Advanced Higher Coursework Assessment Task

Advanced Higher Music Technology

Project—production

Assessment task

This document provides information for teachers and lecturers about the coursework component of this course in terms of the skills, knowledge and understanding that are assessed. It **must** be read in conjunction with the course specification.

Valid from session 2023-24 and until further notice.

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Contents

Introduction

This document contains instructions for teachers and lecturers and instructions for candidates for the Advanced Higher Music Technology project—production. You must read it in conjunction with the course specification.

This project—production has 95 marks. This is 70% of the overall marks for the course assessment.

This is one of two course assessment components. The other component is a project—research.

The production project assesses the practical application of knowledge and skills from the course, and those gained through independent research. Candidates plan, implement, and evaluate a large-scale creative production using music technology.

This project—production has five stages:

Stage 1 'defining a project brief' has 5 marks.
Stage 2 'planning the production' has 10 marks.
Stage 3 'implementing the production' has 50 marks.
Stage 4 'mastering the production' has 20 marks.
Stage 5 'evaluating and reflecting' has 10 marks.

Teachers or lecturers should provide candidates with the 'instructions for candidates' in this document.

Instructions for teachers and lecturers

Task requirements

Candidates can choose their production project from any appropriate music technology context that provides sufficient scope to demonstrate all of the required skills, knowledge and understanding for the course assessment. This includes the new skills, techniques, and processes they have acquired through research. Suitable contexts could include:

- composing with VIs
- advanced Foley and sound design for film, animation or computer gaming
- creating large-scale multi-tracking of acoustic and/or electronic sound sources

Candidates should avoid contexts that do not provide sufficient scope for the production project at this level.

An example of a context that does not provide enough scope could be an 'audiobook', which would require significant adaptation to prove challenging enough.

Candidates must define their own brief. They must agree with you the context and scope for their production project, to ensure that it meets all the assessment task requirements. The context and scope must be appropriately challenging and allow candidates to demonstrate the required technical skills listed below (as appropriate to their context).

Project management skills

- producing an outline project specification
- defining timelines
- managing resources
- projecting outcomes and tracking progress
- evaluating project outcomes

Audio capture

- experimenting with microphone and capture techniques (for example, using multi-mic'ing and ambient or room mic'ing)
- selecting and making appropriate and justified use of at least two types of microphone and two polar patterns, with:
  - placement appropriate to the sound source
  - use of at least one stereo recording technique
- selecting and making appropriate and justified use of at least one source that requires a direct line input
- setting appropriate input gain and monitoring levels, with no distortion
- selecting and using virtual and/or MIDI instruments to create electronic sound and/or music where appropriate to the candidate's project
- successfully designing and safely constructing the signal path for multiple inputs
- overdubbing at least one track

Processing

- applying extensive creative and corrective equalisation that is appropriate to the material. The candidate must provide reasons and justify their choices in their progress record in at least six instances
- applying extensive dynamics processing, including the use of compression and/or side-chain compression and/or limiting, and/or noise gate. The candidate must provide reasons and justify their choices in their progress record in at least six instances
- extensive editing of tracks, including editing a minimum of three takes into a single take (comping) and accurate topping and tailing

Applying effects

- in at least six instances, extensive application of time domain and other effects, including at least three from:
  - delay, echo, reverb, chorus, phase, and flange. The candidate must give reasons and justify their choices in their progress record
- if appropriate to the candidate project, in at least six instances:
  - extensive manipulation of the controls of virtual and/or MIDI instruments (for example, ADSR envelopes, LFO, and filter). The candidate must give reasons and justify their choices in their progress record

Mixing and sequencing skills

- applying an extensive range of mixing techniques, including using volume, panning, automation, send and insert effects, and grouping/bussing to achieve a balanced and creative mix
- accurate synchronisation and/or sequencing in complex scenarios involving multiple takes and/or simultaneous events
- mixing down to an audio pre-master in appropriate file format(s)

Mastering

- reference recordings (commercial masters in the same genre or context, that the candidate used to compare with their own mastering)
- candidate analysis and critical listening commentary, including detailed comparisons with reference recordings and proposed mastering decisions
- a detailed description of the mastering chain, with detailed evidence of A-B'ing against reference recordings as the mastering session progresses
- detailed use of creative and corrective equalisation at an appropriate point or points in the mastering chain
- detailed use of compression at an appropriate point or points in the mastering chain, both as a level enhancing tool and to control dynamic range, including the use of multi-band compression where appropriate
- use of stereo imaging and enhancement tools (such as, valve and tape emulators, preamp modelling and saturation plug-ins), mid/side processing and dithering as appropriate
- topping and tailing and final DAW editing as appropriate

- limiting, finalising, and bouncing down to an audio master in an appropriate file format (and, for Foley or computer game productions, the relevant video or game sequence)

Candidates may link the research and production projects by context. They must not submit the evidence used in their research project as evidence for their production project, although they can use the same skills, techniques, and processes in both. Candidates must provide high-level conclusions in an executive summary of their research project.

