

<b>Module</b>	Studio Design & Installation
<b>Course code</b>	BAMPH-SDI
<b>Credits</b>	5
<b>Allocation of marks</b>	40% studio design documentation 60% practical measurement log

### **Intended Module Learning Outcomes**

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

- i. Derive and apply solutions for studio setup and design
- ii. Correctly apply knowledge of scientific principles pertaining to music production and acoustics.
- iii. Demonstrate a critical understanding of the technologies underpinning acoustic measurement and studio treatments.
- iv. Communicate effectively with the audio engineering community and musicians regarding studio design and implementation.
- v. Integrate knowledge into multi-disciplinary settings.

### **Module Objectives**

The module aims to provide practical and theoretical knowledge in the main areas of studio design and related industries. The learner will become familiar with various systems and operations using industry software currently used in acoustic analysis.

### **Module Curriculum**

Acoustics theory

- Acoustic principles
- Reflection, absorption, diffusion
- standing waves,
- flutter echo,
- reverberation time,
- sound transmission,
- insulation,
- absorption,
- diffusion,
- the floating floor,
- designing and building acoustic panels and bass traps,
- Helmholtz resonators

Objective measurements and analysis

- frequency response,
- reverberation time (RT),
- early decay time (EDT),
- early-to-late sound index (C80),
- early lateral energy fraction (LF),

- total relative sound level (G) ,
- test microphones,
- audio analysis software

#### Studio design

- Room acoustics and means of control
- Designing neutral rooms
- Rooms with characteristics acoustics
- Loudspeakers in rooms
- Flattening the room response
- Studio monitoring the principal objectives
- Live end – dead end
- Response disturbances
- Objective measurement subjective evaluation
- The home studio setup