

Level 3 VRQ Qualifications in Music Technology and Sound Engineering (7503)

Assessment pack

Qualification title	Number	QCA ref.
Level 3 Diploma in Music Technology and Sound Engineering	7503-03	500/2141/2
Level 3 Diploma in Sound and Music Technology	7503-04	500/2151/5
Level 3 Diploma in Sound Engineering	7503-05	500/2080/8
Level 3 Certificate in Sound and Music Technology	7503-06	500/2097/3
Level 3 Certificate in Multitrack Recording and Microphone Techniques	7503-07	500/2146/1
Level 3 Certificate in Multitrack Recording and Composition	7503-08	500/2096/1
Level 3 Certificate in Surround Sound and Composition	7503-09	500/2140/0
Level 3 Certificate in Multitrack Recording and Automation	7503-10	500/2095/X
Level 3 Certificate in Surround Sound and Composition	7503-11	500/2150/3
Level 3 Certificate in Multitrack, recording and Automation	7503-12	500/2148/5
Level 3 Certificate in Software Sound Manipulation and Composition	7503-13	500/2147/3
Level 3 Certificate in Audio Electronics and Connectivity	7503-14	500/2094/8
Level 3 Certificate in Multitrack Recording and Mixing	7503-15	500/2145/X
Level 3 Certificate in Sound and Music Composition	7503-16	500/2149/7
Level 3 Certificate in Live Sound and Performance Technology	7503-17	500/2143/6
Level 3 Certificate in Surround Sound and Film	7503-18	500/2144/8
Level 3 Certificate in Sound Facility Design	7503-19	500/2142/4
Level 3 Diploma in Music Technology and Sound Production	7503-20	500/2081/X

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1 Qualification structure

Unit structure

This section provides information about the structure of the qualifications and unit combinations required for the qualifications. The following table lists all of the available units:

QCA unit reference	City & Guilds unit number	Unit title
L/501/1294	Unit 301	Professional development for music and sound industries
R/501/1295	Unit 302	Multitrack recording and mixing
Y/501/1296	Unit 303	Audio connectivity and interface techniques
D/501/1297	Unit 304	Audio mix automation and control surfaces
H/501/1298	Unit 305	Tape and tape-less editing
K/501/1299	Unit 306	Stereo microphone techniques
R/501/1300	Unit 307	Composition skills for music and sound industries
Y/501/1301	Unit 308	Software sound manipulation
D/501/1302	Unit 309	Surround sound film audio
H/501/1303	Unit 310	Live sound and performance technology
K/501/1304	Unit 311	Digital broadcast network media
M/501/1305	Unit 312	Audio mastering and restoration
T/501/1306	Unit 313	Sound studio facility design
A/501/1307	Unit 314	Advanced audio electronics

The qualification handbook available to download for free from the City & Guilds website www.cityandguilds.com .

Qualification structure

The structure of the qualifications

The following table details all qualifications together with unit combinations:

Qualification title	Number	GLH	Combination(s) of units
Level 3 Diploma in Music Technology and Sound Production	7503-20	1080	Four mandatory units 301-304, plus eight optional from 305-314, plus nine Level 2 units 201-223 (see Level 2 handbook)
Level 3 Diploma in Music Technology and Sound Engineering	7503-03	600	Four mandatory units 301-304, plus six optional from 305-314
Level 3 Diploma in Sound and Music Technology	7503-04	480	Four mandatory units 301-304, plus four optional from 305-314
Level 3 Diploma in Sound Engineering	7503-05	360	Five mandatory units 301-304, 306, plus one optional from 305 or 312
Level 3 Certificate in Sound and Music Technology	7503-06	280	Four mandatory units 301-304
Level 3 Certificate in Multitrack Recording and Microphone Techniques	7503-07	140	Two mandatory units 302 and 306
Level 3 Certificate in Multitrack Recording and Composition	7503-08	140	Two mandatory units 302 and 307
Level 3 Certificate in Surround Sound and Composition	7503-09	120	Two mandatory units 307 and 309
Level 3 Certificate in Multitrack Recording and Automation	7503-10	140	Two mandatory units 302 and 304
Level 3 Certificate in Digital Broadcast and Composition	7503-11	120	Two mandatory units 307 and 311
Level 3 Certificate in Audio Mastering, Restoration and Editing	7503-12	120	Two mandatory units 305 and 312
Level 3 Certificate in Software Sound Manipulation and Composition	7503-13	120	Two mandatory units 307 and 308
Level 3 Certificate in Audio Electronics and Connectivity	7503-14	110	Two mandatory units 303 and 314
Level 3 Certificate in Multitrack Recording and Mixing	7503-15	80	One mandatory unit 302
Level 3 Certificate in Sound and Music Composition	7503-16	60	One mandatory unit 307
Level 3 Certificate in Live Sound and Performance Technology	7503-17	60	One mandatory unit 310
Level 3 Certificate in Surround Sound and Film	7503-18	60	One mandatory unit 309
Level 3 Certificate in Sound Facility Design	7503-19	60	One mandatory unit 313

2 Guidance for assessors

Assignments

Each assignment is divided into a series of tasks. To achieve each unit, candidates need to achieve **all** the tasks.

Typically there will be a:

- task which requires candidates to demonstrate their subject knowledge
- task which requires candidates to demonstrate their practical skills
- task which requires candidates to demonstrate the occupational skills acquired.

All tasks are graded, and the grades are then aggregated to provide an overall grade for the assignment for the unit. Candidates must pass all tasks in the assignment.

Assignments can be completed in any order. There is no need for candidates to begin with unit 301 and then to work through the units in numerical order. Centres will be expected to organise the assignments in a logical order according to the requirements of the candidates and the course eg with regard to work experience placements, visits.

Research and report tasks

The research and report type activities in the assignment are **not** closed book tests. Within the overall time constraints set by the centre, they may be completed away from the centre, in the students' own time and at their own pace.

Introducing the assignment work to the students

It will be beneficial to take the candidates through what is required in the assignments and the way in which each part will be graded. Candidates should have an opportunity to familiarise themselves with the way the tasks are graded.

Candidates may refer to their tutors for guidance on parts of the assignment work though they should be aware that, especially for the exploratory tasks, the amount of guidance and support they are given may be reflected in the grade they are given.

Candidates should be able to negotiate extra time where they have a good reason for the request, but reliability and punctuality are watchwords of employment. Therefore, if the agreed deadline for the return of work is not met, without a valid reason, they must accept that they may fail or may earn no better than a Pass grade for their work, regardless of how good it is.

Guidance for assessors

Time constraints

The following time constraints should be applied to the assessment of this qualification:

- It is anticipated that an assignment should take no longer than **fifteen hours**, in total, to complete
- Centre staff should guide candidates to ensure excessive evidence gathering is avoided
- Centres finding that assignments are taking longer, should contact the external verifier for guidance
- The focus of report writing is for the candidate to demonstrate their knowledge of the subject, rather than an ability to write large quantities of text. For this reason some tasks show approximate word numbers. Candidates should be encouraged to provide high quality, succinct reports. Please note however that report length on its own should not form part of, or influence, grading judgements.

Timings for assignments

A submission schedule should be worked out by the centre, governed by the overall assessment plan for the course, to be negotiated between tutor/assessor and candidate. Practice may show that some candidates could be fast-tracked.

The relationship between course delivery, the handing out of assignments, and the deadlines for their return are matters for agreement between the tutors and the candidates locally.

Submission of assignment work

It is recommended that candidates be given an opportunity to submit a draft of their written work to their tutor/assessor, within an agreed timeframe, to gain feedback on whether they have done enough to achieve a pass or better for that assignment. Once the assignment has been formally submitted, however that is the work that will be formally graded. Please note however, that for tasks where the level of support from the centre is part of the grading criteria, this may prevent candidates achieving a higher grade. Candidates should also be informed of the results of missing the centre's submission deadline to focus their minds on the need for dependability, reliability ie a professional approach. Failure to submit on time, without a valid reason, could mean that candidates fail the assignment or cannot obtain better than a Pass grade.

Opportunities to repeat tasks within an assignment

Candidates who fail a task can repeat the task, at the centre's discretion, but **cannot** achieve higher than a Pass grade.

Guidance for assessors

Authenticity

Centres are reminded to check for authenticity of work where candidates may be using texts and the Internet to complete tasks.

Feedback

Assessors must provide feedback on every occasion that a skills observation takes place. A pro forma for feedback has been included in this assessment pack.

Candidate records of course work

Candidates should be encouraged to keep their work carefully in a portfolio. This may be an unfamiliar form of record keeping for many of them, but it is a good discipline which will benefit them when they progress in their learning and training. In addition, learning themes tend to recur in linked or higher levels of award and it may only be necessary for them to add a little to what they have already done to achieve the new standard.

Guidance for assessors

Overall grading of assignments

Each task will be awarded points. Some tasks are weighted greater than others, therefore carry a higher number of points. All points should be added together and overall grade determined, as in example below.

To combine the grades of **graded tasks**:

- assign a mark for each grade achieved
- add these together and divide by the number given to calculate the average, using the grid provided
- use the conversion chart to convert back to an overall grade

Example assignment mark sheet

Task	Evidence	Grade for task	Mark Pass (2 mark) Credit (4 marks) Distinction (6 marks)
A	Audio recording	Credit	4
B	Stereo recording	Distinction	6
Task	Evidence	Grade for task	Mark Pass (1 mark) Credit (2 marks) Distinction (3 marks)
C	Report	Pass	1
D	Table	Credit	2
=Total mark for all graded tasks			13
Divided by			÷ 6
=Average mark for tasks			2.166
Overall grade (see conversion chart)			Credit

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

3 Accreditation of prior learning/achievement

Some students may have previously followed a programme with a similar assessment regime, albeit at a lower level. It may be that previous work, especially research or 'finding out about' type tasks, could count, either wholly or in large part, towards the assignment work in **this** scheme.

However, the general rules for evaluating evidence (VACS) must still be observed, that is there is an obvious link between what was produced earlier and the evidence required in this scheme (validity); that the work submitted is genuinely the work of that student (authenticity); it was not completed so long ago that they would either have forgotten their learning or that legislation had been introduced or changed in the meanwhile (currency); and that there is enough evidence to give confidence that the requirements of the unit have been met (sufficiency).

The way in which these APL/ APA judgments have been made should be clear to the External Verifier when sampling during visits.

4 Assessment and verification

Codes of practice

The importance of safe working practices, the demands of the Health and Safety at Work Act and the Codes of Practice associated with the industry must always be adhered to.

Health and safety

The requirement to follow safe working practices is an integral part of all City & Guilds qualifications and assessments, and it is the responsibility of centres to ensure that all relevant health and safety requirements are in place before candidates start practical assessments.

Should a candidate fail to follow health and safety practice and procedures during an assessment, the assessment must be stopped and the candidate advised of the reasons why. The candidate should be informed that they have not reached the standard of assessment required. Candidates may retake the assessment at a later date, at the discretion of the centre. In any cases of doubt, guidance should be sought from the external verifier.

Verification of assignments

By using marking checklists verifiers can check that evidence for an assignment is complete and can ensure that allocation of marks has been fair and beyond dispute.

Assessors must ensure that candidates understand why a particular grade has been given for the assignment. It is for this reason that City & Guilds requires the signature of both the assessor and the candidate on the final assignment mark sheet.

If a candidate's work is selected for verification, samples of work must be made available to the appointed external verifier. The external verifier will ensure that:

- the Quality Assurance Co-ordinator is undertaking his/her responsibilities
- the Quality Assurance Co-ordinator is given prompt, accurate and constructive feedback on centre operations
- a report is written by the external verifier on centre activities for City and Guilds.

Assessment and verification

Internal quality assurance

Approved centres must have effective quality assurance systems to ensure optimum delivery and assessment of qualifications.

Quality assurance includes initial centre approval, qualification approval and the centre's own internal procedures for monitoring quality. Centres are responsible for internal quality assurance, and City & Guilds is responsible for external quality assurance.

Full details and guidance on the internal and external quality assurance requirements and procedures, are provided in *Providing City & Guilds Qualifications*. This document also explains the tasks, activities and responsibilities of quality assurance staff.

In order to fully support candidates, centres are required to retain copies of candidates' assessment records for three years after certification.

Centres are also free to design their own assignments, if they feel their suggestions better reflect local needs, and are encouraged to be as creative and inventive as possible, particularly with the research or 'finding out' component. These locally-devised proposals should fulfill the same general assessment purpose as the City & Guilds set assignments, should use the same marking and grading criteria, and should be agreed by City & Guilds and the External Verifier before use, and sampled by the External Verifier before the assessments are claimed.

Entry for assessment and certification

Candidates should be registered via the Walled Garden or using Form S at least 28 days before any assessment. Entries for the online multiple choice test should be made via the Walled Garden or using Form S as per the instructions laid down in the City & Guilds Directory of Vocational Awards.

Results of assignments should be submitted in the form of grades via the Walled Garden or by using Form S. Only those components which have been achieved should be included. Each component number is entered, followed by P (Pass), C (Credit) or D (Distinction) to indicate the grade the candidate has achieved.

5 Introduction to these assignments – for candidates

The assignments will ask you to perform a combination of tasks. These will typically be that:

- they require you to demonstrate your subject knowledge
- they require you to demonstrate your practical skills
- they require you to demonstrate the occupational skills you have acquired.

The assignments are an assessment, but they are also there to support your learning.

All the tasks are graded and you can be awarded a Pass, a Credit or a Distinction grade, depending on how well you perform. To complete the assignment work for a unit successfully you need to achieve at least a Pass grade in all the tasks.

Timings

There is no particular time limit set for the completion of this assignment. Your tutor will guide you however on the maximum time you should allow in order to be sure of completing all of the required assignments within the time available for the course. The timescale for the completion of assignments will be negotiated between you and your tutor. However, the results of your failure to submit on time, without a valid reason, are that you may fail the assignment or cannot obtain better than a pass grade.

You may discuss your work with your tutor to get feedback on whether the accuracy and amount of work you have done will earn you a pass or better. However, you will also need to meet the centre's timescales for submitting your work. The extent of help and support sought from your tutor may make it difficult for you to get a higher final grade, as this may be part of the grading criteria.

Introduction to these assignments – for candidates

Presentation of work

Prepare a front cover and contents page for your assignment and try to present your work in a clear and logical sequence.

You are encouraged to word process your responses (and other simple application programmes where they are accessible) as this will help to generate valuable key skills evidence: this is not a requirement or essential however.

