## 6.7 Module 7: Sound Reinforcement 1

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| **Module Title** | Sound Reinforcement |
| **Module NFQ Level (only if an NFQ level can be demonstrated)** | 6 |
| **Module number/Reference** | BAAMT107 |
| **Parent Programme** | BA (Hons) in Audio and Music Technology |
| **Stage of Parent Programme** | 1 |
| **Semester** | 1 |
| **Module Credit Units (FET/HET/ECTS)** | ECTS |
| **Module Credit number of Units** | 5 |
| **List the teaching and learning modes** | FT |
| **Entry requirements (statement of knowledge, skill and competence)** | Learner has earned Level 5 qualification. No previous experience 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<br>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** | One Academic Semester, 12 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 practical lab with PA system. |

| 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 | Hours | Minimum ratio teacher/learner | | | | | |
| 24 | 1:50 | 12 | 1:25 | | | | 89 | | | 125 |
| **Allocation of marks (within the module)** | | | | | | | | | | |
| | | | | | Continuous Assessment | Supervised Project | Proctored practical | Proctored Written Examination | Total | |
| **Percentage contribution** | | | | | | **100%** | | | **100%** | |

### 6.7.1 Module Objectives

The module introduces learners to the live sound environment, health & safety, equipment, techniques and standard procedures utilized in producing live sound for an event. It also develops team building and communication skills.

### 6.7.2 Minimum Intended Module Learning Outcomes

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

MLO 7.1 Design and select the component parts of a multipurpose sound reinforcement system.
MLO 7.2 Demonstrate adherence to Health and Safety requirements in a live sound environment.
MLO 7.3 Recognize factors that affect the quality of reinforced sound and implement corrective and creative procedures.
MLO 7.4 Practically apply knowledge of live sound system specifications, rigging and operation.

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

Live sound is an important discipline in the world of Audio. A large number of applicants to our current and previous courses apply with the intention of gaining employment within the 'Live' sound sector. A lot of applicants' previous experience is in live sound, either through school or community groups, or through PA companies. The Learning outcomes on this module contribute to the learner's attainment of Programme Learning Outcome 7. The learning here is also essential as preliminary to achieving Programme Learning Outcome 8 and 10.

### 6.7.4 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.

### 6.7.5 Module Content, Organisation and Structure

The module is organised to deliver theory through lectures (2 hours) and supervised tutorials (1 hours). During tutorials, Learners are split into smaller groups of between 10 and 15 at the start of the module. This will allow the lecturer to work with smaller groups to demonstrate the material. Each learner will remain in the same group for the duration of the module.

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:**

**Live sound system specification, rigging and operation**

- Technical specifications for a Sound reinforcement system.
- Production of a clear stage plan and channel list.

**Recognize factors that affect the quality of reinforced sound and implement corrective and creative procedures**

- Setup of a basic PA system.
- Tuning a PA system.
- Utilize creative processing appropriately for a live sound setting

**Awareness of Health and Safety in a live sound environment**

- Safe positioning and securing of all items of equipment, cable runs etc.
- Awareness of fire exits and other potential hazards, such as blocking passages with flight cases.

**Ability to design and select the component parts of a multi-purpose sound reinforcement system**

- Research, design and justify suitable equipment for a given specification and budget.
- How to match amplifiers and loudspeakers.
- Inclusion of all items of PA equipment essential to correctly run a small event.

### 6.7.6 Module Teaching and Learning Strategy

The module is delivered through a combination of lectures and tutorials. The emphasis is on developing practical skills based on sound theoretical knowledge. It is not enough for learners to understand the theory in a module such as this. They need to practically apply skills in a systematic way. The weekly tutorials ensure they systematically work on each aspect of Live Sound from planning stages to realisation of an event. A lot of emphasis is put on the practical work. Live Sound is not an easy competence to develop and requires a lot of practice.

| Activity | Teaching / Learning Strategy | Learning Environment |
|---|---|---|
| **Lectures (24 hours)** | Lectures / participative discussions / case studies / practical demonstrations of practical concepts, theory, system components, rigging and de-rigging / demonstration of equipment | College |
| **Tutorials (12 hours)** | Practicing sound reinforcement skills / Practical implementation of skills using sound equipment / training in use of equipment | College / Studio |
| **Assignment (48 hours)** | Practice learning and perfecting sound reinforcement skills | College / Studio |
| **Independent Work (41 hours)** | Directed and self-directed learning / home study / practice using college resources | College / Home |

### 6.7.7 Timetabling, Learner Effort and Credit.

The module is timetabled as one 3-hour class for the whole class. Generally, this will consist of a 2-hour lecture followed by a 1-hour tutorial / practical class using a PA system.