If candidates do not link the research and production projects, they must provide details of the new skills, techniques, and processes acquired by their own research, which they intend to use in their production project.

Marking instructions

In line with SQA's normal practice, the following marking instructions for the Advanced Higher Music Technology production project are addressed to the marker. They will also be helpful for those preparing candidates for course assessment.

Candidates' evidence is submitted to SQA for external marking.

General marking principles

Always apply these general principles. Use them in conjunction with the detailed marking instructions, which identify the key features required in candidates' responses.

a Always use positive marking. This means candidates accumulate marks for the demonstration of relevant skills, knowledge and understanding; marks are not deducted for errors or omissions.

b For each of the stages, select the band descriptor that most closely describes the evidence presented. Once the best fit has been selected:
   - where the evidence almost matches the level above, award the higher mark from the range
   - where the evidence just meets the standard described, award the lower mark from the range
   - where the evidence completely matches the highest level band descriptor for any stage, award full marks for that stage

Detailed marking instructions

- For defining a project brief:
  - If a candidate does not provide a brief, award 0 marks for stage 1 — defining a project brief.
  - If a candidate has not provided an executive summary of the research project or detailed new skills, techniques, and processes acquired through research, award a maximum of 2 marks.
- For the planning:
  - If a candidate does not provide plans, award 0 marks for stage 2 — planning.
- For implementing the completed audio pre-master and the record of progress:
  - If a candidate does not provide an audio pre-master, award 0 marks for stages 3a, 3b, 3c, and 3d implementing.
  - If a candidate does not provide a record of progress, award appropriate marks from the lower bands. For example, for stage 3a, award a mark from the 3-4 range, as there is no evidence.
  - If the record of progress does not demonstrate knowledge and understanding of relevant technical concepts, technological developments and, if appropriate, relevant music concepts, styles and genres, award appropriate marks from the lower bands. For example, for stage 3a, candidates can only 'demonstrate a comprehensive knowledge of audio capture techniques' and access the full range of marks if they use relevant technical concepts in their log to describe and justify their choices.
  - If a candidate uses presets in stages 3b, 3c, 3d, and 4b, award appropriate marks from the lower bands. For example, for stage 3b, award a mark from the 5–6 range, as they are only 'demonstrating some knowledge of processing skills' if they are using presets.
- Award marks for mastering based on the completed audio master and the record of progress:
  - If a candidate does not provide an audio master, award 0 marks for stages 4a and 4b mastering.
  - If a candidate does not provide analysis and critical listening commentary, award 0 marks for stage 4a.
  - If a candidate does not provide reference recordings, award 0 marks for stage 4a.
  - If a candidate's analysis and critical listening commentary for stage 4a and the record of progress for stage 4b does not demonstrate knowledge and understanding of relevant technical concepts, technological developments and, if appropriate, relevant music concepts, styles and genres, award appropriate marks from the lower bands. For example, for stage 4b, candidates can only 'demonstrate a comprehensive knowledge of mastering skills and technical awareness', and access the full range of marks if they use relevant technical concepts in their log to describe and justify their choices.
- Award marks for evaluating based on the evaluation report, which must relate to the audio master provided. If a candidate does not provide an audio master, award 0 marks for stage 5 — evaluating.

Detailed marking instructions

Stage 1: defining a project brief

The candidate must provide:

- a meaningful and appropriately demanding project brief. They must draw on the music technology skills and knowledge they developed through the course, and when carrying out their own research.
- details of the new skills, techniques, and processes they intend to use in the production:
  - If a candidate has linked their research and production projects by context, they must provide an executive summary of their research as part of the project brief. Candidates must give details of the skills, techniques, and processes they acquired and their high-level conclusions.
  - If a candidate does not link their research and production projects by context, they must give details in their project brief of the new skills, techniques, and processes they will use in the production project.