For research and report tasks you may wish to refer to books, information given to you by your tutor or you may wish to research the internet. If you do this, remember to include a reference to show where the information came from. You must also provide the answers in your own words – your assessor obviously knows the way you normally express yourself so they will be able to tell if you have simply downloaded material or copied it directly from a textbook.

You may also wish to include any relevant charts, pictures and leaflets you have collected. Use colours, symbols and diagrams, where you think they will help to illustrate your answers.

Your tutor will guide you if there is any part of this assignment that you do not understand.

6 Assignments

City & Guilds unit number	Assignment title
Unit 301	Professional development for music and sound industries
Unit 302	Multitrack recording and mixing
Unit 303	Audio connectivity and interface techniques
Unit 304	Audio mix automation and control surfaces
Unit 305	Tape and tape-less editing
Unit 306	Stereo microphone techniques
Unit 307	Composition skills for music and sound industries
Unit 308	Software sound manipulation
Unit 309	Surround sound film audio
Unit 310	Live sound and performance technology
Unit 311	Digital broadcast network media
Unit 312	Audio mastering and restoration
Unit 313	Sound studio facility design
Unit 314	Advanced audio electronics

Assignment 301 Professional development for music and sound industries

Assignment composition

Learning outcome	Task	Evidence
1. Explain sound and music rights and regulation	Task A UK: 1.1, 1.2, 1.3, 1.4	Table, report, forms
2. Explain freelance working practices	Task B PS: 2.1 UK: 2.1, 2.2, 2.3, 2.4	Draft business plan, descriptions
3. Describe the importance of continuous professional development	Task C PS: 2.1 UK: 3.1, 3.2, 3.3	CPD strategy

Assignment 301 Professional development for music and sound industries

Assessor guidance

General guidance

Please note, this assignment relates to legislation and organisations in England and Wales. Centres operating under other systems may substitute their own legal system, organisations and processes. This should be approved by the centre's external verifier.

Task A

Candidates will need to carry out research into the stated legislation and produce a table concisely listing the **key** elements of each.

The report must identify the main elements of the Copyright, Designs and Patents act but should be concise and precise with headings and subheadings highlighting the required information

There are a great number of copyright control and royalty agencies and it would be impossible for candidates to research and write reports on all of them. This task, therefore, is designed to allow the candidate to identify appropriate collection agencies and to obtain and accurately complete permissions and new-work registration forms.

Candidates must be aware that all broadcasters and venues operate to different broadcast royalty rates – this varies according to number of listeners. Candidates must log the venue or broadcast-audience on their forms.

Task B

This task gives candidates the opportunity to explore ideas for setting up a business within the music and sound industries. For example, this might be working as a freelance engineer/producer or setting up a recording and mastering facility/studio. Plans must be realistic and should reflect current and future practice and technologies in music and sound industries within a realistic timescale and budget.

Task C

Continuous Professional Development (CPD) requires realistic self-appraisal and management to recognise existing strengths and weaknesses and in planning for updating of skills as necessary. The CPD strategy can be in a format selected by the candidate.

Weighting

Task B is double weighted.

Assignment 301 Professional development for music and sound industries

Tasks

Task A Produce a table, report and forms

Candidates must research and produce a table identifying the key elements of the following legislation:

- Data Protection Act
- Health and Safety at Work Act
- Race Relations Act
- Sex Discrimination Act
- Freedom of Information Act
- Digital Millennium Copyright Act.

Candidates must carry out further research into the Copyright, Designs and Patents Act. They should produce a report detailing the following:

- relevant copyright control
- royalties agencies
- the role of personal legal representation.

Candidates should then assume that they have created a recording which uses 30 seconds of copyrighted music or speech and which will be broadcast to the public. They must obtain the relevant forms to apply for permission to use this material from a royalty collection agency (eg PRS) and should complete the required information on the form.

Candidates should also assume they have composed 30 seconds of original music. They must obtain the relevant new-works forms and complete the required information as if to register the material to the appropriate royalty collection agency (eg PRS).

Assignment 301 Professional development for music and sound industries

Tasks

Task B Produce a personal business plan

Candidates must produce a draft strategic personal business plan for a product or for services within music and sound industries, which must include:

- the main aims and concept of the business
- a spreadsheet showing financial projections
- a SWOT analysis for the product/service
- the legal aspects of the business.

Candidates must write a description of freelance working practices and personal skills required to run the business.

Task C Devise a continuous professional development (CPD) strategy

Candidates must produce a CPD strategy outlining the following:

- current technical skills and knowledge
- current industrial and training experience
- opportunities and needs for updates of skills, knowledge and training
- appraisal of long-term career objectives.

Assignment 301 Professional development for music and sound industries

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
A	<p>provided the minimum relevant information required by the task</p> <p>provided limited evidence of research</p> <p>provided information from a limited use of sources</p> <p>made a limited attempt to present information in a clear, logical sequence</p> <p>accurately completed both forms</p>	<p>provided information and plans which show evidence of relevant research using a variety and range of sources</p> <p>provided clear evidence of relevant information required by the task</p> <p>provided examples which are referenced</p> <p>presented information and plans in a clear, logical sequence</p>	<p>provided information and plans which show evidence of a high level of research and a wide range of sources which are clearly referenced</p> <p>provided clear and consistent evidence of relevant information required by the task</p> <p>provided detailed examples indicating clear evidence of a high level of understanding</p>

Assignment 301 Professional development for music and sound industries

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
B	<p>provided the minimum relevant information required by the task</p> <p>made a limited attempt to present information and plans in a logical sequence</p> <p>provided basic descriptions</p> <p>provided a limited financial forecast</p>	<p>provided clear evidence of relevant information required by the task</p> <p>provided illustrations which are referenced</p> <p>presented information and plans in a clear, logical sequence</p> <p>provided detailed descriptions</p> <p>provided a detailed financial forecast</p>	<p>provided clear and consistent evidence of relevant information required by the task</p> <p>provides strong evidence of clear thinking and planning skills</p> <p>illustrations indicate clear evidence of understanding</p> <p>drawn together all information and produced a cohesive, professionally presented business plan</p>

Assignment 301 Professional development for music and sound industries

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
C	<p>provided the minimum relevant information required by the task</p> <p>made a limited attempt to present information and plans in a logical sequence</p> <p>evaluated personal skills development and training needs</p>	<p>provided clear evidence of relevant information required by the task</p> <p>provided illustrations which are referenced</p> <p>presented information and plans in a clear, logical sequence</p>	<p>provided clear and consistent evidence of relevant information required by the task</p> <p>provides strong evidence of clear thinking and planning skills</p> <p>illustrations indicate clear evidence of understanding</p> <p>drawn together all information and produced a cohesive, professionally presented CPD strategy</p>

Assignment 301 Professional development for music and sound industries

Candidate feedback sheet

Candidate name:

Task & date	Assessor comments/action plan (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 301 Professional development for music and sound industries

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade	Mark
			Pass (1 mark) Credit (2 marks) Distinction (3 marks)
A	Table, report, forms		
C	CPD strategy		
Task	Evidence	Grade	Mark
			Pass (2 mark) Credit (4 marks) Distinction (6 marks)
B	Draft business plan, descriptions		
=Total mark for all graded tasks			
Divided by			÷ 4
=Average mark for tasks			
Overall grade (see conversion chart)			

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

All parts of the tasks must be passed to allow a grade to be claimed.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 302 Multitrack recording and mixing

Assignment composition

Outcomes	Task coverage	Evidence
1. Create a multitrack recording	Task A PS: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8	Recorded live performance, verified track-sheet, monitor mix, notes
2. Process and clean up audio signals	UK: 1.1	
3. Creatively and technically enhance audio signals	Task B PS: 2.1, 2.2, 2.3, 2.4, 2.5 UK: 2.1, 2.2	Updated track-sheet, processed mix, notes
4. Use balancing and equalisation	Task C PS 3.1, 3.2, 3. UK: 3.1, 3.2	Updated track-sheet, processed mix, notes
	Task D PS: 4.1, 4.2, 4.3 UK: 4.1	Updated track-sheet, final mix, notes

Assignment 302 Multitrack recording and mixing

Assessor Guidance

Task A

Candidates are required to create an original master 8-24 multitrack recording (track number dependant on the genre of music and performers)

Task B

Candidates are required to process/clean audio materials previously recorded in task A above

Task C

Effects returns should be recorded to the multitrack as a permanent reference if no archival user memory is available on each unit used (if available, can save user data as data dump).

Task D

Candidates must re-record all mix effect returns to multitrack or back up effect types if no archival user memory is available on each unit used (if available, can save user data as data dump).

As part of the evaluation process candidates may find it useful to bypass all effects processing and make notes/observations.

Assignment 302 Multitrack recording and mixing

Tasks

Task A Produce a multitrack recording

Candidates are required to create an original master 8-24 multitrack recording (track number dependant on the genre of music and performers) to include the following processes:

- session management
- create and produce a professional multitrack recording of live performances
- record four live recorded overdubs
- creation of a detailed track-sheet(s) including all recording references
- create a balanced monitor stereo mix
- reset equipment and tidy the studio environment.

Whilst managing the recording process, candidates should undertake ongoing evaluation of all performances and recording (or re-recording) processes.

Candidates are required to make notes on why they decided to keep or erase any recorded performances in all instances.

Candidates must continually update any relevant notes or references to the track-sheet. Track-sheet must be verified as a correct and accurate record of multitrack recording.

Assignment 302 Multitrack recording and mixing Tasks

Task B Process audio materials

Candidates are required to process/clean audio materials previously recorded in task A above using at least **three** of following dynamics units:

- compressors
- noise gates
- limiters
- de-essers
- expanders.

Candidates must record a new mix to incorporate the processed signals to a stereo mastering machine.

Candidates are required to critically analyse the impact of any processing implemented and make notes regarding the manipulation of any dynamic unit processing parameters which have been used.

Candidates should include the following:

- problems encountered in the audio material
- reasons why recorded signal(s) require processing
- methods used to improve audio problems
- recall sheet for all dynamics units and settings used.

Candidates must update any relevant notes or references to the track-sheet created in task A above.

Assignment 302 Multitrack recording and mixing Tasks

Task C Enhance audio materials

Candidates are required to creatively enhance audio materials previously processed/cleaned in task B above using at least **three** of following effects units:

- delay
- reverb
- chorus
- flanger
- phaser
- echo
- tape delay.

Candidates must record a new stereo mix to incorporate the processed signals.

Candidates are required to critically analyse the impact of any processing implemented and make notes regarding the manipulation of any effects unit processing parameters. Candidates should show the following evaluative notes:

- brief statement of creative intentions
- methods used to enhance audio material
- reasons for choice of effect
- reasons for effect-parameter settings
- recall sheet for all effects units and settings used.

Candidates must update any relevant notes or references to the track-sheet created in task A above.

Assignment 302 Multitrack recording and mixing

Tasks

Task D Produce a final stereo mix

Candidates are required to produce a final stereo mix of all recorded material with amendments/adjustments to bring together and review all of the following elements:

- instruments and performance
- equalisation
- dynamics
- effects
- signal levels
- balancing of overall mix.

Candidates must monitor from master stereo two-track returns, with regular monitoring in all sound fields including a comparison of mono-stereo imaging.

Candidates are required to make notes on the following:

- individual stereo positioning of any stereo signals
- equalisation and frequency conflicts between areas of instrumentation
- any audio signal levels difficult to balance in mix
- final effects processing and types.

Candidates must update any relevant notes or references to the track-sheet created in task A above, with all final settings used recorded on all recall sheets.

Assignment 302 Multitrack recording and mixing

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
A	<p>managed session and set up live performance</p> <p>recorded performance in one pass (take) to all required audio tracks</p> <p>recorded four overdub tracks</p> <p>presented accurate track-sheet of final monitor mix</p> <p>created a basic set of notes</p>	<p>created a set of notes showing a good level of detail</p>	<p>created a set of notes showing a high level of evaluation and analytical thought processes</p>

Assignment 302 Multitrack recording and mixing

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
B	<p>connected all dynamics units required</p> <p>produced results which show some improvements to the dynamics of selected signals</p> <p>recorded a mix including processed signals to a stereo mastering machine</p> <p>created a dynamics recall sheet</p> <p>updated track-sheet where required</p> <p>created notes that show a basic level of critical analysis</p>	<p>recorded all audio signals at a good quality with reasonable use of dynamics processing parameters</p> <p>created detailed notes that show a good level of critical analysis</p>	<p>dynamics processing is consistently applied to significantly improve audio parts</p> <p>created detailed notes that show a high level of evaluation and critical analysis</p>

Assignment 302 Multitrack recording and mixing

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
C	<p>connected all effects units required</p> <p>produced results which show some creative enhancement of selected signals</p> <p>recorded a mix including enhanced signals to a stereo mastering machine</p> <p>created an effects recall sheet</p> <p>updated track-sheet where required</p> <p>created notes that show a basic level of critical analysis</p>	<p>recorded all audio signals at a good quality with reasonable use of effects processing parameters</p> <p>created detailed notes that show a good level of critical analysis</p>	<p>effects processing is consistently applied to significantly improve audio parts</p> <p>created detailed notes that show a high level of evaluation and critical analysis</p>

Assignment 302 Multitrack recording and mixing

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
D	<p>presented final stereo mix</p> <p>updated a final recall and track-sheet</p> <p>created notes that show a basic level of understanding</p>	<p>created mix showing good level-balancing</p> <p>created detailed notes that show a good level of understanding</p>	<p>created a fully-integrated mix showing optimum level-balancing</p> <p>created detailed notes that show a high level of understanding</p>

Assignment 302 Multitrack recording and mixing

Candidate feedback sheet

Candidate name:

Task & date	Assessor comments/action plan (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 302 Multitrack recording and mixing

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade for task	Mark Pass (1 mark) Credit (2 marks) Distinction (3 marks)
A	Recorded live performance, verified track-sheet, monitor mix, notes		
B	Updated track-sheet, processed mix, notes		
C	Updated track-sheet, processed mix, notes		
D	Updated track-sheet, final mix, notes		
=Total mark for all graded tasks			
Divided by the number of graded tasks			÷ 4
=Average mark for tasks			
Overall grade (see conversion chart)			

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

All parts of the tasks must be passed to allow a grade to be claimed.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 303 Audio connectivity and interface techniques

Assignment composition

Outcomes	Task coverage	Evidence
1. Create and test analogue balanced and unbalanced wiring systems	Task Ai	Block diagram and notes
	PS: 2.1, 2.2 UK: 2.1, 2.2	
2. Safely test signals to find faults	Task Aii	Tutor observation
	PS: 2.1, 2.2	
3. Explain digital conversion and the use of interconnects	Task B	Diagram and notes
	PS: 1.1, 1.2 UK: 1.1, 1.2, 1.3, 1.4	
	Task Ci	Report
	UK: 3.1, 3.2, 3.3	
	Task Cii	
PS: 3.1	Observation notes and candidate notes	
UK: 3.2		

Assignment 303 Audio connectivity and interface techniques

Assessor Guidance

General guidance

Centres should ensure that candidates have the required soldering skills to construct the interfaces in this assignment.

