

6.13 Module 13: Recording and Mixing 1

Module Title	Recording and Mixing 1
Module NFQ Level (only if an NFQ level can be demonstrated)	7
Module number/Reference	BAAMT204
Parent Programme	BA (Hons) Audio and Music Technology
Stage of Parent Programme	2
Semester	1 and 2
Module Credit Units (FET/HET/ECTS)	ECTS
Module Credit number of Units	10
List the teaching and learning modes	FT
Entry requirements (statement of knowledge, skill and competence)	Learner has earned Level 5 qualification. No previous applications technology ability is required.
Pre-requisite module titles	None
Co-requisite module titles	None
Is this a capstone module? (Yes or No)	No
Staff qualifications (academic, pedagogical and professional/occupational) and experience required. (staff includes workplace personnel who are responsible for learners such as apprentices, trainees and learners in clinical placements)	Staff are required to have at least a Bachelor of Arts (Honours) qualification in Music Technology or related discipline. Industry experience would be a benefit but is not a requirement. Staff are expected to have the Certificate in Training and Education qualification from Griffith College or its equivalent.
Staff/learner ratio per centre (or instance of the module)	For lecture load, ratio of 1:50 lecturer to learner is required and in lab sessions the maximum allowed is 1:25 The lecturer will also have 1 hour per week set aside in their timetable for 1:1 contact with learners who require it or have particular items they want to discuss.
Maximum number of learners per centre (or instance of the module)	50
Duration of the Module	Two Academic Semesters, 24 weeks teaching
Average (over the duration of the module) of the contact hours per week.	3
Physical resources and support required per centre (or instance of the module)	One lecture hall with capacity at least 50 and one computer lab with capacity of 25.

Analysis of Required Learning Effort									
Effort while in contact with staff									
Classroom and Demonstrations	Mentoring and small group tutoring		Other (Specify)		Directed e-learning (hours)	Independent learning (hours)	Other hours (specify)	Work-based learning hours of learning effort	Total Effort (hours)
	Hours	Minimum ratio teacher/learner	Hours	Minimum ratio teacher/learner					
48	1:50	24	1:25			178			250
Allocation of marks (within the module)									
					Continuous Assessment	Supervised Project(s)	Proctored practical	Proctored Written Examination	Total
Percentage contribution					20%	70%	10%		100%

6.13.1 Module Objectives

This module develops the learner's ability to work in a professional recording environment. Learners become competent using large format analog recording consoles in a variety of recording scenarios. Learners expand on the full range of skills required and use best practice to allow for cross platform compatibility.

6.13.2 Minimum Intended Module Learning Outcomes

On successful completion of this module the learner will be able to:

- MLO 13.1 Demonstrate effective use of a large format console in a professional environment.
- MLO 13.2 Evidence an in-depth knowledge of multitrack and stereo recording techniques.
- MLO 13.3 Apply mixing techniques and signal processing.
- MLO 13.4 Examine variable room acoustics.
- MLO 13.5 Apply correct practice for multi-studio workflows in relation to compatibility and interchangeability.

6.13.3 Rationale for inclusion of the module in the programme and its contribution to the overall IPLOs

This module focusses on the learner's skillset for recording and mixing audio. Learners will become proficient in a large studio environment, managing multiple signals and overseeing the entire recording process. This skill will enable learners to approach recordings confidently and so that they are always thinking of the final product. All decisions made, should always consider, and be geared towards producing a high-quality end product, from the recording stage, through editing and into final the final mix. This will assist in the attainment of Programme Learning Outcomes 3 and 6, while also contributing to outcomes 10 and 11.

6.13.4 Information Provided to Learners about the Module

Learners enrolled on this module will receive a copy of the module descriptor and assignment briefs, including an outline of the criteria for assessment.

Previous examples of assignments are also presented to the class.

6.13.5 Module Content, Organisation and Structure

The module is organised to deliver theory through lectures (2 Hours) and supervised tutorials (1 Hour). During tutorials, each learner will have a workstation allowing the lecturer to work individually with learners to demonstrate and explain the material. Some tutorials will take place in a recording studio with large format consoles and variable room acoustics.

The lectures each week will combine lecture delivery and discussion on the material.