Criteria for stage 1	Mark
Fully informative, detailed, and complete project brief	5
Informative and complete project brief	4
A project brief that is mostly complete and appropriate, but lacking in detail in some areas	3
Inconsistent or incomplete project brief	2
Little evidence of project brief	1
No evidence of project brief	0

Additional guidance

To award high marks, the candidate should provide a complete, detailed, and informative brief that includes a summary of the new skills, techniques, and processes they have acquired through research.

For example, a candidate could define a project brief of a large-scale multi-tracked recording in terms of the scope and size of the multi-track. They could:

- give details of the proposed instrumentation
- provide a short description of the skills and techniques they intend to apply
- give details of the skills and techniques they synthesised into their own practice when undertaking the research project, or through additional research and investigation

Stage 2: planning the production
The candidate must provide the evidence most relevant to their brief from the list below:

- a detailed performance plan for the musical elements of the production, if appropriate to their selected context
- a production plan that describes how each sound element will be recorded and/or created, including microphone types, pattern, and placements, and the reasons for choices
- a mixing plan, including intended use of effects, processes, and automation, and the reasons for choices
- a detailed sound design map containing each element of the soundtrack (for example, sound design, Foley, dialogue, and/or music), if appropriate to their selected context
- a detailed production plan itemising each piece of sound design, Foley or dialogue, including planning of microphone type, process and position, EQ, effects, processing, and automation, if appropriate, to their selected context
- an outline of the music required (in Foley and sound design projects, if appropriate)
- an updated record of progress, documenting the planning process for this stage

Criteria for stage 2	Mark range
Fully informative, detailed, and complete evidence of planning	9–10
Informative and complete evidence of planning	7–8
Evidence of planning that is mostly complete and appropriate, but lacking in detail in some areas	5–6
Inconsistent or incomplete evidence of planning	3–4
Little evidence of planning	1–2
No evidence of planning	0

Additional guidance
To award high marks, the candidate should include the items from the list above that are most relevant to their project brief. The candidate's planning should be highly detailed and provide them with structure and a list of project tasks to be completed.

For example, in a large-scale multi-tracked project, a candidate should provide a detailed recording plan that includes:

- a schedule of dates for intended sessions
- details of when particular instruments will be recorded
- justifications of the reasons why they are being recorded in this order

In this example, the candidate should indicate microphone types, polarity, and potential placements, which may change as the candidate experiments for the best results.

Stage 3a: implementing the production — audio capture
The candidate must provide evidence of:

- experimenting with microphone and capture techniques (for example, using multi-mic'ing and ambient or room mic'ing)
- selecting and making appropriate and justified use of at least two types of microphone and two polar patterns, with:
  - placement appropriate to the sound source
  - use of at least one stereo recording technique
- selecting and making appropriate and justified use of at least one source that requires a direct line input
- setting appropriate input gain and monitoring levels, with no distortion
- selecting and using virtual and/or MIDI instruments to create electronic sound and/or music where appropriate to the candidate's project
- successfully designing and safely constructing the signal path for multiple inputs
- overdubbing at least one track

Criteria for stage 3a	Mark range
Completed to a high standard, demonstrating a comprehensive knowledge of audio capture techniques, fully justified and documented in the progress record	9–10
Completed to a good standard, demonstrating a good knowledge of audio capture techniques, justified and documented in the progress record	7–8
Completed to a reasonable standard, demonstrating some knowledge of audio capture techniques, partially justified and documented in the progress record	5–6
Completed to an inconsistent standard or with little evidence in the progress record	3–4
Incomplete	1–2
No evidence of audio capture	0

Additional guidance
To award high marks for audio capture, the candidate should include a comprehensive range of audio capture techniques. For example:

- multi-mic'ing a drum kit **and**
- stereo mic'ing acoustic guitar **and**
- multiple close mics and distance mic's on guitar cabinets **and**
- DI'ing and mic'ing bass guitar cabinets **and**
- auditioning multiple microphones on singers and other sources, using appropriate microphone types, polar patterns, and placement

The candidate should give detailed justifications and reasons for using all of the above in their progress record.

In a Foley and/or sound design context, the candidate should perform accurately synchronised Foley to picture, rehearsing, and re-taking as required. They should explore more advanced stereo and/or multi-mic'ing capture techniques, if appropriate. Multiple passes are needed to capture each separate element of the sound design in more complex sequences.

Stage 3b: implementing the production — processing skills
The candidate must provide evidence of:

- applying extensive creative and corrective equalisation that is appropriate to the material. They must provide reasons and justify their choices in their progress record in at least six instances
- applying extensive dynamics processing, including the use of compression and/or side-chain compression and/or limiting, and/or noise gate. They must provide reasons and justify their choices in their progress record in at least six instances
- extensive editing of tracks, including editing a minimum of three takes into a single take (comping) and accurate topping and tailing

Candidates must not use presets when applying processes.