Task Ai

Tutors should draw upon their knowledge of the signal flow into, through and out of the console to inform their teaching of this unit. They should enable candidates to systematically evaluate and access convenient points to inject test signals and to monitor signal levels. . Monitoring and signal injection can be done through patch points, measuring signals at plugs and utilising pre/post sends. The console manual should provide valuable information on signal flow and types of signal present throughout the system.

Candidates findings should be presented as a labelled block diagram of the system.

This block diagram should be consulted during the practical faultfinding exercise. A systematic and logical approach should be used in finding the source of the fault

Task Aii

The audio system fault will have been created by the assessor through disconnecting a part of the signal chain; by removing a connector or by using an open circuit lead.

Task B

The tutor is responsible for providing the components for this task (eg transformers etc) and to create suitable interfaces between the two systems.

Tutors should be able to demonstrate the wiring systems and signal levels used in professional and consumer systems and ways of interconnecting the two.

Assignment 303 Audio connectivity and interface techniques

Tasks

Background information

This assignment allows candidates to demonstrate their knowledge and practical ability in connecting together analogue and digital systems. Candidates will demonstrate basic fault finding skills on an analogue system.

Task Ai Produce a block diagram and notes

Candidates are required to measure and note down the signal levels throughout a recording system by using a test tone at the input that produces an output level of "0 Vu" (PPM 5) at the output sockets feeding the multitrack recorder.

The signal chain should cover the signal source through to the multitrack input and the multitrack output back to monitoring section.

Use of the patch bay and access to in/out connectors should be used to measure these levels throughout the signal chain. Each point in the system should be assessed as to whether it is balanced or unbalanced.

Candidates should present this information as a block diagram.

Candidates should make notes showing how these points may be used in the process of fault finding either by injecting a test signal or by signal monitoring and measurement.

Task Aii Locate a fault

Candidates are required to determine the position of a fault in a signal chain using the techniques indicated in task Ai above. Candidates should use logical and efficient processes to locate the fault.

Task B Implement interfacing, produce a diagram and notes

Candidates are required to carry out the interfacing of both:

- an unbalanced consumer level **input** of a device from a balanced professional level desk **output**
- an unbalanced consumer level **output** of a device to a balanced professional level desk **input**.

Candidates should produce a tested interface and submit the following:

- a circuit diagram
- notes of calculations
- an explanation of the earthing use
- an explanation of the differences between professional and consumer systems
- a brief test report.

Assignment 303 Audio connectivity and interface techniques

Tasks

Task Ci Produce a report

Candidates are required to produce a report explaining the fundamental processes and operation of the following digital audio signal chain with master word-clock:

- 20 bit analogue to digital converter comprising anti-alias filter (AAF), dither generator, sample and hold and quantiser
- AES interface with manual selection of channel status
- 20 bit digital to analogue converter including reconstruction filter
- master word-clock.

Task Cii Implement and construct an interface

Candidates are required to implement and construct an interface for an AES digital output to SPDIF digital input.

Candidates should demonstrate the correct operation of the interface and produce notes describing the operation of the interface. They should also produce any relevant calculations and describe limitations in the use of channel status information that is transferred.

Assignment 303 Audio connectivity and interface techniques

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass	Credit	Distinction
	The candidate has:	The candidate has achieved everything at pass grade and has:	The candidate has achieved everything at pass and credit grade and has:
Ai	<p>provided a block diagram showing signal flow</p> <p>provided notes describing the fault finding processes</p> <p>identified most main points of signal access</p> <p>correctly identified most points of connection as balanced or unbalanced</p>	<p>provided annotated block diagram</p> <p>provided clear information describing the fault finding processes</p> <p>identified all main points of signal access and measurement throughout the audio system</p> <p>correctly identified all points of connection as balanced or unbalanced</p>	<p>provided detailed information describing all aspects the fault finding processes</p> <p>identified and described the usefulness all main points of signal access and measurement throughout the audio system</p>
Aii	<p>found the fault</p> <p>used techniques and equipment correctly</p> <p>followed relevant processes correctly</p>	<p>carried out task in logical manner</p> <p>demonstrated efficiency in carrying out processes</p>	<p>described ways in which systematic process of elimination has been carried out</p> <p>carried out task in a organised and professional manner</p>

Assignment 303 Audio connectivity and interface techniques

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass	Credit	Distinction
	The candidate has:	The candidate has achieved everything at pass grade and has:	The candidate has achieved everything at pass and credit grade and has:
B	<p>followed soldering processes correctly</p> <p>created an working interface circuit</p> <p>followed testing processes correctly</p> <p>identified and logged any technical issues</p> <p>used techniques, materials and equipment correctly</p> <p>provided the minimum relevant information in a clear, logical sequence</p>	<p>provided clear information required by the task</p> <p>worked independently</p>	<p>provided clear and detailed information required by the task</p> <p>drawn together all information and produced a cohesive report</p>

Assignment 303 Audio connectivity and interface techniques

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass	Credit	Distinction
	The candidate has:	The candidate has achieved everything at pass grade and has:	The candidate has achieved everything at pass and credit grade and has:
Ci	<p>provided the minimum relevant information required by the task</p> <p>provided limited evidence of research</p> <p>provided information from a limited use of sources</p> <p>made a limited attempt to present information in a clear, logical sequence</p>	<p>provided clear information required by the task</p> <p>worked independently</p>	<p>provided clear and detailed information required by the task</p> <p>provides strong evidence of understanding of underlying principles</p> <p>drawn together all information and produced a cohesive report</p>

Assignment 303 Audio connectivity and interface techniques

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass	Credit	Distinction
	The candidate has:	The candidate has achieved everything at pass grade and has:	The candidate has achieved everything at pass and credit grade and has:
Cii	<p>followed soldering processes correctly</p> <p>created an working interface circuit</p> <p>followed testing processes correctly</p> <p>identified and logged any technical issues</p> <p>used techniques, materials and equipment correctly</p> <p>provided the minimum relevant information in a clear, logical sequence</p>	<p>provided clear information required by the task</p> <p>worked independently</p>	<p>provided clear and detailed information required by the task</p> <p>drawn together all information and produced a cohesive report</p>

Assignment 303 Audio connectivity and interface techniques

Candidate feedback sheet

Candidate name:

Task & date	Assessor comments/action plan (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 303 Audio connectivity and interface techniques

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade for task	Mark Pass (1 mark) Credit (2 marks) Distinction (3 marks)
Ai	Block diagram and notes		
Aii	Tutor observation		
B	Diagram and notes		
Ci	Report		
Cii	Observation notes and candidate notes		
=Total mark for all graded tasks			
Divided by the number of graded tasks			÷ 5
=Average mark for tasks			
Overall grade (see conversion chart)			

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

All parts of the tasks must be passed to allow a grade to be claimed.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 304 Audio mix automation and control surfaces

Assignment composition

Outcomes	Task coverage	Evidence
1. Set up automation systems	Task A PS: 1.1, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 4.1,	Two stereo audio files, project file, log/diary
2. Edit automation data	UK: 1.1, 1.2, 1.3, 1.4, 2.1, 2.2	
3. Use automation techniques	Task B PS: 1.1, 2.1, 2.2, 2.3, 2.4, 4.1	Two stereo audio files, automation data dump, log/diary
4. Use control surfaces	UK: 1.1, 1.2, 1.3, 1.4	
	Task C PS: UK: 3.1, 4.1, 4.2, 4.3	Report

Assignment 304 Audio mix automation and control surfaces

Assessor Guidance

General guidance

Centres may wish to provide mixes for automation purposes and may suggest areas which need attention to the candidate. If the candidate sources their own materials for this task, the tutor should make sure the material is suitable to allow the use of extensive manipulation using automation techniques. An example of the requirement for snapshot automation would be where a chorus vocal is required to be louder than a verse vocal and may also require a different EQ or effects treatment. An example of a written-in automation requirement might be to create a longer reverb tail on every fourth snare hit, etc.

For the purposes of definition, a **software** automation system is taken to mean a large screen-based DAW editing system such as Pro-Tools, Nuendo, Cubase, Logic, etc. A **hardware** automation system is defined as a system where a discrete analogue or digital playback system is used (eg multitrack analogue tape with synchronisation facilities or a digital tape or hard disk discrete playback system such as an Alesis HD24, IZ Radar 24, etc) in synchronisation with a separate analogue or digital mixing console which has in-built automation.

In this assignment, the emphasis is taken away from microphone technique and tracking, which is covered in other units, and placed on the use of automation to achieve a dynamic and well produced track. It is acknowledged that other areas of production will be required such as EQ manipulation, dynamics processing and effects implementation. However, it is envisaged that in the final part of this static balancing process the candidate will enter into the requirements of this unit, which is to automate levels and other properties to achieve dynamic shaping of the mix as it proceeds from start to finish.

Tasks A and B

Candidates will have a chance to carry out a complex mix on both software DAW and hardware based mixing desk scenarios. The diary/log is structured with bullet point requirements, but candidates may embed these pieces of observation/research into their documents in any order as long as the information required is covered in a clear and logical fashion.

The log/diary for task B only requires the candidate to answer a more limited range of questions which relate directly to the difference between the two systems being used. This is to cut down on too much duplication of assessment in what should be essentially a very practically based unit.

Task C

In task C, candidates are asked to briefly reflect on the way in which the control surfaces used in the two different systems have affected the successful production of the track. If centres have highly developed control surfaces candidates may wish to look in detail at how the surface has been designed to create control over the mix. If the centre has a more limited control surface and relies on layered menus or multi-function controls to access the mix, candidates may wish to carry out research and suggest improvements. In either case there is ample scope for a review and comparison of different types of control surface.

Weighting

Tasks A and B are double weighted

Assignment 304 Audio mix-automation and control surfaces

Tasks

Background information

Tasks A and B require candidates to demonstrate a detailed exploration of creating and editing automation data to achieve both production effects and invisible repair techniques.

Please note that a different multitrack audio recording must be used for tasks A and B, not the same one. This is to allow candidates to widen their experience of automation techniques with different audio material.

Task A Automate audio and create a log/diary

In this task candidates are required to use **software** automation system to create a stereo mixdown from a multitrack audio recording consisting of at least **16** audio tracks. The material need not be created by the candidate but should be reasonably untreated audio and not heavily pre-produced in any way.

Candidates should first create a monitor balance of the mix and will then be required to use mix automation to change aspects of the piece as it is played. A copy of this dry monitor mix must be mixed to stereo and submitted.

Candidates are required to use real-time entry as well as graphical entry of automation data and should also implement snapshots to quickly change between one state of automation and another.

Automation data should be carefully revised and edited to create a well crafted mixdown.

Candidates are required to submit both a stereo audio mix down and documented proof of the editing and archiving of automation data (ie backup library file of automation data or project file incorporating automation data, etc).

Candidates must create a log/diary of the process to include comments on the following areas of the system on which they are using automation:

Setting up the system:

- how automation is set up, written and played back
- terminology used to describe the parameters of automation they are using
- what features can be automated or not.

Creating and editing data:

- how real-time, graphical and snapshot automation data has been created and edited
- whether a particular automation technique seems more useful than another for a particular purpose
- the mode of automation which was used for a particular purpose.

Assignment 304 Audio mix-automation and control surfaces

Tasks

Task B Automate audio and create a log/diary

In this task candidates are required to use a **hardware** automation system to create a stereo mixdown from a multitrack audio recording consisting of at least **eight** audio tracks. The material need not be created by the candidate but should be reasonably untreated audio and not heavily pre-produced in any way.

Candidates should first create a monitor balance of the mix and will then be required to use mix automation to change aspects of the piece as it is played. A copy of this dry monitor mix must be mixed to stereo and submitted.

Candidates are required to use real time entry as well as graphical entry of automation data and should also implement snapshots to quickly change between one state of automation and another.

Automation data should be carefully revised and edited to create a well crafted mixdown.

Candidates are required to submit both a stereo audio mix down and documented proof of the editing and archiving of automation data (ie backup library file of automation data).

Candidates must create a log/diary of the process to include comments on the following areas of the system on which they are using automation:

Setting up the system:

- how automation is set up, written and played back
- terminology used to describe the parameters of automation they are using
- what features can be automated or not.

Task C Produce a report

Candidates should produce a report reviewing and comparing (approximately 750-1000 words) the two systems they have used to create automated mixes with particular regard to the control surface used to carry out the mix and create automation data.

Each of the two systems should be reviewed separately and suggestions should be made as to whether any further control surfaces are on the market which could have added to the ability of the mix engineer to achieve good results.

Candidates should explain **either** why they think the system they are using is ideally fit for purpose **or** exactly why further control surface expansion or replacement might be desirable.

