

Module Syllabus				
Module Code: <b>EE2215</b>	Module title <b>Sound and Music Production for Broadcast</b>		Module Leader: Dr T Itagaki	Credit value: 20
Level: 2	Pre-requisites	Co-requisites	Additional Tutors:	School(s) responsible for teaching: Engineering & Design

<u>Version No.</u>	<u>Date</u>	<u>Notes – Q&amp;S USE ONLY</u>	<u>AO</u>
1	March 08	New optional module approved for 2008/9.	URG
<b>2</b>	<b>25/07/08</b>	<b>Module outline updated: change to module leader and reading lists.</b>	<b>URG</b>

#### MAIN AIMS OF THE MODULE:

To appreciate the physical and theoretical basis of sound and music. To understand the properties of various sound and music sources, both acoustic and electronic. Understand the fundamentals of recording sound in a studio and on location; with analogue and digital hardware. The properties and limitations of the human hearing and music appreciation will also be explored. Experience will be gained in using virtual studio technology to produce, edit and manage digital sound and music arrangements. The effective integration of sound and music arrangements with other media artefacts will be practised as well as an appreciation for sound in different mediums.

#### LEARNING OUTCOMES FOR THE MODULE

The module provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas:

##### (A) Knowledge and Understanding

- Principles of digital sound production and the functional components that constitute a system for such production.
- Appreciate industry standards for working efficiently with multiple technologies.

##### (B) Cognitive (thinking) Skills

- Analyse sound and music artefacts, and be able to synthesise such artefacts by creating, capturing, editing, mixing and processing various primitives.

##### (C) Other Skills and Attributes (Practical/Professional/Transferable)

- Make effective use of hardware to record sound in a studio and on location.
- Use professional software production and sequencing systems to produce sound and music arrangements for broadcasting.

#### MAIN TOPICS OF STUDY:

##### **SOUND - PHYSICAL BASIS**

Relevant physics of sound transmission, in air and other materials. Concepts of time-domain and frequency-domain. Simple and complex waveforms, harmonics and corresponding frequency spectra. Audio energy and power. Acoustic effects - absorption, reflection, echo and reverberation.

##### **MUSIC - CHARACTERISTICS, PRODUCTION AND NOTATIONAL DESCRIPTIONS**

Introduction to aesthetics of music. Melody, rhythm, and harmony. Musical instruments - acoustic and electronic. Musical scales and their relationship to the harmonic series. Introduction to musical form. Digital musical notations and standards. Song structure and analysis.

##### **HUMAN HEARING - LIMITATIONS AND PROPERTIES**

Frequency range. Loudness range. Masking effects. Pitch, timbre, harmony and atonality. Appreciation of rhythm.

##### **ELECTRONIC MUSIC PRODUCTION AND POST-PRODUCTION**

Sound sources and sampling. Artificial effects - reverberation, delay, chorus, phasing, pitch-shift, distortion, noise-gating, compression, etc. Computerised arrangement and integration with other media. Analogue and digital

storage. Quality of reproduction. Surround sound. Mixing and mastering of sound to a professional level. Use of digital audio effects and processors. De-noising of recorded materials. Evaluation of sound composition and manipulation.

**HARDWARE AND SOFTWARE INTERFACES**

Use of recording equipment for studio and location recording. Use of external analogue and digital hardware to mix and process sound. Use of standards (e.g. MIDI). Applications in music and sound production. Using compression. Synchronisation with video. Exploration of different hardware and software interfacing standards.

**VIRTUAL MUSIC STUDIO TECHNOLOGY**

Sequencing and recording using tools such as Logic Pro, Pro Tools, Soundtrack Pro, Propellerheads Reason and Apple Compressor. Editing and processing. Arranging and recording. Production and post-production of sound for multiple output standards such as Podcasts and Dolby 5.1 surround sound.

**TEACHING/ LEARNING METHODS/STRATEGIES USED TO ENABLE THE ACHIEVEMENT OF LEARNING OUTCOMES:** For example these might include lectures, seminars, tutorials, practicals, workshops, laboratories, distance learning, projects or other methods (*please specify*).

Lectures  
Sound studio workshops

**CONTACT HOURS:** Please state the *indicative* distribution of learning hours across this module.

72 hrs contact  
130 hrs private study

**ASSESSMENT METHODS WHICH ENABLE STUDENT TO DEMONSTRATE THE LEARNING OUTCOMES FOR THE MODULE:**

**WEIGHTING:**

2 hour written examination  
1 Assignment  
1 Laboratory Based Assessment

40 %  
30 %  
30 %

**INDICATIVE READING LIST:**

1 ESSENTIAL READING [\* Purchase advised]  
D Nahami, Apple Pro Training Series: Logic Pro 8 and Logic Express 8. Peachpit Press, 2007  
ISBN: 0321-502926  
Or  
S Bennet, Making Music with E-Magic Logic Audio. PC Publishing, 2002 ISBN: 1870775 783

**2 RECOMMENDED READING**

D M Howard and J Angus, Acoustics and Psycho-acoustics. Focal Press, 1998 ISBN 0 240 51428 9  
K C Pohlmann, Principles of Digital Audio. McGraw-Hill, 1995 ISBN 0 07 050469-5  
N Cook, Music: a very short introduction. Oxford paperbacks ISBN 0192853821  
M Chion, Audio-vision : sound on screen. Columbia University Press ISBN 0231078994  
W Jay Dowling, Music Cognition. Academic Press, ISBN 0685145298

The following information is required:

CORE module on the following programmes (please list):	BSc Broadcast Media (Design and Technology)
OPTION module on the following programmes (please list):	