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| **Minor Award Name** | Sound Engineering & Production |
| **Minor Award Code** | 5N1900 |
| **Level** | 5 |

**Suggested resources to support delivery:**

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| **Theme/Topic** | **Type** | **Relevance** | **Author/Source** | **Web Link** |
| **Introduction to the theory of sound including waveform characteristics** | Online tutorial | Excellent, straightforward tutorial introducing the basic principles of acoustics. The tutorial has 5 pages, is well-illustrated and takes about 20 minutes to complete. | Media College  Te Awamutu 3840  New Zealand | <http://www.mediacollege.com/audio/01/> |
| **Digital media primer** | Online video | This 30-minute video presents the technical foundations of modern digital media.  The short film offers a brief history of digital media, a summary of the sampling theorem, and explanations of different formats and standards. While some details will be too advanced for level 5, the clear and comprehensive explanations are very useful for teachers seeking a dependable summary of the modern state of the art in digital audio. The video is accompanied by extensive supporting documentation. | Xiph.Org Foundation  Massachusetts  USA | <https://www.xiph.org/video/vid1.shtml> |
| **How speakers work** | Web page | Beautiful and clear animated explanation of how loudspeakers work, including information on the theory of sound. | Jacob O’Neal  Portland  Oregon  USA | <http://animagraffs.com/loudspeaker/> |
| **The beginner’s guide to microphones** | Web page | Straightforward explanation of how microphones work, different kinds of microphone including condenser, dynamic and ribbon, and related concepts including polar pattern, frequency response and connections. | Envato  Melbourne  Australia | <http://music.tutsplus.com/tutorials/the-beginners-guide-to-microphones--audio-2361> |
| **Guide To Choosing & Using Studio Microphones** | Online article | A more technically detailed explanation of microphones, with a particular focus on choosing the correct microphone for a particular instrument, environment and/or recording requirement. | Sound On Sound  Cambridge  CB23 8SQ  UK | <https://www.soundonsound.com/sos/sep06/articles/microphones.htm> |
| **Practical mixing** | Online article | Clear explanation of the fundamentals of mixing, including the use of traditional analogue mixing consoles, more modern digital mixers and also mixing in the computer using DAW software. Includes consideration of gain staging, stereo, effects including equalisation and dynamic processors, and automation. | Sound On Sound  Cambridge  CB23 8SQ  UK | <http://www.soundonsound.com/sos/jan02/articles/practicalmixing.asp> |
| **Sound engineering and production techniques and equipment** | Magazine (print and online) | **Sound On Sound** is the industry magazine of sound engineers and producers. Established in 1985, it describes itself as “the world's premier music recording technology magazine”. The SOS website hosts an extremely useful archive of informative articles which show the impact of technology on the music production and recording processes. | Sound On Sound  Cambridge  CB23 8SQ  UK | <http://www.soundonsound.com/> |
| **Mixing, sound engineering and production techniques and equipment** | Magazine (print and online) | **Mix** is an American monthly magazine and website aimed at those working in sound engineering and production. | NewBay Media  New York  NY  USA | <http://www.mixonline.com/> |
| **Electronic music recording, mixing and production** | Magazine (print and online) | **Electronic Musician** is a monthly magazine and website covering sound engineering and mixing techniques and equipment, with a particular focus on electronic music. | NewBay Media  New York  NY  USA | <http://www.emusician.com/> |
| **Electronic music recording, mixing and production** | Magazine (online only) | **Attack Magazine** is a relatively new magazine, again focussing on the recording and mixing of electronic music. The regular features on well-known producers’ home studios are of particular interest to students. | Attack Magazine  UK | <http://www.attackmagazine.com/> |
| **Electronic music recording, mixing and production** | Blog | **Create Digital Music** is a popular and regularly-updated blog which specialises in electronic equipment review and focuses on unusual sound engineering techniques including location recording and field recording. | Create Digital Media GmbH.  10999 Berlin  Germany | <http://createdigitalmusic.com/> |
| **Recording, mixing and production** | Podcast series | Excellent, informative series of short podcasts. Each episode focuses on a particular song and is narrated by the artist in question, who explains the songwriting, recording, mixing and production processes in an accessible, interesting way. | Hrishikesh Hirway  Los Angeles  California  USA | <http://songexploder.net/> |
| **Recording, mixing and production** | Book series | **33⅓ (Thirty-Three and a Third)** is a series of books written about music albums, featuring one author per album. While not every book is focussed on the recording or mixing of the album in question, many of the 100+ entries in the series provide excellent insights into the production process. | Various Authors  Edited by:  Ally Jane Grossan  Published by:  Bloomsbury | <http://333sound.com/> |
| **Recording, mixing and production** | Online forum | The **Sound On Sound Forum** is a tremendous resource for students, teachers and practitioners. A dedicated and well-informed community discusses equipment and techniques and is always ready to offer advice on tackling any questions to do with sound engineering or production. | Sound On Sound  Cambridge  CB23 8SQ  UK | <http://www.soundonsound.com/forum> |
| **Recording, mixing and production** | Online forum | Despite the unfortunate and off-putting name, which may put it beyond the bounds of classroom acceptability, **Gearslutz** is the leading online forum for practitioners working in the field, and as such is potentially of great interest to students and teachers alike. Includes a wide range of contributors, from opinionated amateurs to legendary professionals such as Bruce Swedien (engineer of Michael Jackson’s *Off The Wall, Thriller* and *Bad* albums). | Gearslutz.com Ltd  Ascot SL5 7HY  UK | <https://www.gearslutz.com/board/> |
| **Modern Recording Techniques** | Book | Now in its 8th edition, **Modern Recording Techniques** is the standard reference resource for all aspects of this module and is essential reading for students and teachers. Teachers considering using this textbook may request a free copy from the publisher through the website. | Authors:  David Miles Huber with  Robert E. Runstein  Published by:  Routledge | <http://routledgetextbooks.com/textbooks/_author/huber-9780240821573/> |
| **From studio to sales: music industry processes including recording, manufacturing, release and promotion** | eManuals | First Music Contact is a free information and advice resource for musicians and the independent music sector in Ireland, funded by the Arts Council. Their online **Band Tips** offer helpful hints and tips written by leading representatives of the global music industry, from bloggers and DJs to venues and PR agencies. | First Music Contact (FMC)  33 Wicklow Street  Dublin 2 | <http://www.firstmusiccontact.com/bandtips/> |

**Useful Organisations:**

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| **Name** | **Contact Information** |
| Irish Music Rights Organisation | <http://www.imro.ie/> |
| First Music Contact | <http://www.firstmusiccontact.com/> |
| Irish Recorded Music Association | <http://www.irma.ie/> |
| Phonographic Performance Ireland | <http://www.ppimusic.ie/> |
| Recorded Artists Actors Performers Ireland | <http://www.raap.ie/> |
| Irish Association of Songwriters Composers and Authors | <http://www.iasca.ie/> |

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| **MOOCs (Massive Online Open Courses)** | |
| Online courses delivered mainly by Universities and Colleges worldwide.  Useful to search regularly for new courses and new start dates. Most courses are free. Charge often applies if assessment and certification is required.  Provide excellent CPD for individuals or resources that can support teaching and learning. | What is a MOOC?  <https://www.youtube.com/watch?v=eW3gMGqcZQc>  Providers of MOOCs  e.g.  <https://www.mooc-list.com/>  <https://www.coursera.org/>  <https://www.udemy.com/>  <http://www.extension.harvard.edu/open-learning-initiative>  <https://www.uclaextension.edu/pages/search.aspx?c=free+courses>  <http://oyc.yale.edu/> |