Prifysgol Wrecsam
Wrexham University

Module specification

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Module Code	CMT
Module Title	Sound Synthesis & Sampling
Level	4
Credit value	20
Faculty	FACE
HECoS Code	100443 Media production
Cost Code	GACT
Pre-requisite module	N/A

Programmes in which module to be offered

Programme title	Core/Optional/Standalone
BA (Hons) Music and Sound Production	Core

Breakdown of module hours

Learning and teaching hours	36 hrs
Placement tutor support hours	0 hrs
Supervised learning hours e.g. practical classes, workshops	0 hrs
Project supervision hours	0 hrs
Active learning and teaching hours total	36 hrs
Placement hours	0 hrs
Guided independent study hours	0 hrs
Module duration (Total hours)	164 hrs

Module aims

The module will explore the building blocks used for synthesis and develop models that emulate various forms of synthesis. The structural blocks of a synthesiser will be investigated and modelled. The student will be introduced to the process of sampling and how to create sampled audio material using hardware and software samplers.

Module Learning Outcomes

At the end of this module, students will be able to:

1	Develop a model for various forms of audio synthesis.
2	Implement a design model for specific synthesis parameters.
3	Employ and use industry samplers.
4	Understand the application and limitation of present technology

Assessment

The learning outcomes will be assessed by submission of a portfolio.

The student will use software and hardware technologies to *sample and manipulate* a physical sound source to demonstrate either a musical or sound design deliverable.

Synthesis component will require the student to evaluate synthesis models and develop a suitable basic software synthesiser with appropriate control parameters. Students will submit relevant software and DAW sessions, and a short study demonstrating there deliverable.

Assessment number	Learning Outcomes to be met	Type of assessment	Duration/Word Count	Weighting (%)	Alternative assessment, if applicable
1	L1-4	Portfolio	Artefact (e.g. Patch, DAW Session) and 1 min sound study	100%	N/A

Derogations

N/A

Learning and Teaching Strategies

The Active Learning framework (ALF) embraces accessible, engaging and flexible approaches to learning, teaching and assessment in order that students are afforded the very best opportunities to engage actively with their learning.

Flexible, innovative, relevant and accessible assessment and feedback practices that optimise student engagement and achievement within a healthy learning environment;

An approach to research informed-teaching that champions active and engaged inquiry and curiosity through useful, active, applied research and scholarship.

Many classes are exercise-based, promoting active student engagement in their learning process. One-on-one consultations with personal tutors and the presence of regular presentations throughout the course encourages students to engage in reflective learning

Welsh Elements

In collaboration with the Welsh Language Team at Wrexham University, it is planned that key terms in the degree programme and certain topic areas will be available in Welsh – whether through workshop sessions, or audio and video material, with potential expansion of such capacity.

Indicative Syllabus Outline

- Sound Synthesis terminology and techniques: The nature of sound and harmonic structures. Use of VCO, VCA, VCF, Envelopes, Filter design, and modulation.
- Types of Synthesis: Subtractive, additive, and FM
- Types of parameter control including MIDI and signal based control.
- Programming: Industry standard software; application and programming to apply sampling technology within a sound studio. Sampling with respect to sequencing software.

Indicative Bibliography

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads:
Russ, M. (2012). Sound Synthesis and Sampling Focal Press

Additional reading

Cipriani, A.,Giri, M. (2014) Electronic Music and Sound Design. Contemponet.

McGuire, S. & Van de Rest, N. (2016). The Musical Art of Synthesis. Focal Press

Miranda, E, R. (2002). Computer Sound Design. Focal Press

https://www.soundonsound.com/sos/mar00/articles/synthsecrets.htm

Shepard, B. K. (2013). Refining Sound; A practical Guide to Synthesis and Sampling. Oxford Uni' Press

Administrative Information

For office use only	
Initial approval date	06/08/2025
With effect from date	September 2026
Date and details of revision	

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Version number	1