jools Holland)

You are reminded that if you use any pre-recorded loops and samples they must be manipulated/ shaped/edited/processed in order to gain credit. All samples and loops must be royalty-free and not taken from any commercial recordings.

**You should submit your completed arrangement as track 3 on your Music Technology Portfolio 1 CD.**

**(40 marks)**

# House of the Rising Sun

Southern American Folksong

**Slowly and steadily**

The musical score is written in 4/4 time and consists of four staves of music. Each staff includes guitar chord diagrams above the notes. The lyrics are written below the notes. The first staff starts with a treble clef and a key signature of one flat (Bb). The tempo/mood is 'Slowly and steadily'. The song is identified as a 'Southern American Folksong'.

There is a house in New Or-leans they call the Ris - ing Sun. And it's

5 been the ruin of ma - ny a poor boy, and God, I know I'm one.

9 My mo - ther was a tai - lor, sewed my new blue

15 jeans, My fa - ther was a gam - blin' man down in New Or - leans.

# Life on Mars?

Words and Music by  
David Bowie

$\text{♩} = 124$

1    

It's a God aw-ful small af-fair to the girl with the mou - sy hair.

5   

But her mum-my is yel - ling 'no' and her dad-dy has told her to go.

9    

— But her friend is no-where to be seen, — now she walks through her sun - ken dream,

13   

to the seat with the clear - est view and she's hooked to the sil - ver screen.

17    

But the film is a sad - d'ning bore for she's lived it ten times or more.

21    

She could spit in the eyes of fools as they ask her to fo - cus on

25     

sai - lors fight-ing in the dance hall. Oh man, look at those cave men go,

30

Fm Cm7 E<sup>b</sup>m7 B<sup>b</sup> E<sup>b</sup>

it's the freak-i-est show. Take a look at the law - man beat-ing up the wrong guy,

35

Gm7 G<sup>b</sup>aug F Fm

Oh man, won-der if he'll ev - er know he's in the best sel-ling show.

39

Cm7 E<sup>b</sup>m7 Gm7 G<sup>b</sup>aug B<sup>b</sup>/F E<sup>b</sup>m7(b5)

Is there life on Mars?

Paper Reference(s)

XXXX/XX

## Edexcel GCE

### Music Technology

#### Advanced GCE

Unit 3: Music Technology Portfolio 2

### Sample Assessment Material

Candidates must complete all **three** tasks, Task 3A, 3B and 3C.

The work submitted to Edexcel comprises an audio CD with three tracks, and the completed logbook document.

**This question paper is a final draft version.**

**On accreditation of the specification this question paper will be subject to final copy editing and styling for publication to centres.**

#### **Instructions to Candidates**

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Complete all THREE tasks.

Task 3A: Sequenced Integrated Performance, Task 3B: Multi-track Recording and

Task 3C: Composing using Music Technology are worth 40 marks each. The total mark for this unit is 120.

#### **Instructions to Teachers**

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The complete portfolio, comprising Task 3A, 3B and 3C must be presented for assessment as stereo audio recordings on ONE audio CD, along with the completed Logbook document.

Task 3A must be presented as Track 1, Task 3B as Track 2, and Task 3C as Track 3.

Centres are reminded that each candidate submission should be presented on a separate audio CD (**not** on MiniDisc™ or cassette tape) and this must be clearly labelled with centre number, candidate name and candidate number).

**NXXXXXX**

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### Task 3A: Sequenced Integrated Performance

You are required to create a complete performance of one of the two songs listed below:

- **Pet Shop Boys:** It's a Sin
- **Eurhythmics:** There Must be an Angel

Using the original recording of your chosen song as your main stimulus, you should make a sequenced realisation, but should integrate into your performance a live audio recording of the vocals (and other tracks(s) as well if you wish).

You may wish to make a skeleton score or a lead sheet to assist you. This is not part of the assessment, and you are reminded that this task is predominantly an aural task, with the original recording as your main guide.

You are required to recreate a complete performance of the original song, including all instrumental parts heard on the original recording. You should try to match timbres and performance details as closely as possible.

**You should submit your completed performance as Track 1 on your Music Technology Portfolio 2 CD.**

**(40 marks)**

### Task 3B: Multi-track Recording

You are required to make a recording of a piece of music of your own choice relating to **either** Topic A: Recording Acoustic and/or Orchestral Instruments **or** Topic B: Recording Percussion Instruments.

You must record a piece of music that is commercially available.