Assignment 304 Audio mix-automation and control surfaces

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
A	<p>submitted a stereo monitor mix</p> <p>submitted a stereo master file in the correct format</p> <p>submitted a project file allowing examination of automation data</p> <p>used real-time and graphical entry of automation data as well as snapshot recall</p> <p>created a mix which shows a satisfactory use of automation to produce a finished product with only minor over or under use of automation functions resulting in minor issues outstanding with the mix</p> <p>created a log/diary providing the minimum relevant information required by the task</p>	<p>created a mix showing good use of all automation and mix functions producing a final result which is well balanced with no unwanted audio problems</p> <p>created a log/diary providing clear evidence of relevant information required by the task</p>	<p>created a mix using automation to significantly enhance the overall balance and dynamics of the final product</p> <p>created a mix so that all automation features are cohesive and blend well into the stereo image</p> <p>created a log/diary providing strong evidence of clear thinking and analytical skills</p>

Assignment 304 Audio mix-automation and control surfaces

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
B	<p>submitted a stereo monitor mix</p> <p>submitted a stereo master file in the correct format</p> <p>submitted an automation data dump allowing examination of automation data</p> <p>used real-time and graphical entry of automation data as well as snapshot recall</p> <p>created a mix which shows a satisfactory use of automation to produce a finished product with only minor over or under use of automation functions resulting in minor issues outstanding with the mix</p> <p>created a log/diary providing the minimum relevant information required by the task</p>	<p>created a mix showing good use of all automation and mix functions producing a final result which is well balanced with no unwanted audio problems</p> <p>created a log/diary providing provided clear evidence of relevant information required by the task</p>	<p>created a mix using automation to significantly enhance the overall balance and dynamics of the final product</p> <p>created a mix so that all automation features are cohesive and blend well into the overall stereo image</p> <p>created a log/diary providing strong evidence of clear thinking and analytical skills</p>

Assignment 304 Audio mix-automation and control surfaces

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
C	made a limited attempt to present information in a clear, logical sequence provided the minimum relevant information required by the task	presented all information in a clear, logical sequence worked independently	provided clear and detailed relevant information required by the task provided strong evidence of clear thinking and analytical skills

Assignment 304 Audio mix-automation and control surfaces

Candidate feedback sheet

Candidate name:

Task & date	Assessor comments (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 304 Audio mix automation and control surfaces

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade for task	Mark Pass (2 mark) Credit (4 marks) Distinction (6 marks)
A	Two stereo audio files, project file, log/diary		
B	Two stereo audio files, automation data dump, log/diary		
Task	Evidence	Grade for task	Mark Pass (1 mark) Credit (2 marks) Distinction (3 marks)
C	Report		

=Total mark for all graded tasks

Divided by

÷ 5

=Average mark for tasks

Overall grade
(see conversion chart)

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 305 Tape and tape-less editing

Assignment composition

Outcomes	Task coverage	Evidence
1. Operate analogue tape systems	Task A PS: 1.1, 1.2, 1.3 UK: 1.1, 1.2, 1.3, 1.4	Report, analogue tape with test tones, stereo analogue tape recordings
2. Edit stereo using analogue tape and non-linear systems	Task B PS: 2.1, 2.2, 2.3, 2.4 UK: 2.1, 2.2, 2.3, 2.4	Edited analogue tapes, edited digital audio files, CD copy, log/diary
3. Analyse sound quality and noise reduction	Task C PS: 3.1, 3.2, 3.3, 3.4, 3.5 UK: 3.1, 3.2	Digital audio file, CD master, report

Assignment 305 Tape and tape-less editing

Assessor Guidance

Task B

Each candidate must be given a different newspaper article. Newspaper article must be suitable for all audiences.

It is recommended that candidates record more than one take and select the best performances before editing selections together.

Weighting

Task A is double weighted.

Assignment 305 Tape and tape-less editing

Tasks

Background information

This assignment allows candidates to demonstrate their knowledge and practical ability in the use of analogue tape systems and digital audio work stations. Candidates will demonstrate the ability to perform basic maintenance and alignment and to record/edit correctly using both formats. Candidates will also develop an understanding of the advantages and disadvantages of both systems.

Task A Produce a research report and make recordings

Candidates are required to research and produce a report (approximately 750-1000 words) on the following:

- properties of magnetism
- development and composition of magnetic tape
- function of tape transport mechanisms
- maintenance and alignment procedures for analogue tape machines.

Candidates are required to carry out the following on a stereo analogue tape machine:

- clean the tape transport mechanism
- de-magnetise the tape heads
- record a 1kHz test tone at 0 VU (10 seconds left channel only, 10 seconds left and right channels, 10 seconds right only)

Candidates should also:

- splice leader tape onto magnetic tape
- submit the test tone recording with a clearly labelled spool and tape box.

Candidates are then required to make a minimum of four 30 second recordings from various different sound sources and compile them onto a single, professionally presented stereo analogue tape.

NB. Clearly labelled recordings must include the following information: candidate name, project name, date, titles, tape speed, EQ, nano webbers (nWB), dB, signal level, any use of noise reduction (NR), mono/stereo, any other relevant information. All analogue tape should be submitted tail-out.

Assignment 305 Tape and tape-less editing

Tasks

Task B Make recordings and keep a log/diary

Candidates will be given a current newspaper article by their tutor. Candidates are required to make a one to two minute spoken word recording from the newspaper article onto analogue tape. The project must begin with candidates recording their own name, the article title and the date. Noise reduction must not be applied to the source recording. Candidates must use a professional quality microphone for clarity of recording.

Prior to editing, candidates must transfer and archive the entire live recording to a suitable DAW. The audio should then be backed-up as a CD, labelled and submitted for later use.

Candidates will carry out the same editing process firstly on the analogue tape machine and then on a DAW.

Edit one

Candidates must firstly edit the audio on the analogue tape using cut and splice techniques to perform the following types of edit:

- removing unwanted audio (mistakes)
- re-arranging/copying/repeating
- top and tailing.

Candidates must submit a professionally labelled edited analogue tape.

Edit two

Candidates are now required to edit the audio previously archived on the DAW and produce a product of professional quality. The edited stereo material should then be transferred to CD for audio playback.

Candidates are required to keep a log/diary comparing and contrasting their experiences of editing audio using both cut and splice analogue tape and a DAW platform.

Task C Make recordings and produce a report

Candidates are now required to process the final edited recording which they achieved on the DAW (in task B edit two) using an analogue tape emulation software plug-in.

This should then be copied on to a master audio CD.

Candidates are required to write a brief report covering the following:

- evaluate the quality of the analogue and digital audio recordings before processing with the emulation software
- compare the emulation with the original analogue tape recording
- explain the advantages and disadvantages of noise reduction systems.

Assignment 305 Tape and tape-less editing

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
A	<p>provided the minimum relevant information required by the task</p> <p>provided limited evidence of research</p> <p>provided information from a limited use of sources</p> <p>made a limited attempt to present information in a clear, logical sequence</p> <p>cleaned and demagnetised the tape transport mechanism</p> <p>recorded the test tone at the correct level on the correct channels</p> <p>correctly spliced the leader tape</p> <p>clearly labelled the recording</p> <p>recorded a variety of different source material correctly onto stereo analogue tape</p> <p>provided a correctly presented master tape</p>	<p>provided information which shows evidence of relevant research using a variety and range of sources</p> <p>provided clear evidence of relevant information required by the task</p> <p>provided illustrations which are referenced</p> <p>presented information in a clear, logical sequence</p>	<p>provided information which shows evidence of a high level of research and a wide range of sources which are clearly referenced</p> <p>provided clear and consistent evidence of relevant information required by the task</p> <p>illustrations indicate clear evidence of understanding</p>

Assignment 305 Tape and tape-less editing

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
B	<p>made an analogue tape recording</p> <p>transferred the analogue tape recording onto a DAW platform</p> <p>made an audio CD back-up of the recording</p> <p>performed basic cut and splice editing of the original analogue recording, removing or correcting mistakes</p> <p>correctly presented and labelled the tape to professional standards</p> <p>used a DAW to perform basic editing of the original analogue recording removing or correcting mistakes</p> <p>transferred edited audio onto an audio CD that is correctly labelled and presented to professional standard</p> <p>provided the minimum relevant information required by the task</p> <p>made a limited attempt to present information in a clear, logical sequence</p>	<p>produced seamless edits on analogue tape</p> <p>produced seamless edits on DAW</p> <p>provided clear evidence of relevant information required by the task</p> <p>demonstrated evidence of analysing information</p> <p>presented information in a clear, logical sequence</p>	<p>provided clear and consistent evidence of relevant information required by the task</p> <p>provides strong evidence of clear thinking and analytical skills</p>

Assignment 305 Tape and tape-less editing

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
C	<p>made a DAW recording</p> <p>treated the recording with the emulation software</p> <p>mastered treated recording to audio CD</p> <p>provided the minimum relevant information required by the task</p> <p>made a limited attempt to present information in a clear, logical sequence</p>	<p>provided clear evidence of relevant information required by the task</p> <p>demonstrated evidence of analysing information</p> <p>presented information in a clear, logical sequence</p>	<p>provided clear and consistent evidence of relevant information required by the task</p> <p>provides strong evidence of clear thinking and analytical skills</p>

Assignment 305 Tape and tape-less editing

Candidate feedback sheet

Candidate name:

Task & date	Assessor's comments (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 305 Tape and tape-less editing

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade for task	Mark
			Pass (2 mark) Credit (4 marks) Distinction (6 marks)
A	Report, analogue tape with test tones, stereo analogue tape recordings		
Task	Evidence	Grade for task	Mark
			Pass (1 mark) Credit (2 marks) Distinction (3 marks)
B	Edited analogue tapes, edited digital audio files, CD copy, report		
C	Digital audio file, CD master, report		
=Total mark for all graded tasks			
Divided by			÷ 4
=Average mark for tasks			
Overall grade (see conversion chart)			

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

All parts of the tasks must be passed to allow a grade to be claimed.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 306 Stereo microphone techniques

Assignment composition

Outcomes	Task coverage	Evidence
1. Explain psychoacoustic processes used in common stereo microphone technique	Task A UK: 2.1, 2.2	Report, glossary
2. Explain the characteristics of common transducer types	Task B UK: 1.1, 1.2	Report
3. Critically evaluate stereo acoustic sound	Task C PS: 3.1, 3.2, 4.1, 4.2, 4.3, 4.4 UK: 3.1, 3.2, 4.1, 4.2	Two stereo audio recordings, evaluation, floor plan
4. Set up and record live performance		

Assignment 306 Stereo microphone techniques

Assessor Guidance

Task A

Assessors will issue candidates with four different models of commercial mono microphone, one of which will be a multi-pattern capacitor. The assessor should be looking for an understanding of the principles involved and how they implicate practical use

Task B

The assessor should be looking for an understanding of the principles involved and how they affect practical use. Candidates should undertake practical use of the microphone techniques involved, using simple sources in the classroom.

Task C

Opportunities to record an acoustic ensemble or live drama are sometimes limited. The centre should take every opportunity to seek out and co-operate with local professional and amateur groups such as orchestras, string quartets, and drama groups. Rehearsal time, if not full performances, can sometimes be used for purposes of recording. It is suggested that the task be undertaken by groups of two candidates where they share the responsibility of realising the recordings. Groups greater than two may be considered only if there is real evidence submitted to show that each member of the group has contributed fully to the recordings.

The criteria used for evaluating stereo recordings should be explained and demonstrated during class time and these should be used by the assessor to evaluate the final recordings on a good quality loudspeaker system (not headphones). As good practice it is suggested that the centre should collect recordings from this task to demonstrate stereo recording issues to future learners.

The candidates should be encouraged to consider that the first requirement of any recording engineer is to listen to the performance in the performance space paying particular attention to the balance between the sound from the stage and added room reverberation. Also candidates should be encouraged to think carefully about what they are hearing as a stereo soundstage – i.e. how the performers are spread out etc. (If it helps to close their eyes....)

If time is available candidates should experiment with the distance between the microphone arrays and the stage, again noting the direct signal / reverberation mix. Reinforce to the candidates that they are to make a recording that depicts what is heard in the space, not what they think it should sound like.

Candidates should make notes during their listening in the space as these can be referred to when they evaluate their recordings.

The emphasis in this task is to get the candidates to listen to and evaluate their recordings, not to assess the recordings as if they were potential commercial releases.

Please ensure candidates measure distances accurately for their floor plan.

Weighting

Task C is double weighted.

Assignment 306 Stereo microphone techniques

Tasks

Task A Produce a report and glossary

Candidates should produce a report researching the following for **four** microphones provided by the tutor, one of which will be a multi-pattern capacitor:

- directional type
- operation of the transducer
- transducer/construction used to dictate the polar pattern
- frequency response charts (on axis and off axis)
- polar pattern chart showing effect of frequency
- operational characteristics: phantom power requirements, proximity effects, SPL limitations, and sensitivity.

In the case of the multi-pattern capacitor, details should be presented for each of the patterns available. The report should include a glossary defining the technical expressions used in the report.

Task B Produce a report

Candidates must produce a report explaining alignment and positioning, psychoacoustic principles that are exploited and operational requirements for the following microphone configurations:

- stereo spaced pair
- stereo co-incidental pair
- stereo near co-incidental pair
- mid-side (MS).

NB Candidates should draw upon their own experiences of the practical use of the above microphone techniques achieved in practical workshops while studying for this unit.

Assignment 306 Stereo microphone techniques

Tasks

Task C Produce recordings, evaluation and floor plan

Candidates will use **two** of the microphone techniques from task B above and record an acoustic ensemble to a pair of stereo master recorders or four channels of a multitrack recorder, producing **two** simultaneous recordings to professional standards.

Candidates should produce a detailed evaluation of the following:

- the sound heard at the microphone positions in the performing space
- the recordings themselves
- any disparities between the live and recorded sound with each technique.

Candidates should produce an accurate floor plan will be included as part of the report detailing microphone spacing and angles where relevant, distances from performers and brief details of the acoustic treatment of the space.

The two stereo recordings will be submitted as separate stereo files for marking.