Each lecturer has a time allocated for one-to-one meetings with learners as required. These are not mandatory sessions but available either where the lecturer wishes to discuss an element of the module with a learner, or a learner requests a meeting to discuss a particular topic. These sessions focus on academic issues only.

Module Content

Large format consoles in a professional environment

- Competent operation of console.
- Correct gain structure & routing.
- Patching of external signal processors and effects.
- Speed of operation.
- Communication with client.
- Good trouble shooting procedures.

Multi-track and stereo recording techniques

- Correct microphone choice & positioning.
- Instrument positioning within studio.
- Performance notes.
- Editing techniques & corrective practices.

Mixing techniques & signal processing

- Aural quality of final product with respect to balance and tone.
- Creative use of signal processing.
- Good use of corrective technologies for timing and pitch.

Variable room acoustics

- Good interpretation of recording brief.
- An understanding of acoustical range of studio.
- Control of spill and instrument isolation.

Correct practice for multi-studio workflows in relation to compatibility / interchangeability

- Correct 'Save' commands.
- Cross platform compatibility.
- Backwards compatible session files.

6.13.6 Module Teaching and Learning Strategy

Learners are taught using a combination of lectures and practical tutorials.

Tutorials are will take place in recording studios and practical labs and are used to develop the learner's proficiency in recording techniques, editing and mixing.

In addition, learners will need to put in work outside of lectures and tutorials.

Activity	Teaching / Learning Strategy	Learning Environment
Lectures (48 hours)	Lectures / demonstration of music technology equipment and theory / analysis of recording techniques and historical works / flipped classroom discussion and engagement	College
Tutorial (24 hours)	Learning and practice of music technology techniques / training in large recording sessions on an analog console / use of college resources to practice techniques	College / Mac lab
Assignment (96 hours)	Practice learning and perfecting advanced music technology skills	College
Independent Work (82 hours)	Directed and self-directed learning / home study / use of college studio spaces	College / Home

6.13.7 Timetabling, Learner Effort and Credit

The module is timetabled as one 3-hour session to the whole class. This will consist of the 2-hour lecture, and a 1-hour studio tutorial.

The number of credits assigned to this module is our assessment of the learner effort required. It is our view that 10 ECTS of learner effort is required by learners coming new to the material to achieve the learning outcomes required.

6.13.8 Work-based Learning and Practice-placement

There is no work based learning or practical placement involved in the module.

6.13.9 E-Learning

The College VLE is used to disseminate notes, advice and online resources to support the learners. The learners are also given access to Lynda.com as a resource for reference.

6.13.10 Module Physical Resource Requirements

Requirements are for a fully equipped lecture hall and access to one or more recording studios. In the recording studios, there should be an analog mixing console with patchbay. The studio should be equipped with variable room acoustics.

6.13.11 Reading Lists and Other Learning Materials

Recommended Reading

Huber, D. (2013) *Modern recording techniques*. Oxford: Focal Press.

Izhaki, R., (2011) *Mixing audio: concepts, practices and tools*. Oxford; Focal Press.

Katz, B. (2014) *Mastering audio: the art and the science*. Oxford: Focal Press.

Rayburn, R. (2011) *Eargle's The Microphone Book: From Mono to Stereo to Surround - A Guide to Microphone Design and Application*. Oxford: Focal Press

Rumsey, F. & McCormick, T. (2005) *Sound and recording: An Introduction*. Oxford: Focal Press.

Secondary Reading

- Ballou, G. (2015) *Handbook for sound engineers*. Oxford: Focal Press.
- Blauert, J. (1996) *Spatial hearing: the psychophysics of human sound localization*. Boston Mass: MIT Press.
- Everest, F.A. & Pohlmann, K.C. (2015) *Master handbook of acoustics*. New York: Mc Graw-Hill.
- Owsinski, B. (2013) *The Mixing engineer's handbook*. Boston MA: Cengage Learning
- Stavrou, M. (2003) *Mixing with your mind*. Mosmon NSW: Flux Research.
- Hewitt, R. (2015) *Drum Recording Session with Josh Freese* Lynda.com
- Hirsch, S. (2016) *Vocal Production techniques: Editing and Mixing in Pro Tools* Lynda.com
- Darlington, D. (2014) *Mixing techniques with Waves Plugins* Lynda.com

6.13.12 Specifications of Module Staffing Requirements

For each instance of the module, there will be one lecturer qualified to at least Bachelor of Arts (Honours) level in Sound Engineering or equivalent, and with a relevant third level teaching qualification (e.g. Certificate in Training and Education). Depending on numbers a lab assistant may be required. Where this is the case the Assistant will be required to have a sound understanding of music technology and computer based workstations, either through industry experience or academic qualification. For example, a final year Bachelor of Music Production (Honours) learner may be suitable to assist the lecturer in lab sessions. Any lab assistant will work under the supervision of the lecturer.