Criteria for stage 3b	Mark range
Completed to a high standard, demonstrating a comprehensive knowledge of processing skills and technical awareness, fully justified and documented in the progress record	9–10
Completed to a good standard, demonstrating a good knowledge of processing skills and technical awareness, justified and documented in the progress record	7–8
Completed to a reasonable standard, demonstrating some knowledge of processing skills and technical awareness, partially justified and documented in the progress record	5–6
Completed to an inconsistent standard or with little evidence in the progress record	3–4
Incomplete	1–2
No evidence of processing skills	0

Additional guidance
To award high marks for processing skills, the candidate should include multiple instances of equalisation and dynamics processors. The candidate should show awareness of plug-in gain staging and demonstrate their knowledge of typical settings for the sound source.

The candidate should provide evidence of detailed manipulation of a processor's controls and must not use presets. They should annotate in their progress record detailed justifications and reasons for their technical and creative decisions.

Stage 3c: implementing the production — applying effects
The candidate must provide evidence of:

- in at least six instances, extensive application of time domain and other effects, including at least three from:
  - delay, echo, reverb, chorus, phase, and flange. The candidate must give reasons and justify their choices in their progress record
- if appropriate to the candidate project, in at least six instances:
  - extensive manipulation of the controls of virtual and/or MIDI instruments (for example, ADSR envelopes, LFO, and filter). The candidate must give reasons and justify their choices in their progress record

Candidates must not use presets when applying time domain and other effects.

Criteria for stage 3c	Mark range
Completed to a high standard, demonstrating a comprehensive knowledge of effects, fully justified and documented in the progress record	9–10
Completed to a good standard, demonstrating a good knowledge of effects, justified and documented in the progress record	7–8
Completed to a reasonable standard, demonstrating some knowledge of effects, partially justified and documented in the progress record	5–6
Completed to an inconsistent standard or with little evidence in the progress record	3–4
Incomplete	1–2
No evidence of applying effects	0

Additional guidance
To award high marks for applying effects, the candidate should include multiple instances of effects, both as inserts and sends. The candidate should show awareness of plug-in gain staging and demonstrate their knowledge of typical settings for the sound source. They should demonstrate detailed manipulation of an effect's controls. The candidate should annotate in their progress record detailed justifications and reasons for their technical and creative decisions.

Stage 3d: implementing the production — mixing and sequencing skills
The candidate must provide evidence of:

- reference recordings (commercial mixes in the same genre or context they used to compare with their own mixing)
- applying an extensive range of mixing techniques, including using volume, panning, automation, send and insert effects, and grouping/bussing to achieve a balanced and creative mix
- accurate synchronisation and/or sequencing in complex scenarios involving multiple takes and/or simultaneous events
- mixing down to an audio pre-master in appropriate file format(s)

Candidates must not use presets when applying send and insert effects.

Criteria for stage 3d	Mark range
Completed to a high standard, demonstrating a comprehensive knowledge of mixing and sequencing skills and technical awareness, fully justified and documented in the progress record	9–10
Completed to a good standard, demonstrating a good knowledge of mixing and sequencing skills and technical awareness, justified and documented in the progress record	7–8
Completed to a reasonable standard, demonstrating some knowledge of mixing and sequencing skills and technical awareness, partially justified and documented in the progress record	5–6
Completed to an inconsistent standard or with little evidence in the progress record	3–4
Incomplete	1–2
No evidence of mixing and sequencing skills	0

Additional guidance
To award high marks for mixing and sequencing skills, the candidate should include extensive use of the mixing techniques listed above, ensuring that channel and master fader gain staging allows adequate headroom for the mastering stage.

For example, a candidate could use grouping/bussing of drum mic tracks. Extensive automation of volume, panning, and individual plug-in parameters could also be used.

The candidate should annotate in their progress record evidence of mixing and sequencing skills and techniques, and give detailed justifications and reasons for technical and creative decisions.

Stage 3e: implementing the production — creative and appropriate use of sound and/or music

Criteria for stage 3e	Mark range
Implementation includes significant creative use of appropriate sounds and/or music, and fully justified and documented in the progress record	9–10
Implementation includes wide-ranging creative use of appropriate sounds and/or music, justified and documented in the progress record	7–8
Implementation includes some creative use of appropriate sounds and/or music, and partially justified and documented in the progress record	5–6
Implementation includes inconsistent creative use of appropriate sounds and/or music, and with little evidence in the progress record	3–4
Implementation shows little evidence of appropriate choices of sound and/or music or with no evidence in the progress record	1–2
No evidence of creative and appropriate use of appropriate sounds and/or music	0

Additional guidance
To award high marks for creative and appropriate use of sound and/or music, the candidate should include significant creative use of effects, techniques, and processes.

