

**1. Module details****Module name****Advanced Professional Audio Techniques****Module duration**

It is expected that students with the appropriate entry knowledge and skills will successfully complete this module in 18 - 20 hours.

**Module code**

NUE702

**Discipline code**

0703230 Electronic Installation and Maintenance.

**2. Module purpose**

This module aims to provide the student with the skills to install and commission professional audio equipment and accessories.

**3. Prerequisites**

NE094 Professional Audio Techniques.

**4. Relationship to competency standards**

This module provides part of the underpinning knowledge and skills in the 'Evidence Guide' of specific units of competency in the National Electrotechnology Training Package and provides similar support, where mapped, to equivalent units in the National Metals and Engineering Competency Standards. For details refer to the module to unit maps, available from NUEITAB.

**5. Content****Advanced audio system interfaces**

Major components

Electronic and acoustic interfacing

Specialised locations and applications

**Radio microphones**

Characteristics

Adjustments

**Multi channel FM receiving systems**

Location

Testing

**Advanced mixing desks**

Testing/operation

New technology

**Fault finding techniques**

System functional requirements

Unit identification and replacement

Post service operational checks

**6. Assessment strategy**

**Assessment methods**

Assessment should be progressive reflecting a holistic approach to ensure the module purpose is met. To assist in ensuring validity, reliability and fairness assessment instruments should include practical exercises, assignments and written tests consisting of a number of item types, such as multiple choice, short answer and problem solving.

**Conditions of assessment**

Learning and assessment will take place in an environment that is conducive to a learner's development.

**7. Learning outcome details**

**Learning outcome 1**

**Describe how the major components of a professional audio system interface with each other.**

**Assessment criteria**

- 1.1 Identify the major components of a professional audio system.
- 1.2 List suitable equipment locations at a venue to obtain optimum acoustic performance.
- 1.3 State the general operating characteristics of professional audio system used in a theatrical, nightclub or other specialised, professional location.
- 1.4 State the performance characteristics within the MIDI specification. Characteristics should include interconnecting hardware, data format, data types, channel modes, and power up default conditions.
- 1.5 Configure a PC to deliver a MIDI in, MIDI out signal from a keyboard, piano, drum machine, or other MIDI controller or instrument.

**Learning outcome 2**

**Configure radio microphones for use with a professional audio system.**

**Assessment criteria**

- 2.1 Describe the operating characteristics of a radio microphone.
- 2.2 List the types of radio microphone available.
- 2.3 Identify sources of interference likely to degrade performance of a radio microphone.
- 2.4 Install and adjust a radio microphone to achieve optimum performance.

**Learning outcome 3**

**Install and configure a multi-channel receiver system.**

**Assessment criteria**

- 3.1 Describe the operation of a multi channel receiver system.
- 3.2 Identify and install a range of cables and connectors used with receiver systems.
- 3.3 Install and adjust a radio microphone receiver system to achieve optimum performance. Adjustment may include antenna positioning, squelch and gain adjustment, intermodulation distortion etc.

**Learning outcome 4**

**Install and configure an advanced mixing desk.**

**Assessment criteria**

- 4.1 Describe a range of typical audio effects achieved using Digital Signal Processing (DSP) techniques.
- 4.2 Identify and install a range of cables and connectors used with mixing desks in theatrical, nightclub or other specialised audio locations.
- 4.3 Install and test the operation of an advanced mixing console.
- 4.4 List new forms of technology being introduced into the audio systems industry.

**Learning outcome 5**

**Diagnose equipment faults in a complex audio sound system.**

**Assessment criteria**

- 5.1 Perform a functional test of a complex professional audio system.
- 5.2 Identify, remove and replace faulty sub assemblies in a professional audio system.
- 5.3 Verify the post service operation of a professional audio system.

**8. Delivery of the module**

**Delivery strategy**

Delivery strategies must be suitable for learning both theoretical and practical aspects described in the module purpose. It is considered that the most effective method to achieve this is by integration of theory and practice where students learn by experimentation, research and reports. It is recommended that learning and assessment be facilitated in a holistic manner that may require learning outcome sequence other than that indicated in the module.

**Resource requirements**

*Equipment may include:*

Video cassette recorders, compact disc players and writers, MIDI standard equipment-sequencers and controllers, microphones, power amplifiers, loudspeakers, mixing console with separate effects mixer, a digital audio work station, tape recorders, equalisers, amplifier mounting racks, feedback monitors, cables, connectors sundry consumables.

*In addition learners will require access to:*

- Standard electronics laboratory equipment for making measurements.
- Standard electronics hand tools for assembly of systems.

**Occupational health and safety requirements**

A safe and healthy environment will be provided for students and teachers as well as the particular safety procedures followed as part of the learning / teaching activity and content.