6.13.13 Module Assessment Strategy

Name	Description	Weighting	Learning Outcomes
Studio Practical Exam	Learners will undergo a 20-minute examination of studio signal flow and mixing console operation. This will examine learners ability to: setup studio for recording, route signals through the mixing console, use foldback mixes, use fx mixes, create a stereo recording through the console.	10%	12.1
Assignment 1: Multi-track recording	Learners are required to make a multi-track recording consisting of at least 24 tracks of recorded audio between 3-4 minutes in duration. Learners must use mono and stereo recording techniques.	30%	12.1 – 12.5
Assignment 2: Continuous assessment	Using the recording from assignment 1, learners will be required to attend formative assessment meetings to monitor progression of the recording through editing stages (editing between takes, timing and pitch corrections), signal processing and mixing.	20%	12.3, 12.5
Assignment 3: Mix	Using the recording from Assignment 1, Learners are required to submit a final mix of the piece. Expected processes learners would use include but are not limited to, compression, equalisation, limiting, gating, de-essing, reverb, delay, etc. Attention should also be paid to sonic clarity, stereo imaging, balance and tone of final mix.	40%	12.3, 12.5

6.13.14 Sample Assessment Materials

Assessment 1

Studio Practical Exam (20 Minutes)

For this examination, your tutor will be your 'Client', and should be treated as such.

You will be required to perform the following tasks, within the allotted time.

- 1: Studio Setup: You should set the mixing console and recording software ready to make a new recording. Be sure to pay attention to all areas of the console and make sure your signal path is ready.
- 2: Signal Routing:
 - The signal should be routed from gain stage through the computer to the stereo master fader.
 - Setup a fold back mix for the client. (Talkback will also be required here.)
 - Process the signal through the mixing console and/or the studio outboard equipment. (Tutor will decide)
 - Apply a minimum of two time based effects to the signal, using the mixing console and patch bay. (You may use computer based effects units)

3: Stereo Mix-down: Record the master mix with all processing and effects to a stereo track on the computer.

You will be assessed on:

- Ability to complete each of the tasks set out above
- Ability to identify problems and rectify them.
- Communications skills
- Time keeping – completing the task within the time frame.

You will also be expected to employ appropriate trouble shooting techniques to eliminate any problems during the process.

(20-minute timeframe)

Assessment 2

Multi-track Recording

Working independently, you will undertake a recording project to include no less than 24 tracks of recorded audio. The recording should be 3-4 minutes in duration. **The form of which must be negotiated with your tutor.**

The recording should be made in a suitable environment paying attention to microphone choice and placement. Sound separation will be an important consideration in a multiple instrument recording. You will be expected to use both mono and stereo recording techniques. All recording must be done to a metronome click.

Once complete, you will submit:

- a. DAW session file of the recording
- b. stereo wav file monitor mix of the piece (16 bit, 44.1KHz WAV format.)
- c. Documentation.

This recording will be used for assignment 2 and 3 in semester 2.

Assessment 3

Continuous Assessment

As you progress through the mix of the song you will be required to attend scheduled meetings with your tutor and peers. During these meetings, you must articulate clear ideas and working methodologies applicable to your mix.

Assessment 4:

Mixing

Using the same piece of music from assessment 2 and 3 above, you will produce a final mix of the song. You must use creative signal processing to enhance individual sounds/instruments. Expected processes would include compression, equalisations, limiting, gating, de-essing, reverb, delay, etc. Each process employed should be carefully considered and have a demonstrable effect on the piece. Particular attention should be paid to the use of appropriate panning for effective stereo imaging.

Each participant will submit:

- a. DAW session file of the final mix
- b. stereo wav file of final mix (16 bit, 44.1KHz WAV format.)
- c. Documentation