For example, in Foley and/or sound design, the candidate should produce their own sound effects creatively. They should layer sounds to achieve the final effect, and avoid using pre-existing effects. The candidate should make significant use of reverbs and automated equalisation to evoke a sense of distance or space that is appropriate to the visual content.

In multi-track projects, the candidate could use different effects settings in different parts of production. For example, short delays and small room reverbs in a verse section, then longer delays and larger reverbs in chorus sections.

Stage 4a: mastering the production — analysis and critical listening skills
The candidate must provide evidence of:

- reference recordings (commercial masters in the same genre or context, that the candidate used to compare with their own mastering)
- candidate analysis and critical listening commentary, including detailed comparisons with reference recordings and proposed mastering decisions

Criteria for stage 4a	Mark range
Completed to a high standard, demonstrating highly developed listening and analysis skills, fully documented in the progress record	9-10
Completed to a good standard, demonstrating well developed listening and analysis skills, and documented in the progress record	7–8
Completed to a reasonable standard, demonstrating some development of listening and analysis skills and partially documented in the progress record	5–6
Completed to an inconsistent standard or with little evidence in the progress record	3–4
Incomplete	1–2
No evidence of analysis and critical listening skills	0

Additional guidance
To award high marks for analysis and critical listening skills, the candidate should include extensive critical evaluation of their pre-mastered production against reference recordings. They should give details of their comparative analysis of equalisation curves, dynamic range and/or loudness, stereo image, automation and mixing techniques, and mid/side balance.

Stage 4b: mastering the production — finalising and mastering techniques
The candidate must provide:

- a detailed description of the mastering chain, with detailed evidence of A-B'ing against reference recordings as the mastering session progresses
- detailed use of creative and corrective equalisation at an appropriate point or points in the mastering chain
- detailed use of compression at an appropriate point or points in the mastering chain, both as a level enhancing tool and to control dynamic range, including the use of multi-band compression, where appropriate
- use of stereo imaging and enhancement tools (such as valve and tape emulators, preamp modelling and saturation plug-ins), mid/side processing and dithering as appropriate
- topping and tailing and final DAW editing as appropriate
- limiting, finalising, and bouncing down to an audio master in an appropriate file format (and, for Foley or computer game productions, the relevant video or game sequence)

Candidates must not use presets in their mastering chain.

Criteria for stage 4b	Mark range
Completed to a high standard, demonstrating a comprehensive knowledge of mastering skills and technical awareness, fully justified and documented in the progress record	9-10
Completed to a good standard, demonstrating knowledge of a range of mastering skills and technical awareness, justified and documented in the progress record	7–8
Completed to a reasonable standard, demonstrating some knowledge of mastering skills and technical awareness, partially justified and documented in the progress record	5–6
Completed to an inconsistent standard or with little evidence in the progress record	3–4
Incomplete	1–2
No evidence of mastering skills	0

Additional guidance
To award high marks for finalising and mastering techniques, the candidate should include detailed use of equalisation and dynamics processors, stereo image manipulation, mid/side processing, enhancement tools, and limiters in response to their analysis report.

The candidate should provide evidence of their own detailed manipulation of each processor's controls. They should annotate this in their progress record detailing justifications and reasons for their technical decisions.

Stage 5: evaluating and reflecting
The candidate report must include evaluation of:

- work that they have produced, and their experience of undertaking the production project
- their project brief
- planning
- recording and creating
- editing and processing
- mastering
- final mix, including:
  - justification of significant technical and creative decisions
- suggestions for improvements, and information about how these suggestions could be achieved, in both the development and production processes

Criteria for stage 5	Mark range
Evaluation report is consistent, detailed, and relevant, and with clear, valid evaluation against clearly stated criteria	9–10
Evaluation report is consistent and relevant, and with clear, reasoned evaluation	7–8
Evaluation report is mostly consistent and relevant, with some evaluative comments	5–6
Evaluation report is complete, but lacking in evaluative comments	3–4
Evaluation report is incomplete, unclear or inconsistent	1–2
No evidence of evaluation	0

Additional guidance
To award high marks, the candidate's evaluation report should be well-structured, consistent, detailed, and relevant, with clear and valid evaluations. The candidate should include an overarching critical reflection on the work they have produced and their experience of undertaking the production project. They must evaluate each stage and should describe the use of skills, techniques, and processes, using appropriate technical terminology. The candidate should give details of how they were used, what their intention was and whether this was successful or otherwise.