Assignment 306 Stereo microphone techniques

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
A	<p>provided the minimum relevant information required by the task</p> <p>provided limited evidence of research</p> <p>provided information from a limited use of sources</p> <p>made a limited attempt to present information in a clear, logical sequence</p>	<p>provided information which shows evidence of relevant research using a variety and range of sources</p> <p>provided clear evidence of relevant information required by the task</p> <p>demonstrated evidence of analysing research information</p> <p>provided illustrations which are referenced</p> <p>presented information in a clear, logical sequence</p>	<p>provided information which shows evidence of a high level of research and a wide range of sources which are clearly referenced</p> <p>provided clear and consistent evidence of relevant information required by the task</p> <p>analysed the research and provided information which shows evidence of interpretation and application</p> <p>provides strong evidence of clear thinking and analytical skills</p> <p>illustrations indicate clear evidence of understanding</p>

Assignment 306 Stereo microphone techniques

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
B	<p>provided the minimum relevant information required by the task</p> <p>provided limited evidence of research</p> <p>provided information from a limited use of sources</p> <p>made a limited attempt to present information in a clear, logical sequence</p>	<p>provided information which shows evidence of relevant research using a variety and range of sources</p> <p>provided clear evidence of relevant information required by the task</p> <p>demonstrated evidence of analysing research information</p> <p>provided illustrations which are referenced</p> <p>presented information and plans in a clear, logical sequence</p>	<p>provided information which shows evidence of a high level of research and a wide range of sources which are clearly referenced</p> <p>provided clear and consistent evidence of relevant information required by the task</p> <p>analysed the research and provided information which shows evidence of interpretation and application of the techniques and of the psychoacoustic processes involved</p> <p>provides strong evidence of clear thinking and analytical skills</p> <p>illustrations indicate clear evidence of understanding of the psychoacoustic processes used</p>

Assignment 306 Stereo microphone techniques

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
C	<p>provided two recordings to correct technical recording requirements</p> <p>provided a floor plan to a reasonable standard</p> <p>provided limited evidence of the evaluation of the recordings</p> <p>made a limited attempt to present information in a clear, logical sequence</p>	<p>provided a detailed floor plan to good standards</p> <p>provided good evidence of the evaluation of the recordings</p> <p>provided information and plans which show evidence of relevant research</p> <p>provided clear evidence of relevant information required by the task</p> <p>demonstrated evidence of analysing research information and implementing it</p> <p>presented evaluation in a clear, logical sequence</p>	<p>provided a highly detailed floor plan to professional standards</p> <p>provided excellent evidence of the evaluation of the recordings to professional standards</p> <p>suggested improvements to be implemented in future recordings</p> <p>provided information which show evidence of a high level of research</p> <p>provides strong evidence of clear thinking and analytical skills</p> <p>evaluations indicate clear evidence of understanding of the issues that have affected the recording</p>

Assignment 306 Stereo microphone techniques

Candidate feedback sheet

Candidate name:

Task & date	Assessor's comments (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 306 Stereo microphone techniques

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade for task	Mark Pass (1 mark) Credit (2 marks) Distinction (3 marks)
A	Report, glossary		
B	Report		
Task	Evidence	Grade for task	Mark Pass (2 mark) Credit (4 marks) Distinction (6 marks)
C	Audio recordings, evaluation, floor plan		

=Total mark for all graded tasks

Divided by

÷ 4

=Average mark for tasks

Overall grade
(see conversion chart)

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

All parts of the tasks must be passed to allow a grade to be claimed.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 307 Composition skills for music and sound industries

Assignment composition

Outcomes	Task coverage	Evidence
1. Identify the focus for an original composition	Task A PS: 1.1, 1.2, 1.2, UK: 1.1, 1.2, 1.3	Log/diary, three stereo audio files
2. Evaluate instrumentation	Task B	Stereo audio file, evaluative notes
3. Evaluate hook/lead line and rhythm	PS: 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3, 3.4, 3.5, 4.1, 4.2, 4.3, 4.4	
4. Implement arrangement/structuring techniques	UK: 2.1, 3.1	

Assignment 307 Composition skills for music and sound industries

Assessor Guidance

General guidance

Candidates will be taken through a series of examples of how to use different starting points to begin new compositions. It is stipulated that each of the three initial sketches and the final developed piece should incorporate a melody line (this could be a vocal or instrumental lead line) and a rhythm/drum track.

Candidates should make an investigation into the style of music which they are developing into the final piece and are required to analyse the genre of music which it is intended to fit in to. The main emphasis here is that the candidate should gain an understanding of typical melodic, instrumental and rhythmic elements of pieces of music similar to (or at least related to) the one which they will be developing so that they can evaluate its success in fitting into a particular market profile.

It is recognised that composition and the evaluation of music is a subjective area, nevertheless characteristic melodic rhythmic and instrumentation features can be found in most genres of music.

The audio sketches and final pieces will also be marked for their general production techniques.

Assignment 307 **Composition skills for music and sound industries**

Tasks

Background information

In these tasks, candidates will explore techniques taught in the unit whereby different starting points are used to develop short original compositions. One of these compositions will be situated within the context of a music genre and its requirements analysed by the candidate before it is developed into a full piece which incorporates melody and rhythm as well as instrumentation, structuring and arrangement. Compositions may be entirely MIDI based, entirely live-audio (or sample) based or any combination as desired.

Task A Create three short experimental compositions

Candidates are required to create **three** short basic sketch-compositions for this task. Each one should be a minimum of 1.5 minutes in length. The minimum requirement of each of the three pieces is that they should all include both melodic and rhythm (drum or percussion) parts.

Candidates must use different starting points when developing the three compositions.

The pieces should be developed to a point where the main themes and structure are set in place and the different starting point processes have been explored to a basic extent. The three starting points are as follows:

1. Music theory/structure
2. Music technology/recording process
3. Project brief/theme

Candidates should keep a log/diary of the composition process and should describe the use of the different starting points and how they have enabled them to begin working on new and original compositions.

NB. Submissions should be balanced in terms of frequency range, volume level and stereo placement.

Assignment 307 **Composition skills for music and sound industries**

Tasks

Task B Create major composition and evaluate

Candidates should pick **one** of the pieces in task A above for further development.

Candidates should create a brief evaluation of the requirements of the piece of music to include answers to the following questions:

- what genre of music does the piece fit into and what is its potential market (audience)?
- what is the typical instrumentation used in such a genre?
- how are melody and rhythm typically used within the genre?
- how can a hook be developed within the piece to give it a memorable characteristic?
- what might a suitable arrangement/structure be for this piece?

The candidate should then develop the instrumentation, rhythm and melody parts as well as implementing a memorable hook and structuring and arranging the piece of music. The piece should be at least three minutes in length.

The final piece should be well balanced and appropriate production techniques carried out so as to represent all the audio parts well within the final stereo mix down.

Finally, the candidate should re-visit the evaluation and assess whether the criteria they identified for development have been met successfully and, if so, how this has been done.

Assignment 307 Composition skills for music and sound industries

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
A	<p>submitted three stereo master files of a minimum length of one-and-a-half minutes each</p> <p>shown a basic level of balancing in the audio sketches</p> <p>created a log/diary showing basic details of information required</p>	<p>shown a good level of balancing throughout each of the audio sketches</p> <p>presented information in a clear, logical sequence in their log/diary</p> <p>provided clear evidence of relevant information required by the task</p>	<p>created an excellent audio balance within each of the initial explorative audio sketches to a high technical standard</p> <p>provided clear and detailed relevant information required by the task in their log/diary</p>
B	<p>submitted a stereo master file of at least three minutes in length</p> <p>audio parts have been balanced to a basic level with only very minor problem areas</p> <p>shown basic information required in their evaluative notes</p> <p>evaluated the success of their final piece at a basic level</p>	<p>achieved the mix to a good technical standard throughout</p> <p>made a full evaluation of their own work as evidenced against their original observations and intentions for the piece</p> <p>worked independently</p>	<p>integrated the composed audio material and production processes excellently to achieve a very well balanced product</p> <p>the evaluation shows a detailed study of the piece and how it relates to their requirements and to the work of other composers/artists</p>

Assignment 307 Composition skills for music and sound industries

Candidate feedback sheet

Candidate name:

Task & date	Assessor's comments (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 307 Composition skills for music and sound industries

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade for task	Mark Pass (1 mark) Credit (2 marks) Distinction (3 marks)
A	Log/diary, three stereo audio files		
B	Stereo audio file, evaluative notes		
=Total mark for all graded tasks			
Divided by			÷ 2
=Average mark for tasks			
Overall grade (see conversion chart)			

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

All parts of the tasks must be passed to allow a grade to be claimed.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 308 Software sound manipulation

Assignment composition

Outcomes	Task coverage	Evidence
1. Categorise audio software	Task A PS: 1.1, 1.2 UK: 1.2, 1.2, 1.3, 1.4	Report
2. Evaluate audio manipulation	Task Bi PS: 2.1 UK: 2.1, 3.1, 3.2	Stereo audio file, log/diary
3. Manipulate timing and pitch	Task Bii PS: 2.2, 3.1, 3.2 UK: 2.2, 3.1, 3.2	Stereo audio file, log/diary
4. Adjust parameters of manipulation processes	Task C PS: 4.1, 4.2, 4.3, 4.4 UK: 4.1, 4.2	Stereo audio file, log/diary

Assignment 308 Software sound manipulation

Assessor Guidance

General guidance

It is recommended that candidates complete this set of tasks in sequential order.

Task A

Candidates are encouraged to research audio software by looking on the internet and looking at articles in trade magazines. They should be encouraged to make the distinction between full-licence commercial software and free or shareware licences.

Five categories is only a minimum and candidates may broaden these out to provide a more detailed picture of what is available if time allows.

Candidates should describe the **purpose of software** in their own words and not just by cutting and pasting information from manufacturer's guidelines.

Task Bi

In this task, it is envisaged that candidates will use software tools to detect **hit points/beats** on individual audio tracks and then line the points up with pre-defined grid snap points (in some cases by converting the hit points to MIDI triggers/events then quantising the start points, etc).

Other similar processes can be used. It would be beneficial for candidates to be required to override or otherwise adjust the parameters for particular hits/beats manually, especially in the odd case that the software cannot pick up desirable (human....) timing automatically.

Any suitable multitrack percussive-based material may be used for this task.

The centre must produce a recording for candidates to use. Good separation between microphones is important in the choice of recording. Compression and/or gating may be used in pre-production to create a recording which *just* requires timing alterations to achieve a good product/result.

The recorded tracks must be pre-synchronised in time with a specified tempo/time grid or click track (bpm) in a digital audio workstation-based project.

Centres could choose to produce a sub-mix track of all other instrumental parts with just the two out-of time tracks left as discrete tracks to be altered if this makes the exercise simpler/clearer for candidates to achieve.

Centres should take care to provide clean, well-produced drum recordings so that the time-correction process can be used successfully and should audition the process to make sure there are no hidden problems for candidates.

Assignment 308 Software sound manipulation

Assessor Guidance

Task Bii

In this task, candidates will adjust the overall tuning of a singer or lead instrumentalist who is in need of some 'pitch support'.

The audio file prepared by centres should incorporate both the need for low-level continuous adjustment (eg within +/- 50cents) and the need for individual note adjustment (eg whole tone or semitone intervals of adjustment).

Task C

Candidates will be encouraged to be creative with the processes available to them with an emphasis on using such transformative techniques as points of interest within the production of the track.

Candidates may use MIDI-based sequences converted to audio, live audio recording or sample-based audio as raw material for this piece. In all of these cases, it is important that the majority of the candidates time is spent carrying out digital audio manipulation and processing of the source material, not in carrying out the compositional process.

Weighting

Task C is double weighted.

Assignment 308 Software sound manipulation

Tasks

Task A Produce a software evaluation report

In this task, candidates are required to research and produce a report on the range of audio software available on the market and categorise the software into different areas/purposes. Candidates are also required to explain the type of software licence available.

In the report, candidates should answer the following questions:

- where can audio software be sourced from
- how does audio software affect the choice of software plug-ins
- what different software licences are available and what do they mean?

As part of the report, candidates should carry out a survey of audio software available and place them into a minimum of **five** different categories. Candidates should make a detailed exploration of each category and should give details of a minimum of **three** specific examples of commercially available software in each category which they have created.

When giving examples of software in each category the following details should be identified for each piece of software:

- name of software
- manufacture/author
- type of licence available
- purpose of software
- ease of use/interface features.
- audio quality
- target market/user.

Task Bi Carry out software-based timing adjustment

In this task centres will provide candidates with a multitrack recording of some percussive/rhythm based material recorded on separate channels. The recording will require a high percentage of hits/beats which require timing adjustment on at least two different tracks (eg bass drum, snare etc.). This will be achieved by using automatic or semi-automatic audio timing adjustment using digital software techniques.

Candidates must submit a stereo audio file of the mix-down of the time-adjusted drum track.

Candidates must keep a log/diary explaining and evaluating the procedures necessary to pull an out-of-time rhythm section into time using software techniques.

Assignment 308 Software sound manipulation

Tasks

Task Bii Carry out software-based pitch adjustment

In this task, centres will provide candidates with a multitrack recording in which there is a lead vocal or lead instrumental melody line which requires automatic or semi-automatic pitch adjustment to achieve a good product/result. Candidates will use software techniques to achieve the tuning adjustments.

Candidates must submit a stereo audio file of the mix-down of the new pitch-corrected vocal track blended with the other audio tracks.

Candidates must keep a log/diary explaining and evaluating the procedures necessary to pull an out-of-tune vocal line into tune using software techniques.

Task C Use sound manipulation software processes

Candidates are required to make creative use of sound manipulation processes as production effects in a short multitrack recording.

Candidates must undertake the following processes as part of their track:

- chaining effects/processes one after another
- automating aspects of effects/processes.

The recording should be between 1.5 and 3 minutes in length.

Candidates should keep a log/diary to include the following evaluation:

- how software parameters have been adjusted to achieve different audio effects
- how the candidate has judged different creative outcomes of software manipulation processes by comparing, bypassing and auditioning different alternatives.

Candidates will submit a stereo audio file of the mix-down of their audio piece.

All audio tracks should be well balanced with respect to equalisation, stereo balance and volume levels.