The number of credits assigned to this module is our assessment of the amount of learner effort required. It is our view that 5 ECTS of learner effort is required by learners coming new to the material to achieve the learning outcomes required.

### 6.7.8 Work-based Learning and Practice-placement

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

### 6.7.9 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.

### 6.7.10 Module Physical Resource Requirements

Requirements are for a fully equipped lecture hall and access for each group to a 1-hour session with a PA system. The PA system should have the means to control and configure calibration settings for the PA.

### 6.7.11 Reading lists and other Information Resources

**Recommended reading**

Amundson, M. (2007) *Live sound: theory & practice*. Las Vegas: Timeless Communication
Biederman, R. & Pattison, P. (2013) *Basic sound reinforcement.* Oxford: Focal Press
Davis, G. & Jones, R. (1990) *Sound reinforcement handbook*, Milwaukee: Hal Leonard Corporation.
Hannam, C (2015) *Health and safety management in the live music and event technical industry.* Cambridge: Entertainment Technology Press.

**Secondary reading**

Duncan, B. (2002) *The live Sound manual*. San Francisco: Backbeat Books
Eargle, J. & Foreman, C. (2008) *JBL audio engineering for sound reinforcement.* Milwaukee: Hal Leonard Corporation.
Gibson, B. (2011) *Ultimate live sound operator's handbook.* Milwaukee: Hal Leonard Corporation. Hunter-Stark, S. (2005) *Live sound reinforcement.* Milwaukee: Hal Leonard Corporation.
Moscal, T (1994) *Sound check: basics of sound & sound systems.* Milwaukee: Hal Leonard Corporation.
McCarthy, B. (2006) *Sound Systems: Design and Optimization*. 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
Van Beek, M. (2004) *Electrical safety for live events.* Cambridge: Entertainment Technology Press.
White, P. (2000) *Basic effects and processors.* London: Sanctuary Publishing Ltd.
White, P. (2000) *Basic live sound*. Sanctuary Publishing Ltd.

**Journals**
Sound on Sound. Cambridge: SOS Publications Group
Audio Engineering Society Journal. New York: AES

### 6.7.12 Specifications for 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 Live sound concepts and workflows, either through industry experience or academic qualification. For example, a final year Bachelor of Arts (Honours) Music Production learner may be suitable to assist the lecturer in lab sessions. Any lab assistant will work under the supervision of the lecturer.

### 6.7.13 Module Summative Assessment Strategy

The assessment is based on a practical assignment (60%) and a written report (40%).

| Element No | Weight | Type | Description | Learning outcomes assessed |
|---|---|---|---|---|
| 1 | 60% | Practical Assignment | Learners are required to position and connect a PA system including Mixing Console, Processing units and speakers. Learners will then be required to calibrate and tune the system to their own taste using music and voice. | 7.2 - 7.4 |
| 1 | 40% | Project Report | Learners are required to research and produce a feasibility report consisting of a proposal for the live sound re-enforcement requirements for a live event at a venue. For this report, learners should include details on a programme of events and the technical requirements for each act. Tutors will assist in the taking of team roles within the group as each learner should be clearly able to state their exact role in the proceedings. The report must also include all details of risk assessment and any health and safety issues of the venue. | 7.1 – 7.4 |

These assignments are focused on real world workflows and issues. The emphasis here will be on adhering to professional workflows and practices.

### 6.7.14 Sample Assessment materials.

**Assessment 1: P.A. Setup and Tuning.**
Each participant will setup a basic Public Address system. This will include positioning of speaker system and sound desk. All equipment will be connected using appropriate cables and connectors. Attention will be paid to health and safety issues such as cable runs and power up procedures and manual handling techniques. Once setup, each participant will calibrate and tune the system using either music or their own voice so achieve sonic clarity. (30-minute timeframe)

**Assessment 2: Feasibility Report:**
Participants are required to produce a feasibility report for a Live performance event. This event can include acts from music to dialog based acts and/or any other type of performance requiring live sound reinforcement.
The report will include details on:

- Technical requirements for each act.
- An event schedule/timetable.
- Personnel - roles and responsibilities.
- A Risk assessment of the venue for the event outlining any/all health and safety issues.