Your recording should:

- last between three and five minutes
- use a minimum of 12 and a maximum of 24 tracks
- contain a balanced use of close-mic and direct-inject (DI) capture
- have a minimum of **eight** tracks captured using microphones
- make use of overdub techniques
- use only live musicians, and contain no MIDI sequenced performance
- involve a minimum of four acoustic and/or orchestral instruments if Topic A is offered, or a minimum of four percussion instruments if Topic B is offered
- be a noise-free stereo production with use of appropriate effects.

**You should submit your completed recording as Track 2 on your Music Technology Portfolio 2 CD.**

**(40 marks)**

## Task 3C: Composing using Music Technology

Choose **ONE** of the following briefs, and compose an original piece as instructed.

Music technology must be central to the piece that you compose. You may use a range of resources including amplified, electronic and virtual instruments, samples, MIDI, acoustic and orchestral instruments and voices.

Use a range of programming techniques to control, manipulate and edit the sounds you choose.

Create a high quality stereo recording of your composition that pays attention to all aspects of production — capture, balance, blend, EQ, dynamics, stereo field and FX.

**You should submit your completed composition as Track 3 on your Music Technology Portfolio 2 CD.**

**(40 marks)**

### 1. Brief 1 (Music for Film or Television): Rush Hour

A TV company is planning a three-minute documentary film about the UK rail network. The film will highlight a number of aspects of train travel during the rush hour. The director has commissioned you to provide music that will add momentum, pace and coherence to the edited images. The director has decided not to use spoken narration.

You are required to create between five and eight short samples (no more than 10 seconds each), such as train doors closing and station announcements. These should be used creatively in your composition as elements of melody, rhythm, harmony, texture and not solely as sound effects. You will require skilful editing to build on your potential (for example pitch-shift, time-stretch, reverse, truncate, crossfade etc). You must use at least six musical tracks or instrumental lines.

Your composition, which must be continuous, can be in any style. It must last **three** minutes, following the durations of the plan given below.

Section	Length (in seconds)	Images
1	30	Dawn — the sun rising over a sleepy city on a bright summer morning
2	20	Trains beginning their journey — the music reflecting the increasing speed of the images
3	40	A series of images of different types of stations, showing commuters buying tickets, descending escalators, and boarding trains
4	15	Overhead image, birds eye view of a busy track junction — high speed images of trains running along the track
5	20	Image of a train emerging from a tunnel at high speed, stopping at a station and then continuing on its journey
6	25	The worst aspects of the commuter rush hour — crowds, queues
7	30	A gradual subsiding of the busy rush hour until the train is seen to stop at the service depot.

## 2. Brief 2 (Electro-acoustic Music): Conflict

Conflicts around the world generate a wide range of emotional responses. You are invited to work with samples of actual speeches and news reports, incorporating them creatively in an original musical composition, and attempting to reflect your own feelings towards **one or more** of the following types of conflict:

- social
- economic
- political
- military.

Using music technology software, create eight short samples (no more than 10 seconds each) of words and/or phrases. Develop, explore and manipulate these samples to create new textures and timbres in an original composition lasting **three** minutes.

Your composition should be a soundscape, with at least **six** musical tracks or instrumental lines.

Your composition could take several forms, for example:

- a short overture entitled 'Conflicts' for a concert of electronic music
- introductory music to open a conference on street crime
- background music for a government podcast on global warming
- background/installation music to be played in the entrance of the United Nations building reflecting different nations and their politics
- a soundscape for an exhibition of press photographs of armed conflicts around the world.

## 3. Brief 3 (Popular Song): Song for a Rock Musical

The director of a new rock musical has asked you to write an original **three-minute** song in any style in which two characters declare their love for one another and their defiance of their families who oppose their love. You are required to use music technology to produce the sound of the band which must include amplified guitars and a selection of orchestral instruments of your own choice. The song must contain at least **six** musical tracks or instrumental lines.

You may tackle this brief in either of the following ways:

- write lyrics for your two singers, and record the song under studio conditions
- have no lyrics, and use **two** opposing instrumental timbres to represent the two characters, in music for a dance routine.

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We deliver 9.4 million exam scripts each year, with more than 90% of exam papers marked onscreen annually. As part of Pearson, Edexcel continues to invest in cutting-edge technology that has revolutionised the examinations and assessment system. This includes the ability to provide detailed performance data to teachers and students which helps to raise attainment.

We will inform centres of any changes to this issue. The latest issue can be found on the Edexcel website: [www.edexcel.org.uk](http://www.edexcel.org.uk).

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Welsh Assembly Government



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