

<b>Short Title:</b>	Sound Design <b>APPROVED</b>
<b>Full Title:</b>	Sound Design
<b>Module Code:</b>	DMED H3016
<b>ECTS credits:</b>	5
<b>NFQ Level:</b>	7
<b>Module Delivered in</b>	<a href="#">2 programme(s)</a>
<b>Module Contributor:</b>	Hugh Rodgers
<b>Module Description:</b>	<p>This module is intended to deepen the learners understanding of digital audio by providing an in-depth treatment of topics such as the physics of sound and digital audio representation and processing. It will also give the learners the necessary theoretical and practical knowledge to carry out field recordings, foley recordings, multi-tracked digital audio mixing and production. The knowledge and skills gained will be applicable to any form of multi-tracked audio production, such as audio for film, documentaries, animation, radio/audio-only programmes, theatre, games and multimedia environments, as well as music productions. In particular the module aims to: • give learners a full understanding of the principles of the theory of sound and of digital audio representation and processing; • provide learners with the ability to apply this theory to practical sound recording, engineering, and production; • expose the learners to the full audio production and post-production process; • give learners a thorough understanding of the relationship of sound and moving image; • provide learners with the knowledge required for designing an effective sound mix for integration with moving image projects.</p>
<b>Learning Outcomes:</b>	
<i>On successful completion of this module the learner will be able to</i>	
<ol style="list-style-type: none"> <li>1. Explain how sound can be digitized and demonstrate understanding of how sound theory and signal processing concepts underpin this.</li> <li>2. Explain the relationship between sound and image.</li> <li>3. Use recording hardware and software to capture and edit audio to a standard suitable for use in a professional recording.</li> <li>4. Effectively edit and apply a range of filters, effects and processors in order to enhance and improve the audio.</li> <li>5. Produce a professional standard sound mix for use in a moving image project and/or radio project.</li> </ol>	

**Module Content & Assessment**

<b>Indicative Content</b>
<b>Theory of Sound</b> • Wave theory • Physics of sound • Human perception and response • Acoustics
<b>Digital Audio Representation and Processing</b> • Signal and sampling theory • Bit depth and Quantization • AD/DA Conversion • Digital audio technologies (storage, transmission, manipulation)
<b>Audio Capture</b> • Overview of the recording process • Microphone characteristics and use • Hardware and software for capture • Application of acoustic principles for effective capture
<b>Sound and Picture</b> • A brief history of sound for picture • Sound design theory • Analysis of sound in cinema
<b>Digital Signal Processing and Effects</b> • Digital Signal Processing principles • Time, space and frequency domains • Filters for audio (high-low pass, peaking, shelving) • Effects (verb, delay, chorus) • Compressors and noise gates • Synthesis of sound effects
<b>Audio Editing and Mixing</b> • Non-linear digital editing • Overview of software and hardware for audio manipulation • Dialogue, SFX and Music editing • Introduction to the mixing process • Elements of the mix • The mixing console • Use of EQ
<b>Mastering</b> • Key concepts of mastering • Mastering tools • Preparing a mix for mastering • Use of equalization, compression, limiting and noise reduction

<b>Indicative Assessment Breakdown</b>	<b>%</b>
Course Work Assessment %	100.00%

<b>Course Work Assessment %</b>				
<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Project	Sound Composition – This assignment puts into practice microphone recording techniques and an understanding of audio editing, sound manipulation, and space design for the creation of a sound-only project for audio presentation. Written Report outlining the creative approach, process, and techniques utilised.	1,3,4,5	40.00	n/a
Case study	Sound Design for Moving Image – This assignment puts into practice all theory and practical knowledge of sound recording techniques, sound for moving image and audio mixing in a digital environment for a moving image project (clips provided). Written Report outlining the creative approach, process, and techniques utilised.	1,2,3,4,5	40.00	n/a
Lab work	Various labs throughout the semester, with exercises related to sound recording, audio-editing, and DAW mixing.	None	20.00	n/a

No Final Exam Assessment %
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<b>Indicative Reassessment Requirement</b>
<b>Coursework Only</b> <i>This module is reassessed solely on the basis of re-submitted coursework. There is no repeat written examination.</i>

**ITB reserves the right to alter the nature and timings of assessment**

### Indicative Module Workload & Resources

#### Indicative Workload: Full Time

Frequency	Indicative Average Weekly Learner Workload
Every Week	30.00
Every Week	30.00

#### Resources

##### Recommended Book Resources

Michael Talbot-Smith 2001, *Sound Engineering Explained*, Focal Press

Ken C Pohlmann 2005, *Principles of Digital Audio*, McGraw-Hill

Viers, R. 2008, *The Sound Effects Bible: How to Create and Record Hollywood Style Sound Effects*, Michael Wiese Productions

Sonnenschein, D. 2001, *Sound Design: The Expressive Power in Music, Voice, and Sound Effects in Cinema*, Michael Wiese Productions

Holman, T. 2001, *Sound For Film And Television*, Butterworth-Heinemann

Beauchamp, R. 2005, *Designing Sound For Animation*, Focal Press

*This module does not have any article/paper resources*

*This module does not have any other resources*

#### Module Delivered in

Programme Code	Programme	Semester	Delivery
BN_DDME8_8	<a href="#">Bachelor of Arts (Honours) in Creative Digital Media [240 ECTS credits]</a>	5	Mandatory
BN_DDME8_7	<a href="#">Bachelor of Arts in Creative Digital Media [180 ECTS credits]</a>	5	Mandatory