Assignment 308 Software sound manipulation

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
A	<p>provided correct answers to questions as required</p> <p>created a written evaluation which has listed at least five categories of audio software</p> <p>reviewed three specific pieces of software in each category</p> <p>provided basic details specified with only very minor omissions</p>	<p>provided answers to questions which shows evidence of relevant research using a variety and range of sources</p> <p>provided written evaluation which shows evidence of relevant research using a variety and range of sources</p> <p>created categories and reviews of software which go beyond a basic description of features</p>	<p>provided information in their answers to questions which shows evidence of a high level of research and a wide range of sources which are clearly referenced</p> <p>provided information in their written evaluation which shows evidence of a high level of research and a wide range of sources which are clearly referenced</p> <p>created categories and reviews of software which show clear and consistent evidence of detailed relevant information required by the task</p>

Assignment 308 Software sound manipulation

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
Bi	<p>submitted a stereo audio file of the mix-down of the time-adjusted percussive track</p> <p>mix-down shows that time correction has been achieved on most instances of out-of-time hits/beats, with only minor exceptions</p> <p>submitted a log/diary showing basic evaluation of the process of time adjustment</p>	<p>mix-down shows that a good level of time correction has been achieved for all out-of-time materials</p> <p>provided information in their log/diary which shows a high level of detailed thought</p>	<p>mix-down shows that time correction has been achieved at optimum timings for all out-of-time materials</p> <p>provided information in their log/diary which shows clear and consistent evidence of detailed relevant information and evaluation required by the task</p>

Assignment 308 Software sound manipulation

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
Bii	<p>submitted a stereo audio file of the mix-down of the pitch-adjusted vocal/instrumental track combined with the backing track materials</p> <p>mix-down shows that pitch correction has been achieved on most notes, with only minor exceptions</p> <p>submitted a log/diary showing basic evaluation of the process of pitch correction</p>	<p>mix-down shows that a good level of pitch correction has been achieved for all out-of-pitch notes</p> <p>provided information in their log/diary which shows a high level of detailed thought</p>	<p>mix-down shows that pitch correction has been achieved at an optimum setting for all out-of-pitch materials</p> <p>provided information in their log/diary which shows clear and consistent evidence of detailed relevant information and evaluation required by the task</p>

Assignment 308 Software sound manipulation

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
C	<p>submitted a stereo file of the required length</p> <p>balanced the submitted audio file with respect to frequency range, stereo field and volume levels with only minor exceptions</p> <p>achieved basic chaining of software manipulation processes</p> <p>achieved basic automation of software manipulation processes</p> <p>submitted a log/diary showing basic evaluation of the use of software sound manipulation processes</p>	<p>created a good mix with all audio elements well balanced</p> <p>shown creative use of software sound manipulation utilising appropriate parameters and devices</p> <p>submitted a detailed log/diary evaluating the use of software sound manipulation processes</p>	<p>created an audio mix which is optimised in all respects</p> <p>shown excellent use of creative sound manipulation processes to achieve an outstanding result</p> <p>submitted a log/diary which evidences a high level of analysis and shows evaluation of different approaches to achieving creative results</p>

Assignment 308 Software sound manipulation

Candidate feedback sheet

Candidate name:

Task & date	Assessor's comments (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 308 Software sound manipulation

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade for task	Mark Pass (1 mark) Credit (2 marks) Distinction (3 marks)
A	Report		
Bi	Stereo audio file, log/diary		
Bii	Stereo audio file, log/diary		
Task	Evidence	Grade for task	Mark Pass (2 mark) Credit (4 marks) Distinction (6 marks)
C	Stereo audio file, log/diary		
=Total mark for all graded tasks			
Divided by			÷ 5
=Average mark for tasks			
Overall grade (see conversion chart)			

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

All parts of the tasks must be passed to allow a grade to be claimed.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 309 Surround sound film audio

Assignment composition

Outcomes	Task coverage	Evidence
1. Develop audio resources	Task A PS: 1.1, 1.2, 1.3, 1.4 UK: 1.1, 2,1 2,2,	Audio master, keyed timeline, log/diary
2. Integrate sound with film clips	Task B PS: 2.2, 2.3 UK: 1.2, 2.3, 2.4, 2.5	DVD, proposals, log/diary
3. Implement surround sound	Task C PS: 3.1, 3.2, 3.3, 3.4, 3.5 UK: 3.1, 3.2, 3.3, 3.4	Archived data, DVD master, report

Assignment 309 Surround sound film audio

Assessor Guidance

Task A

Tutors should assign a film without sound and its storyboard to each candidate. The film could be from the college's own archive of student's work or a cleared commercial source and would be an ideal opportunity to work with video students.

NB. Audio effects in general are defined as M&E (music, sound, dialogue, atmosphere, Foley effects). This use of the term "music and effects" (M&E) is different to the term "music effect". A music effect is used as a spot-effect to accentuate or compliment on-screen action

Task C

For a 5.1 system, the ITU definition of loudspeaker system placement is mandatory.

Weighting

Task C is double weighted.

Assignment 309 Surround sound film audio

Tasks

Background information

Because the candidate needs to demonstrate the full range of audio effects a maximum of two music-effects is allowed to be incorporated within this assignment.

In this set of tasks, candidates will produce the following three products:

- stereo audio dub synchronised to the film clip of a soundtrack encoded onto a DVD between 2-4 minutes in length
- 5.1 surround sound mix (minimum requirement)
- portfolio containing a film storyboard, report and evaluation.

Task A Record music and effects (M&E)

Candidates will be assigned a film and storyboard by their tutor to develop a soundtrack.

Candidates are required to complete the following:

- analyse the film and storyboard to develop a new audio soundtrack
- map and key a timeline of 12 or more audio effects
- experiment, develop and record audio effects
- source or commission audio requirements.

An outline of the audio effects and any music should be mapped out on the storyboard timeline and keyed to any spoken words (if required) by the script.

Candidates will then need to use a professional location recording medium, such as CD, DVD, HD, DAT or 15-30 ips analogue, to record their audio material. All recordings should then be compiled onto one master CD, DVD or DAT, labelled and ready to download into a video editing and audio dubbing system.

Candidates should keep log/diary of ideas, recording techniques and equipment used for the audio material.

Assignment 309 Surround sound film audio

Tasks

Task B Integrate music and sound/Foley effects with film clips

Candidates are required to use hardware and software systems to edit and dub sound to picture. They will create a series of stereo audio dubs for the film, consisting of at least 12 separate audio effects.

Candidates must evaluate this product with a view to how it can later be developed into a surround sound mix. They must produce the following.

- DVD of the film clip and stereo soundtrack
- proposals for spatial imaging of audio effects in the surround field.

Candidates must update their log/diary with comments on the following areas of the project:

- software used
- hardware used
- stem mixing
- audio synchronisation.

Task C Encode surround sound and produce a report

Candidates must now develop their audio materials to provide a 5.1 surround sound audio mix to accompany the film clip which they have been allocated.

Candidates should encode and render their product for playback on an external 5.1 surround sound system. They should set up the surround sound system for monitoring purposes, keeping records of all settings (eg recall/track-sheet) and loudspeaker positions.

Candidates are required to produce a report (approximately 750-1000 words) reviewing the process/project (using their log/diary as reference) including the following:

- description of the surround sound system used
- differences in specifications and options
- research into bass managed and non-bass managed systems
- diagram of surround sound speaker positions
- keyed timeline of audio effects and all routing information
- notes regarding the rendering process.

Assignment 309 Surround sound film audio

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
A	<p>produced a timeline that maps audio effects to the film</p> <p>submitted a labelled compilation of the minimum number of audio effects</p> <p>developed audio effects that are fit for purpose</p> <p>created a log/diary providing the minimum relevant information required by the task</p>	<p>mapped and keyed all sound effects to annotated and detailed timeline</p> <p>experimented in the development and recording of audio effects</p> <p>showed clear analysis of the film and audio requirements</p> <p>created a detailed log/diary</p>	<p>commissioned and created all audio pieces to a professional standard</p> <p>created a log/diary which explains thoughts, ideas and creativity in the creation and development of innovative audio effects</p>

Assignment 309 Surround sound film audio

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
B	<p>accurately synchronised sound effects to film clip</p> <p>submitted a DVD of the film clip and stereo soundtrack</p> <p>submitted feasible proposals for spatial imaging</p> <p>updated their log/diary providing the minimum relevant information required by the task</p>	<p>produced a stereo soundtrack which is well balanced with no unwanted audio synchronisation problems</p> <p>updated their log/diary with detailed information</p>	<p>produced a stereo soundtrack to professional standards</p> <p>submitted informed proposals showing creative use of spatial imaging</p>

Assignment 309 Surround sound film audio

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
C	<p>connected all surround sound equipment as required and submitted diagrams</p> <p>encoded and rendered DVD master</p> <p>kept records of all settings</p> <p>produced a report which includes minimum required by the task</p> <p>included notes regarding the encoding/rendering process</p> <p>provided a keyed timeline of audio effects and all routing information</p> <p>logged all technical issues</p>	<p>produced results which show some creative enhancement of spatial imaging in the surround field</p> <p>presented all information in a clear, logical sequence</p> <p>provided clear and detailed relevant description of surround sound system</p> <p>produced a report analysing the overall project development</p>	<p>provided hardcopy of entire final piece in the form of a graphical timeline</p> <p>provided strong evidence of clear thinking and analytical skills</p> <p>created detailed notes that show a high level of evaluation and understanding of surround sound</p>

Assignment 309 Surround sound film audio

Candidate feedback sheet

Candidate name:

Task & date	Assessor's comments (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 309 Surround sound film audio

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade for task	Mark
			Pass (1 mark) Credit (2 marks) Distinction (3 marks)
A	Audio master, keyed timeline, log/diary		
B	DVD, proposals, log/diary		
Task	Evidence	Grade for task	Mark
			Pass (2 mark) Credit (4 marks) Distinction (6 marks)
C	Archived data, DVD master, report		
=Total mark for all graded tasks			
Divided by			÷ 4
=Average mark for tasks			
Overall grade (see conversion chart)			

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

All parts of the tasks must be passed to allow a grade to be claimed.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 310 Live sound and performance technology

Assignment composition

Outcomes	Task coverage	Evidence
1. Assess the PA and performance requirements for events	Task A PS: 1.1, 1.2, 1.3 UK: 1.1,1.2,1.3	Feasibility report version 1
2. Implement health and safety procedures	Task B PS: 2.1, 2.2, 2.3 UK: 2.1, 2.2, 2.3, 2.4	Feasibility report version 2
3. Rig and operate PA equipment for live events	Task C PS: 3.1, 3.2 UK: 3.1, 3.2	Tutor observation notes, audio visual recording
	Task D PS: 3.1, 3.2 UK: 3.1, 3.2	Evaluation report, support documentation

Assignment 310 Live sound and performance technology

Assessor Guidance

General guidance

The live event could be a large full-scale show or a small-scale presentation or PA conference.

Candidates can choose to demonstrate any sound/music related company or product, or work with live musicians and performers; this might require that candidates and teaching staff might need to work outside normal timetabled hours in order to deliver this assignment, for example, this assignment could be used to promote an end of year show or give candidates an opportunity to act as technical support for a broader college event, exhibition or concert.

Every public building has a set of health and safety protocols and rules, without knowledge of these candidates cannot work professionally in a venue.

Recommended reading: Sound for the Theatre by Graham Walne - Black/Theatre Arts.

Recommended web link: <http://www.hse.gov.uk>

Task C

Tutors should keep an observation checklist in order to make notes and grade each candidate in the planning, setting-up and realising of the live event.

Candidates may be required to make modifications (eg lighting, staging, etc).

Rehearsals are recommended.

Weighting

Tasks C and D are double weighted

Assignment 310 Live sound and performance technology

Tasks

Background information

This assignment is to be researched, developed and presented in teams of two to four candidates. It is essential that candidates use their previous knowledge of acoustics and sound systems to deliver this assignment effectively.

Candidates need to submit their own work individually. Candidates' individual contributions will be continuously assessed throughout the project by the assessor by means of observation notes.

The project's aims are to develop and contribute towards a live event and deliver this work to a live audience.

The project will consist of four stages:

- feasibility report/treatment
- pre-production rehearsals
- live event with audience
- post-production report and evaluation.

Task A Produce a feasibility report

Candidates are required to research and produce a feasibility report consisting of a proposal for the live sound re-enforcement requirements for a live production at a venue.

Candidates must make notes relating to the likely programme of events at the venue to include all musical acts, dialogue-based acts/events and other types of act requiring sound re-enforcement. Candidates should examine any written proposals of technical requirements (if available) from acts to be incorporated in the production. A timetable/outline of the production must be presented along with a schedule of production meeting dates.

It is essential to identify team roles within the group. Each candidate should be able to clearly state their exact role in the proceedings for the following task. Tutors will help negotiate the taking on of roles by members of the group to ensure a fair and even work load is distributed between members of the group.

Task B Update feasibility study

Once the feasibility report has been approved by the tutor, candidates will need to identify the venue and the sound system required for the live event. They will need to select the sound equipment required for the event, along with any acoustic modifications (customised requirements) to the room/venue.

Candidates must include a preliminary risk assessment and outline any health and safety issues and in-house policies of the venue. They must also hold at least two production meetings.

All information and notes should be used to refine and update the feasibility study as version 2.

Assignment 310 Live sound and performance technology

Tasks

Task C Plan and realise the live event

Using the feasibility study from tasks A and B above, candidates are required to plan and realise the live event. The event should contain as a minimum:

- two pieces of original music or SFX (pre and post show music to set the mood for the event)
- at least two microphones
- at least two other live audio sources

Candidates must set-up sound equipment whilst working effectively as a team. After the event, all equipment will need to be packed away efficiently and professionally and the venue left as it was found.

The live event should be captured with an audio visual recording.

NB. Candidates will be observed by their tutor whilst carrying out this task.

Task D Produce an evaluation

Candidates are required to evaluate the live event both technically and creatively including their own contribution and that of others. The evaluation should be approximately 1000-1500 words. The evaluation should be supported by the following documentation, where appropriate:

- production notes
- diagrams of the technical systems used
- floor plans
- scripts
- running orders
- cue sheets
- plot sheets
- production meeting schedules
- production meeting minutes
- time line of event
- copies of any tapes, discs and recorded media
- log/diary.