The candidate can evaluate as they progress through the project stages and clearly document this in their evaluation. They are encouraged to reflect on their practice, and they should document this in their evaluation.

Instructions for candidates

This assessment applies to the project—production for Advanced Higher Music Technology.

This project—production is worth 95 marks. This is 70% of the overall marks for the course assessment.

It assesses the following skills, knowledge and understanding:

- project management skills
- knowledge of music technology hardware
- knowledge of the features and functions of music technology software
- using music technology hardware and software to capture, manipulate, mix and master audio
- applying music technology in creative ways, informed by investigation and research
- evaluating and critically reflecting on own work and the work of others
- critical listening skills

This project—production has five stages:

Stage 1 'defining a project brief' has 5 marks.
Stage 2 'planning the production' has 10 marks.
Stage 3 'implementing the production' has 50 marks.
Stage 4 'mastering the production' has 20 marks.
Stage 5 'evaluating and reflecting' has 10 marks.

Your teacher or lecturer will let you know if there are any specific conditions for doing this assessment.

In this assessment, you have to plan, implement and evaluate a large-scale creative production using music technology. You can choose any appropriate context such as (but not limited to):

- composing with VIs
- advanced Foley and sound design for film, animation or computer gaming
- creating large-scale multi-tracking of acoustic and/or electronic sound sources

The context you choose must have sufficient scope to demonstrate all of the required skills, knowledge and understanding you have gained from the course; as well as the new skills, techniques, and processes you have gained through your own research.

You should avoid contexts that do not provide sufficient scope for the production project at this level. For example, an 'audiobook' would not give you enough scope, as this would require significant adaptation to prove challenging enough.

You may choose to link the research and production projects by context. If you do, you cannot submit the same evidence you have used in your research project for your

production project, although you may use the same skills, techniques, and processes in both projects. You must provide as part of your brief your high-level conclusions.
If you do not link your research and production projects, you must provide details of the new skills, techniques, and processes you intend to use in your production project.

Throughout the project, you must keep a detailed record of progress, such as an electronic log or diary.

You should update your record of progress after each stage. It should explain what you have done, why you have done it, reference all relevant sources, and include any evidence you have produced (printouts, sketches, photographs, and sound files).

After each stage, ask your teacher or lecturer to check your work.

Before you begin

You should discuss the project with your teacher or lecturer before you begin, to ensure that your production allows you to demonstrate all of the following technical skills.

Project management skills

- producing an outline project specification
- defining timelines
- managing resources
- projecting outcomes and tracking progress
- evaluating project outcomes

Audio capture

- experimenting with microphone and capture techniques (for example, using multi-mic'ing and ambient or room mic'ing)
- selecting and making appropriate and justified use of at least two types of microphone and two polar patterns, with:
  - placement appropriate to the sound source
  - use of at least one stereo recording technique
- selecting and making appropriate and justified use of at least one source that requires a direct line input
- setting appropriate input gain and monitoring levels, with no distortion
- selecting and using virtual and/or MIDI instruments to create electronic sound and/or music where appropriate to your project
- successfully designing and safely constructing the signal path for multiple inputs
- overdubbing at least one track

Processing

When applying processing skills you must not use presets and must provide evidence of:

- applying extensive creative and corrective equalisation appropriate to the material. You must provide reasons and justify your choices in your progress record in at least six instances
- applying extensive dynamics processing, including the use of compression, and/or side-chain compression, and/or limiting, and/or noise gate. You must provide reasons and justify your choices in your progress record in at least six instances
- extensive editing of tracks, including editing a minimum of three takes into a single take (comping), and accurate topping and tailing

Applying effects

When applying time domain and other effects, you must not use presets. You must provide evidence of:

- in at least six instances, extensive application of time domain and other effects, including at least three from:
  - delay, echo, reverb, chorus, phase, and flange. You must give reasons and justify your choices in your progress record
- if appropriate to your project, in at least six instances:
  - extensive manipulation of the controls of virtual and/or MIDI instruments (for example, ADSR envelopes, LFO, and filter). You must give reasons and justify your choices in your progress record

Mixing and sequencing skills

When applying send and insert effects, you must not use presets. You must provide evidence of:

- reference recordings (commercial mixes in the same genre or context you used to compare with your own mixing)
- applying an extensive range of mixing techniques, including using volume, panning, automation, send and insert effects, and grouping/bussing to achieve a balanced and creative mix
- accurate synchronisation and/or sequencing in complex scenarios involving multiple takes and/or simultaneous events
- mixing down to an audio pre-master in appropriate file format(s)

Mastering

When applying mastering skills you must not use presets. You must provide evidence of:

- reference recordings (commercial masters in the same genre or context, that you used to compare with your own mastering)
- your analysis and critical listening commentary, including detailed comparisons with reference recordings and proposed mastering decisions

- a detailed description of the mastering chain, with detailed evidence of A-B'ing against reference recordings as the mastering session progresses
- detailed use of creative and corrective equalisation at an appropriate point or points in the mastering chain
- detailed use of compression at an appropriate point or points in the mastering chain, both as a level enhancing tool and to control dynamic range, including the use of multi-band compression, where appropriate
- use of stereo imaging, enhancement tools (such as valve and tape emulators, pre-amp modelling and saturation plug-ins), mid/side processing and dithering as appropriate
- topping and tailing and final DAW editing as appropriate
- limiting, finalising, and bouncing down to an audio master in an appropriate file format (and, for Foley or computer game productions, the relevant video or game sequence)

If you are sure that your production allows you to demonstrate all of the above technical skills (as appropriate to your chosen context), and have confirmed this with your teacher or lecturer, you are ready to begin your project.

Stage 1: defining a project brief (5 marks)

You must produce the following:

- a meaningful and appropriately demanding project brief. You must draw on the music technology skills and knowledge you developed through the course, and when carrying out your own research
- details of the new skills, techniques, and processes you intend to use in the production:
  - if you have linked your research and production projects by context, you must provide an executive summary of your research as part of the project brief. You must give details of the skills, techniques, and processes you acquired and your high-level conclusions
  - if you have not linked your research and production projects by context, you must give details in your project brief of the new skills, techniques, and processes you will use in your production project

To achieve high marks for **stage 1,** you should provide a complete, detailed, and informative brief that includes a summary of the new skills, techniques, and processes you have gained through your research.

For example, you could define a project brief of a large-scale multi-tracked recording in terms of the scope and size of the multi-track. You could:

- give details of the proposed instrumentation
- provide a short description of the skills and techniques you intend to apply
- give details of the skills and techniques you synthesised into your own practice when undertaking the research project, or through your own additional research and investigation

Stage 2: planning the production (10 marks)

You must provide the evidence that is **most** relevant to your brief from the list below:

- a detailed performance plan for the musical elements of the production, if appropriate to your selected context
- a production plan that describes how you will record and/or create each sound element, including microphone types, pattern, and placements, and the reasons for your choices
- a mixing plan, including intended use of effects, processes, and automation, and the reasons for your choices
- a detailed sound design map containing each element of the soundtrack (for example sound design, Foley, dialogue, and/or music) if appropriate to your selected context
- a detailed production plan itemising each piece of sound design, Foley or dialogue, including planning of microphone type, process, and position, EQ, effects, processing and automation, if appropriate, to your selected context
- an outline of the music required (in Foley and sound design projects, if appropriate)
- an updated record of progress, documenting the planning process for this stage

To achieve high marks for **stage 2** you should include the items from the list above that are most relevant to your brief. Your planning should be highly detailed and provide you with structure and a list of project tasks to be completed.

For example, in a large-scale multi-tracked project, you should provide a detailed recording plan that includes:

- a schedule of dates for intended sessions
- details of when particular instruments will be recorded
- justifications of the reasons why they are being recorded in this order

In this example, you should indicate microphone types, polarity and potential placements, which may change as you experiment for the best results.

Stage 3: implementing the production (50 marks)

You must provide the following:

- reference recordings
- a completed creative production, bounced to an appropriate pre-mastered audio format (or video file format, with embedded audio)
- an updated record of progress, documenting and justifying the techniques used in the creative production

To achieve high marks for **stage 3a** (audio capture) you should include a comprehensive range of audio capture techniques. For example:

- multi-mic'ing a drum kit **and**
- stereo mic'ing acoustic guitar **and**
- multiple close mics and distance mics on guitar cabinets **and**
- DI'ing and mic'ing bass guitar cabinets **and**
- auditioning multiple microphones on singers and other sources, using appropriate microphone types, polar patterns, and placement

You should give detailed justifications and reasons for use for all of the above in your progress record.