Assignment 310 Live sound and performance technology

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
A	<p>produced a basic feasibility report for a live event</p> <p>made a limited attempt to present information in a clear, logical sequence</p> <p>identified technical sound requirements</p> <p>identified possible audio requirements</p> <p>planned at least two production meetings</p>	<p>produced a detailed feasibility report</p> <p>presented information in a clear, logical sequence</p>	<p>produced a feasibility report showing a high level of technical analysis</p> <p>provided strong evidence of clear thinking and analytical skills</p>

Assignment 310 Live sound and performance technology

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
B	<p>identified suitable venue, sound system and equipment</p> <p>identified any relevant acoustical modifications (only if required)</p> <p>completed a risk assessment showing a good level of critical analysis and identification of remedial solutions</p> <p>identified health and safety issues and policies of the venue</p> <p>held at least two production meetings</p> <p>updated the feasibility report with minimum required information</p> <p>made a limited attempt to present information in a clear, logical sequence</p>	<p>made any acoustical modifications to the room (only if required)</p> <p>updated the feasibility report with detailed information</p> <p>presented information in a clear, logical sequence</p>	<p>updated the feasibility report showing a high level of technical analysis</p> <p>provided strong evidence of clear thinking and analytical skills</p>

Assignment 310 Live sound and performance technology

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
C	<p>set-up and operated equipment effectively</p> <p>all equipment was de-rigged and packed away efficiently and professionally</p> <p>produced results which demonstrate good technical and creative understanding of sound</p> <p>worked as part of a team</p>	<p>contributed to all aspects of the event effectively</p> <p>planned to take account of potential problems</p> <p>demonstrated an ability to effectively work well as part of a team</p> <p>communicated creative/technical ideas effectively</p> <p>sought feedback and advice from others</p>	<p>provided strong evidence of clear thinking and problem solving skills</p> <p>interacted and communicated with others in a professional manner on technical and creative issues</p> <p>analysed opinions/advice/reactions and used constructively</p>

Assignment 310 Live sound and performance technology

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
D	<p>provided the minimum relevant information required by the task</p> <p>made a limited attempt to present information in a clear, logical sequence</p>	<p>provided clear evidence of relevant information required by the task</p> <p>provided support material which are referenced</p> <p>presented information in a clear, logical sequence</p>	<p>provided clear and consistent evidence of relevant information required by the task</p> <p>analysed the information showing evidence of evaluation</p> <p>provides strong evidence of clear thinking and analytical skills</p> <p>provided support materials indicating clear evidence of understanding</p>

Assignment 310 Live sound and performance technology

Candidate feedback sheet

Candidate name:

Task & date	Assessor's comments (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 310 Live sound and performance technology

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade for task	Mark Pass (1 mark) Credit (2 marks) Distinction (3 marks)
A	Feasibility report version 1		
B	Feasibility report version 2		
Task	Evidence	Grade for task	Mark Pass (2 mark) Credit (4 marks) Distinction (6 marks)
C	Tutor observation notes, audio visual recording		
D	Evaluation report, support documentation		

=Total mark for all graded tasks

Divided by

÷ 6

=Average mark for tasks

Overall grade
(see conversion chart)

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

All parts of the tasks must be passed to allow a grade to be claimed.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 311 Digital broadcast network media

Assignment composition

Outcomes	Task coverage	Evidence
1. Record and import digital video and audio media files	Task Ai PS: 1.2, 1.3, 1.4, 1.6 UK: 1.1, 1.2, 1.5, 1.7	Audio visual content (raw)
	Task Aii PS: 1.2, 1.3, 1.4, 1.5, 1.6, 1.7 UK: 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8	Audio visual content (edited)
2. Produce digital media files conversions	Task Bi PS: 2.1, 2.2, 2.5 UK: 2.1	DVD disc
	Task Bii PS: 2.1, 2.2, 2.3, 2.4, 2.5 UK: 2.1	Archived podcast and online content
	Task C UK: 1.1-1.8, 2.1	Evaluation

Assignment 311 Digital broadcast network media

Assessor Guidance

Task Ai

Ideally, the camcorder should have a USB or firewire out port.

Ideally, the content should be recorded in one or two takes, which will greatly help the editing procedure later on.

Weighting

Task Ai and Bii are weighted double.

Assignment 311 Digital broadcast network media

Tasks

Task Ai Create a basic library of media

Candidates are required to produce their own digitally recorded video content. This should be completed using at least one digital camcorder in either HD or tape format. Still images should also be captured for incorporation into the final product

Sound should be recorded at source using at least one professional microphone or more complex audio feeds from a small mixing console.

Candidates should create a basic library of media content to include as a minimum:

- moving image sequences (video)
- still image/s
- soundtrack.

The content should be topical, appeal to all age groups and be viable as a broadcast item.

Candidates are required digitise, save and archive media files into a suitable format for import to a video editing program in Task Aii below. All files should be saved into a single media-library project folder.

Assignment 311 Digital broadcast network media

Tasks

Task Aii Compile a video sequence

In this task candidates will use a suitable piece of audio/video software to compile a video sequence from their library of media files. Candidates are required to compile and edit the audio visual content (from task Ai above) within the DAW editor to a synchronised timeline.

At least one still image must be incorporated within the video sequence.

To compile the content, candidates should consider the following:

- running order of visuals
- timeline-based editing
- repeat of images
- edit decision list (EDL)
- placement and timing of audio and visuals
- scripts
- soundtrack audio pieces or atmospheric layers
- foley effects
- enhanced dynamics/effects
- triggered spot effects/sounds/ambience
- dialogue.

Candidates are also required to clean up and add any additional content that may assist with the viewer's experience. They should add/import the following, if required:

- background effects
- graphic colours
- titles
- subtitles
- text aligned information
- credits.

Candidates are required to save and archive media files into their own project folder.

Assignment 311 Digital broadcast network media

Tasks

Task Bi Export to test DVD and review

Candidates are required to use the content from task Aii above for this task.

Candidates should export the final video sequence onto a DVD disc for testing/review.

Candidates should review all content on the disc using an independent DVD player/screen/audio monitor system and correct any errors noted.

This may include any of the following:

- post production edits
- cut, copy, paste, delete visuals and audio files
- image correction
- final content and presentation review
- enhance audience experience.

Candidates should re-burn a final post-production DVD of edited content.

Task Bii Create a podcast

Candidates are required to upload and broadcast the completed audio-visual content as edited in task Bi above. Candidates must migrate files and produce a podcast using publishing software in order to upload and broadcast media content to a delivery minimum of 64 kbps. They must syndicate (RSS, really simple syndication) the podcast to three categorised podcast portals or feeds.

Candidates are required to save their podcast as an archive.

Finally, candidates are required to upload and broadcast their final media files to an online presence (eg youtube or myspace account). Candidates must use FTP or media publishing upload software in order to upload and broadcast media content to a delivery minimum of 64 kbps.

Task C Write an evaluative report

Candidates are required to produce an evaluation of at least 250 words on the success of the tasks outlined in tasks A and B above. The evaluation should include:

- technical quality
- media file formats used
- audio visual audience experience
- contents' suitability for purpose
- assessment of own role.

Assignment 311 Digital broadcast network media

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
Ai	labelled product with accurate and complete information	planned to take account of potential problems (contingency planning)	carried out task in a organised and professional manner
	planned the audio visual content sufficiently to complete the task	carried out the task in a logical manner	solved any technical issues independently
	followed relevant processes correctly	demonstrated efficiency in carrying out processes eg by multi-tasking	analysed opinions/advice/reactions and used constructively
	identified and logged any technical issues	solved any technical issues with support	interacted and communicated with others in a professional manner on technical and creative issues
	used techniques, materials and equipment correctly	used techniques, media materials and resources effectively	used several cameras and microphones
	used one camera and microphone	made creative use of equipment and software	
	provided quality, usable content	communicated creative/technical ideas effectively	
		followed protocols respecting the creative processes	
		sought feedback and advice from others	

Assignment 311 Digital broadcast network media

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
Aii	labelled product with accurate and complete information edited audio visual content sufficiently to complete the task followed relevant processes correctly identified and logged any technical issues used techniques, materials and equipment correctly	planned to take account of potential problems (contingency planning) carried out task in logical manner demonstrated efficiency in carrying out processes eg by multi-tasking solved any technical issues with support used techniques, media materials and resources effectively made creative use of equipment and software communicated creative/technical ideas effectively followed protocols respecting the creative processes sought feedback and advice from others	carried out task in a organised and professional manner solved any technical issues independently analysed opinions/advice/reactions and used constructively interacted and communicated with others in a professional manner on technical and creative issues

Assignment 311 Digital broadcast network media

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
Bi	labelled product with accurate and complete information planned the task sufficiently to complete product completed the product to minimum requirements followed relevant processes correctly identified and logged any technical issues used techniques, materials and equipment correctly made additional amendments to content following review	planned to take account of potential problems (contingency planning) carried out task in logical manner demonstrated efficiency in carrying out processes eg by multi-tasking solved any technical issues with support used techniques, media materials and resources effectively made creative use of equipment and software communicated creative/technical ideas effectively followed protocols respecting the creative processes sought feedback and advice from others	carried out task in a organised and professional manner solved any technical issues independently analysed opinions/advice/reactions and used constructively interacted and communicated with others in a professional manner on technical and creative issues

Assignment 311 Digital broadcast network media

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
Bii	labelled product with accurate and complete information	planned to take account of potential problems (contingency planning)	carried out task in a organised and professional manner
	planned the task sufficiently to complete podcast and online content	carried out task in logical manner	solved any technical issues independently
	followed relevant processes correctly	demonstrated efficiency in carrying out processes eg by multi-tasking	analysed opinions/advice/reactions and used constructively
	identified and logged any technical issues	solved any technical issues with support	interacted and communicated with others in a professional manner on technical and creative issues
	used techniques, materials and equipment correctly	used techniques, media materials and resources effectively	
	used software to publish content as podcast with feeds and audio visual online access	made creative use of equipment and software	
		communicated creative/technical ideas effectively	
		followed protocols respecting the creative processes	
		sought feedback and advice from others	

Assignment 311 Digital broadcast network media

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
C	<p>provided the minimum relevant information required by the task</p> <p>made a limited attempt to present information in a clear, logical sequence</p> <p>evaluated universal file formats</p>	<p>provided clear evidence of relevant information required by the task</p> <p>provided illustrations which are referenced</p> <p>presented information in a clear, logical sequence</p> <p>worked independently</p>	<p>provided clear and consistent evidence of relevant information required by the task</p> <p>provides strong evidence of clear thinking and analytical skills</p> <p>provided illustrations which indicate clear evidence of understanding</p> <p>provided evidence of creative and original thought</p>

Assignment 311 Digital broadcast network media

Candidate feedback sheet

Candidate name:

Task & date	Assessor's comments (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 311 Digital broadcast network media

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade for task	Mark Pass (1 mark) Credit (2 marks) Distinction (3 marks)
Aii	Audio visual content (edited)		
Bi	DVD disc		
C	Evaluation		
Task	Evidence	Grade for task	Mark Pass (2 mark) Credit (4 marks) Distinction (6 marks)
Ai	Audio visual content (raw)		
Bii	Archived podcast and online content		

=Total mark for all graded tasks

Divided by

÷ 7

=Average mark for tasks

Overall grade

(see conversion chart)

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

All parts of the tasks must be passed to allow a grade to be claimed.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 312 Audio mastering and restoration

Assignment composition

Outcomes	Task coverage	Evidence
1. Describe historical formats and archival problems	Task A PS: 1.1 UK: 1.1, 1.2, 1.3, 1.4	Report
2. Carry out basic mastering processes	Task B PS: 2.1, 2.2, 2.3, 2.4, 2.5 UK: 2.1, 2.2, 2.3	Production master, notes
3. Restore and preserve audio	Task C PS: 3.1, 3.2, 3.3, 3.4, 3.5 UK: 3.1, 3.2, 3.3, 3.4	Mastered CD, notes

Assignment 312 Audio mastering and restoration

Assessor Guidance

General guidance

Copyright notice – tutors must ensure that audio materials in all formats are **copyright free or copyright-cleared**. Materials can be sourced from the candidate's previous work, other candidates work or original recordings. Some commercial recordings are copyright free, but it is the centre's responsibility to check this.

Candidates may download copyright-free archived period/historic materials from the following recommended websites:

<http://www.earthstation1.com>

http://dmoz.org/Arts/Music/Sound_Files/Samples_and_Loops/

Please note that City & Guilds do not accept any responsibility for the content of the above websites since they are completely independent of City & Guilds and these links may change without warning or notification.

Assignment 312 Audio mastering and restoration

Tasks

Background information

The assignment allows candidates to develop the practical skills needed to perform basic mastering and restoration tasks. Candidates will demonstrate the ability to manage a mastering/restoration project and produce a professional quality product.

Task A Produce a report

Candidates are required to research and write a report outlining the following:

- different types of historical audio disc formats
- manufacturing techniques for each format
- respective requirements for equipment used for reproducing, restoring and preserving their audio signals.

Candidates are required to evaluate the characteristic sound quality of reproduction from historical disc formats:

- 78 rpm shellac disc
- 33.3 rpm vinyl microgroove disc (mono/stereo)
- 45 rpm vinyl disc (7, 12 inch).

This will require the setting-up of a disc replay system using a professional monitoring system.

Candidates should add to their report, evaluating both technical aspects (noise, frequency bandwidth, pitch stability, etc) and subjective aspects (warmth, tone, dynamics, etc) of the sound.

Assignment 312 Audio mastering and restoration

Tasks

Task B Produce a master and keep notes

Candidates are required to transfer audio source materials from the following formats onto a suitable DAW platform:

- analogue tape
- DAT
- CD
- DVD.

NB. The audio source materials should be selected from the candidates' previous recordings, otherwise original recordings must be made.

Where possible a digital copy to the DAW is preferable to an analogue one. Where an analogue copy is made of a digital format, candidates should make notes as to the limitations of this system of transfer and why it was adopted in this case.

This material must then be compiled into a pre-determined sequential order with attention paid to start/stop times, duration, spacing, edits and cross-fades.

Candidates are required to listen to and evaluate the transferred audio tracks as separate audio files and also to review the running order of these files for the compilation.

Candidates are required to:

- make level adjustments
- perform any processing that may be required
- reduce or remove any noise.

Candidates are required to keep comprehensive mastering logs/notes outlining their completed mastering process.

Candidates are required to produce a professional quality production master of the audio sequence on a recognised format that is presented to industry standards.

Assignment 312 Audio mastering and restoration

Tasks

Task C Restore audio and keep notes

Candidates are required to clean and inspect a copyright-free analogue disc, set-up a suitable playback system and transfer the audio signal to a high resolution DAW platform. They should keep notes throughout this process.

NB. If candidates cannot obtain a copyright-free analogue disc, they are permitted to use suitable downloaded un-restored audio.

Candidates are required to analyse the restoration requirements of the original audio format, recording their assessments using comprehensive restoration timeline log and mastering notes.

Candidates are required to produce a restored copy of the original audio format using any appropriate audio processing software. This restored copy should be labelled and archived along with the original audio format file onto a CD.

Candidates should submit this with documentation outlining archival information and storage requirements.

Assignment 312 Audio mastering and restoration

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
A	<p>provided the minimum relevant information required by the task</p> <p>provided limited evidence of research</p> <p>provided information from a limited use of sources</p> <p>made a limited attempt to present information in a clear, logical sequence</p> <p>correctly set-up a high quality system for the reproduction of audio signals transferred from analogue disc</p> <p>noted the obvious technical aspects and limitations of audio from analogue disc reproduction</p>	<p>provided information which shows evidence of relevant research using a variety and range of sources</p> <p>provided clear evidence of relevant information required by the task</p> <p>demonstrated evidence of analysing research information</p> <p>provided illustrations which are referenced</p> <p>presented information in a clear, logical sequence</p> <p>evaluated the technical and subjective aspects of audio from analogue disc reproduction</p>	<p>provided information which shows evidence of a high level of research and a wide range of sources which are clearly referenced</p> <p>provided clear and consistent evidence of relevant information required by the task</p> <p>analysed the sound quality and provided information which shows evidence of interpretation and application</p> <p>provides strong evidence of clear thinking and analytical skills</p> <p>illustrations indicate clear evidence of understanding</p>

Assignment 312 Audio mastering and restoration

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
B	<p>correctly transferred the required audio material onto a DAW platform</p> <p>compiled the audio tracks into a sequential running order</p> <p>undertaken any editing that is required for the audio tracks timing and spacing within the sequential running order</p> <p>correctly used PQ codes</p> <p>evaluated the compiled audio tracks and performed basic level adjustments</p> <p>performed signal processing, as required</p> <p>removed any obvious noise problems</p> <p>kept basic mastering notes</p> <p>produced a production master of the sequenced audio</p>	<p>removed all noise problems</p> <p>produced detailed notes on the mastering process</p> <p>produced a master compilation to a high standard</p>	<p>compiled and processed the audio track sequence to professional standards</p> <p>produced a comprehensive set of notes detailing the mastering process</p> <p>produced a professional quality production master</p>

Assignment 312 Audio mastering and restoration

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
C	<p>provided notes and timeline log outlining the restoration process</p> <p>correctly transferred the audio materials to a high quality DAW platform</p> <p>produced a restored copy of the audio using some processing</p> <p>transferred the restored audio files onto an archival format</p> <p>provided basic archival information</p> <p>used copyright-free/cleared audio materials</p>	<p>provided detailed notes and comprehensive timeline log outlining the restoration process</p> <p>produced a good quality restored copy using a range of processing</p> <p>provided detailed archival information</p>	<p>provided a comprehensive set of notes outlining the restoration process</p> <p>produced a professional quality restoration of the audio</p> <p>provided comprehensive archival information</p>

Assignment 312 Audio mastering and restoration

Candidate feedback sheet

Candidate name:

Task & date	Assessor's comments (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 312 Audio mastering and restoration

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade for task	Mark Pass (1 mark) Credit (2 marks) Distinction (3 marks)
A	Report		
B	Production master, notes		
C	Mastered CD, notes		
=Total mark for all graded tasks			
Divided by			÷ 3
=Average mark for tasks			
Overall grade (see conversion chart)			

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

All parts of the tasks must be passed to allow a grade to be claimed.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 313 Sound studio facility design

Assignment composition

Outcomes	Task coverage	Evidence
1. Plan a studio conversion	Task A PS 1.1, 1.2, 1.3 UK 1.1, 1.2, 1.3, 1.4	Feasibility report (ie floor plans, drawings, calculations, lists, timetables)
2. Calculate studio construction costs	Task B PS 2.1, 2.2, 2.3 UK 2.1, 2.2	Spreadsheet, specification sheets
3. Produce studio conversion design plans	Task C PS 3.1, 3.2, 3.3, 3.4 UK 3.1, 3.2	Floor plan, specification sheets, sub-diagrams

Assignment 313 Sound studio facility design

Assessor Guidance

General guidance

Assessors are encouraged to help candidates to choose an appropriate space – the space that the candidate chooses could be a room in the college or a space the candidate is interested in developing for their own purposes.

Assessors should ask candidates to submit a copy of the floor plan after each task before the candidate continues to develop it.

Task A

Assessors should encourage candidates to produce floor plans which would ideally incorporate standard technical drawings and icons.

Task B

Candidates should be able to use spreadsheets confidently and to a good level.

Grading

Task B is pass only.

Assignment 313 Sound studio facility design

Tasks

Background information

In the following tasks, candidates will research, cost and design a studio environment capable of housing a 24-48 track recording facility. Candidates are expected to deliver a series of completed research exercises for their proposed studio designs along with detailed project planning stages that should produce a report for a potential new studio build.

Candidates are required to choose an existing used or unused building space they feel is suitable for conversion to a working studio environment.

Task A Produce a feasibility report

Candidates are required to produce a feasibility report and rationale for selection of a building space with a control room and at least one isolated live performance area, to include:

- list of any health and safety considerations
- accurately measured floor plan of building area(s)
- list of existing room surfaces and materials
- proposed plans for new working area layout.

NB. The design of more complex facilities with more than one isolated live performance area will enable candidates to achieve a higher grade.

Candidates must estimate the following first stage requirements for building preparation:

- list any important structural/infrastructure issues
- estimated calculations of new designed room responses
- preliminary list of building materials and costs required
- proposed timetable of labour costs and completion
- projected external and internal health and safety requirements.

Candidates are required to report any changes that may impact on initial design plans at all stages (ie asbestos report, signs of subsidence, noted previous incorrect building work, etc).

Assignment 313 Sound studio facility design

Tasks

Task B Produce spreadsheets

Candidates are required to produce spreadsheets including quantities and unit costs (to include VAT and delivery) in order to calculate the construction costs to build the recording facility. The spreadsheet must include as a minimum:

- all building materials required
- HVAC (heating, ventilation and air conditioning)
- telecommunications and networking
- furnishings and fittings
- power requirements (mains intake) and fittings
- health and safety implementation
- furniture, cosmetics and decorations
- soundproofing treatments (including noise reduction coefficients (NRC), and noise control (NC))
- installation and labour costs.

Candidates are required to research and provide specification sheets (where available) for all materials to be used.

Assignment 313 Sound studio facility design

Tasks

Task C Complete final floor plans

During this task, candidates should review all previous data produced and update details of previous design plans wherever necessary, such as room lengths, widths and heights.

Candidates must further develop their studio floor plan by linking it to sub-diagrams showing details of the following structural elements:

- walls
- floors
- windows
- doors.

NB. Candidates can either create diagrams/drawings from scratch or use appropriately referenced specification sheets from commercial product suppliers.

Candidates are required to supply the following information for each of the structural elements above:

- side views of construction/cut-away diagrams
- materials used/construction methods
- dampening and sound proofing properties
- all dimensions.

Candidates must further develop their studio floor plan to incorporate the location of the following items:

- fire exits
- health and safety features
- alarm points
- power and mains supply points
- fuse boxes
- services and utilities
- telecommunications
- lighting
- cable, trunking and audio tie-lines
- furniture
- storage.

Assignment 313 Sound studio facility design

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
A	<p>researched and measured a building area to accommodate a recording facility with at least one separate live performance area</p> <p>noted health and safety and structural issues</p> <p>listed existing room surfaces</p> <p>produced a feasibility report including all information required at a basic level</p> <p>drafted floor plans with estimated room responses</p>	<p>produced a floor plan showing a building that will accommodate several isolated recording areas</p> <p>created a feasibility report showing information to a high level of detail</p> <p>created a feasibility report showing information to a high level of detail</p>	<p>created a feasibility report showing a high level of understanding of commercial facility service requirements</p>

Assignment 313 Sound studio facility design

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
B	Created a spreadsheet detailing construction and unit costs provided specifications sheets where available for all building materials and fittings	Pass only	Pass only
C	updated all floor plans to accommodate a recording facility with at least one separate live performance area drafted sub-diagrams and floor plans which show basic details	updated all floor plans showing a building that will accommodate several isolated recording areas drafted sub-diagrams and floor plans which are clearly referenced	drafted detailed sub-diagrams and floor plans which demonstrate clear understanding of commercial facility service requirements

Assignment 313 Sound studio facility design

Candidate feedback sheet

Candidate name:

Task & date	Assessor's comments (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment 313 Sound studio facility design

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Grade for task	Mark Pass (1 mark) Credit (2 marks) Distinction (3 marks)
A	Feasibility report (ie floor plans, drawings, calculations, lists, timetables)		
B	Spreadsheet, specification sheets (pass only)		
C	Floor plan, specification sheets, sub-diagrams		
=Total mark for all graded tasks			
Divided by			÷ 2
=Average mark for tasks			
Overall grade (see conversion chart)			

Conversion chart	
Average	Grade
1-1.5	Pass
1.6-2.5	Credit
2.6-3	Distinction

All parts of the tasks must be passed to allow a grade to be claimed.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

Assignment 314 Advanced audio electronics

Assignment composition

Outcomes	Task coverage	Evidence
1. Calculate and measure audio signals	Task A PS: 1.1 UK: 1.2	Calculations
2. Measure audio equipment parameters	Task Bi PS: 1.1 UK: 1.2	Calculations, circuit diagram
3. Construct and measure audio circuit	Task Bii PS: 1.1, UK: 1.2	Calculations, circuit diagram
	Task C PS: 1.2, 2.1, 3.1, 3.2, 3.3, 3.4 UK: 1.1, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3	Enclosure, circuit and portfolio

Assignment 314 Advanced audio electronics

Assessor Guidance

Task A

Tutors should provide candidates with combinations of component values that produce results within the audio spectrum.

Each candidate should be given different values to work from.

If tutors wish to provide candidates with formative opportunities, the values used should not then be used for this formal, final assessment.

Tasks Bi and Bii

The tutor should assign proprietary cables that candidates will then research to find the relevant cable parameters.

Task C

The Internet offers many circuits suitable for these applications, however many also supply a circuit layout which is part of this assignment. It is recommended that the tutor create an archive of circuits that candidates can use.

Vero board or as it is known generically, “strip board”, is the minimum standard required of the circuit board construction. If PCB fabrication facilities are available, they may be used, but only if they are available to all candidates.

The centre should provide a sufficient standard of test gear to allow the measurement of the parameters.

Grading

Task C is the only graded task, however all tasks must be passed to allow an overall grade to be given.

Assignment 314 Advanced audio electronics

Tasks

Background information

For this set of tasks, candidates will be given values by their tutor.

Task A Carry out calculations

Using the two sets of given values, carry out the following calculations:

Configuration	Calculation
Series resistance attenuator	from the supplied resistances, calculate the outputs in dB compared to the input.
Transformer	from the supplied turns ratios, calculate: <ul style="list-style-type: none">• voltage ratios• current ratios• impedance ratios.
High Pass Filter using a series capacitance resistance network (CR HPF)	from the supplied capacitances and resistances, calculate the frequencies where the output is -3dB compared to the input.
High Pass Filter using a series capacitance resistance network (CR HPF)	from the supplied capacitances and resistances (as above), calculate the total impedances of the CR HPF at 1000Hz.
Low Pass Filter using a series resistance capacitance network (RC LPF)	from the supplied resistances and capacitances, calculate the frequencies where the output is -3dB compared to the input.
Low Pass Filter using a series resistance capacitance network (RC LPF)	from the supplied resistances and capacitances (as above), calculate the total impedances of the RC HPF at 1000Hz.
Parallel inductance and capacitance	from the supplied inductances and capacitances calculate the resonant frequencies.

Candidates are required to check all calculations and revise if necessary to ensure accuracy.

Assignment 314 Advanced audio electronics

Tasks

Task Bi Carry out calculations and produce a circuit diagram

A front-of-house mixing console (FOH) is situated a distance from the stage at a large music festival.

With the values supplied by your tutor calculate:

1. Console output impedance
2. Length of proprietary cable from console to on-stage amplifier.

Calculate the frequency created by the output impedance and the cumulative capacitance of the cable, where the signal to the amplifier input is reduced by 3dB.

Submit all working and produce a basic circuit diagram.

Candidates are required to check all calculations and revise if necessary to ensure accuracy.

Task Bii Carry out calculations and produce a circuit diagram

A microphone with a 200 ohm output impedance is fed down the same length and type of cable as Task Bi above from the stage to the FOH console.

Calculate the frequency where the signal to the amplifier input is reduced by 3dB that has been created by the microphone output impedance, the cumulative cable capacitance and the standard input impedance of the microphone input of the console.

Submit all working and produce a circuit diagram.

Candidates are required to check all calculations and revise if necessary to ensure accuracy.

Assignment 314 Advanced audio electronics

Tasks

Task C Construct an enclosure and circuit and produce a portfolio

Candidates are required to source a circuit for **one** of the following products:

- operational amplifier (op amp) based microphone amplifier with an adjustable gain of 60dB maximum
- active DI box with balanced microphone level output
- stereo headphone amplifier capable of supplying 50mW rms per channel.

All circuits should run on a battery supply.

Candidates must source the components, a suitable enclosure and design the circuit layout using a strip board. The candidate should then construct the circuit and enclosure.

Candidates should test the circuit to prove that it works and measure the relevant parameters from the following:

- voltage gain
- frequency response
- bandwidth
- total harmonic distortion
- intermodulation distortion
- signal to noise ratio
- equivalent input noise
- output power
- dynamic range
- clipping point
- headroom
- input impedance
- output impedance.

The candidate should produce a portfolio containing the following

- the circuit diagram and its source
- the circuit layout plan
- the test results and a description of the test gear used
- how the measurements were taken
- a table comparing the test results with professional specifications
- the completed product.

Assignment 314 Advanced audio electronics

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
A	used correct equations shown all calculations produced correct answers	Pass only	Pass only
B	used correct equations shown all calculations produced correct answers provided an accurate circuit diagram	Pass only	Pass only

Assignment 314 Advanced audio electronics

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
Bii	used correct equations shown all calculations produced correct answers provided an accurate circuit diagram	Pass only	Pass only

Assignment 314 Advanced audio electronics

Grading criteria

Candidate name:		Tutor/Assessor signature:	Date:
Task	Pass The candidate has:	Credit The candidate has achieved everything at pass grade and has:	Distinction The candidate has achieved everything at pass and credit grade and has:
C	<ul style="list-style-type: none"> produced a working product produced test reports that address some of the relevant parameters identified and logged technical issues encountered provided basic descriptions of test gear and their operation provided a comparative table 	<ul style="list-style-type: none"> produced test reports that address most of the relevant parameters solved technical problems with support carried out the construction in a logical manner carried out the testing in a logical manner provided descriptions that are detailed 	<ul style="list-style-type: none"> produced a circuit board to professional standards of soldering and neatness produced test reports that address all of the relevant parameters solved any technical issues independently carried out construction in a organised and professional manner carried out testing in a organised and professional manner

Assignment 314 Advanced audio electronics
Candidate feedback sheet



Candidate name:

Task & date	Assessor's comments (The assessor should sign after each feedback session)

Tutor/Assessor signature	Date
Candidate signature	Date

Assignment mark sheet

Candidate name

Candidate number

Centre name

Centre number

Task	Evidence	Available grades for tasks	Candidate's grade
A	Calculations (pass only)	Pass/Fail	
Bi	Calculations, circuit diagram (pass only)	Pass/Fail	
Bii	Calculations, circuit diagram (pass only)	Pass/Fail	
C	Enclosure, circuit and portfolio	Pass/Credit/ Distinction	

All parts of the tasks must be passed to allow a grade to be claimed. The grade for task C is the overall grade for this assignment.

Candidate signature	Date
Assessor signature	Date
Quality assurance co-ordinator signature (where applicable)	Date
External verifier signature (where applicable)	Date

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