For example, in a Foley and/or sound design context, you should perform accurately synchronised Foley to picture, rehearsing and re-taking as required. You should explore more advanced stereo and/or multi-mic'ing capture techniques, if appropriate. You need multiple passes to capture each separate element of the sound design in more complex sequences.

To achieve high marks for **stage 3b** (processing skills) you should include multiple instances of equalisation and dynamics processors. You should show an awareness of plug-in gain staging, and demonstrate your knowledge of typical settings for the sound source.

You should provide evidence of detailed manipulation of a processor's controls. You must not use presets. You should annotate in your progress record detailed justifications and reasons for your technical and creative decisions.

To achieve high marks for **stage 3c** (applying effects) you should include multiple instances of effects, both as inserts and sends. You should show an awareness of plug-in gain staging, and demonstrate your knowledge of typical settings for the sound source. You should demonstrate detailed manipulation of an effect's controls. You must not use presets. You should annotate in your progress record detailed justifications and reasons for your technical and creative decisions.

To achieve high marks for **stage 3d** (mixing and sequencing skills) you should include extensive use of mixing techniques, ensuring that channel and master fader gain staging allows adequate headroom for the mastering stage.

For example, you could use grouping/bussing of drum mic tracks. You could also use extensive automation of volume, panning, and individual plug-in parameters.

You should annotate in your progress record evidence of mixing and sequencing skills and techniques, and give detailed justifications and reasons for technical and creative decisions.

To achieve high marks for **stage 3e** (creative and appropriate use of sound and/or music) you should include significant creative use of effects, techniques, and processes.

For example, in Foley and/or sound design, you should produce your own sound effects creatively. You should layer sounds to achieve the final effect, and avoid using pre-existing effects. You should make significant use of reverbs and automated equalisation to evoke a sense of distance or space that is appropriate to the visual content.

In multi-track projects, you could use different effects settings in different parts of the production. For example, short delays and small room reverbs in a verse section, then longer delays and larger reverbs in chorus sections.

Stage 4: mastering the production (20 marks)

You must provide evidence of:

- reference recordings
- a mastered version of your production, bounced to an appropriate audio format (or video file format, with embedded audio)
- an updated record of progress, documenting your analysis and critical listening commentary and the techniques used during the mastering production

To achieve high marks for **stage 4a** (analysis and critical listening skills) you should include extensive critical evaluation of your pre-mastered production against reference recordings. You should give details of your comparative analysis of equalisation curves, dynamic range and/or loudness, stereo image, automation and mixing techniques, and mid/side balance.

To achieve high marks for **stage 4b** (finalising and mastering techniques), you should include detailed use of equalisation and dynamics processors, stereo image manipulation, mid/side processing, enhancement tools, and limiters in response to your analysis report.

You should provide evidence of your own detailed manipulation of each processor's controls. You must not use presets. You should annotate in your progress record detailed justifications and reasons for your technical decisions.

Stage 5: evaluating and reflecting (10 marks)

Your report must include a critical reflection on the work you have produced, and your experience of undertaking the production project and evaluate your:

- project brief
- planning
- recording and creating
- editing and processing
- mastering
- final mix, including:
  - justification for significant technical and creative decisions
- suggestions for improvements, and information about how these suggestions could be achieved, in both the development and production processes

To achieve high marks for **stage 5,** your evaluation report should be well structured, consistent, detailed and relevant, with clear and valid evaluations. You should include an overarching critical reflection on the work you have produced, and your experience of undertaking the production project. You must evaluate each stage and should describe the use of skills, techniques and processes, using appropriate technical terminology. You should give details of how you used them, what your intention was and whether this was successful or otherwise.

You can evaluate your work as you progress through the project stages, and clearly document this in your evaluation. You are encouraged to reflect on your practice, and you should document this in your evaluation.

Final checks

Check your work to make sure you have completed all stages of the project. The following evidence is required:

- your project brief
- details of the new skills, techniques and processes you used in the production or an executive summary of your research
- a formal plan for the project
- the completed audio pre-master (and, for Foley or computer game productions, the relevant video or game sequence)
- reference recordings used during the mixing stages
- the mastered audio (and, for Foley or computer game productions, the relevant video or games sequence)
- reference recordings used during the mastering stages
- a detailed record of progress
- a critical reflection and evaluation report

Let your teacher or lecturer know when you have completed the project.

Administrative information

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History of changes

Version	Description of change	Date
2.0	Research and projects re-introduced as separate components in session 2023-24.	August 2023

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