University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Adv. Audio Signal Processing			
Code: COMP10008	**SCQF Level: 10 (Scottish Credit and Qualifications Framework)**	**Credit Points: 20**	**ECTS: (European Credit Transfer Scheme)**
School:	School of Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Robert Goldie		

Summary of Module

This module will provide a vehicle for further deepening the students' practical exposure to more advanced tools and concepts of synthesis as utilised in music technology. Students will undertake the research and critical assessment of existing synthesis methods and utilise a visual programming language to develop a bespoke instrument of their own design.

Topics presented fall within the following categories:

- Principles of Synthesis
- MIDI Protocols
- Research, design, and implementation of synthesis methods
- Introduce various means of synthesis commonly used in sound design
- Research and critique existing software synthesisers including modulation methods
- Explore the various applications of MIDI for creative purposes within a visual processing language platform

This module embeds the key "I am UWS" graduate attributes and in particular: Critical Thinking, digital literacy, encourages autonomy and rewards creative innovation.

Module Delivery Method

Face-To-Face	**Blended**	**Fully Online**	**HybridC**	**Hybrid0**	**Work-Based Learning**
☐	☒	☐	☒	☐	☐

See Guidance Note for details.

Campus(es) for Module Delivery						
The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit) (tick as appropriate)						
Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
☒	☐	☐	☐	☐	☐	Add name

Term(s) for Module Delivery					
(Provided viable student numbers permit).					
Term 1	☐	Term 2	☒	Term 3	☐

Learning Outcomes: (maximum of 5 statements) **These should take cognisance of the SCQF level descriptors and be at the appropriate level for the module.** At the end of this module the student will be able to:	
L1	Demonstrate knowledge that covers and integrates most of the principle areas, features, terminologies and conventions associated with instrument creation and sound synthesis.
L2	Apply knowledge, skills and understanding, using a wide range of the principal professional skills, techniques, practices associated with instrument creation and sound synthesis.
L3	Demonstrate some originality and creativity in the design and creation of instrument(s) for the purposes of performance and sound synthesis.
L4	. Exercise autonomy and initiative in the planning and delivery of an audio software engineering project.
L5	Click or tap here to enter text.

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	During completion of this module, there will be an opportunity to achieve core skills in:
Knowledge and Understanding (K and U)	SCQF Level **10** Demonstrate: · knowledge that covers and integrates most of the principal areas, terminology and conventions of sound synthesis · detailed knowledge and understanding of specialist software for sound design.

Practice: Applied Knowledge and Understanding	SCQF Level **10** Develop skills and practices in computer based sound synthesis which are specialised and advanced	
Generic Cognitive skills	SCQF Level **10** · Consolidate knowledge, concepts, skills, practices and methodology in the production of computer based synthesised sound. · Demonstrate some originality and creativity in the design of software instruments and the production of audio tracks. · Integrate relevant knowledge from a variety of sources	
Communication, ICT and Numeracy Skills	SCQF Level **10** · Demonstrate numeracy in the exercise of a computer language for audio synthesis. · Generate and interpret a graphical representation of computer code for instrument design. · Communicating effectively and appropriately in commercial style, numerate, written reports produced using standard office ICT equipment and software.	
Autonomy, Accountability and Working with others	SCQF Level **10** Exercise autonomy and initiative in utilising and extending the presented material using reference materials. · Systematically identifying and addressing personal learning needs.	
Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code: COMP09010	**Module Title:** Audio Signal Processing
	Other:	
Co-requisites	**Module Code:**	**Module Title:**

*Indicates that module descriptor is not published.

Learning and Teaching
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.

Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	12
Tutorial/Synchronous Support Activity	12
Laboratory/Practical Demonstration/Workshop	24
Independent Study	152
Choose an item.	
Choose an item.	
Choose an item.	
Choose an item.	
Choose an item.	
	200 Hours Total

****Indicative Resources: (eg. Core text, journals, internet access)**

The following materials form essential underpinning for the module content and ultimately for the learning outcomes:

Studio access

Internet access

DAW Access

Cipriani, A (2020) Electronic Music and Sound Design - Theory and Practice with Max 8 - Volume 1. 4th edn. Contemponet

Cipriani, A (2019) Electronic Music and Sound Design - Theory and Practice with Max 8 - Volume 2. 3rd edn. Contemponet

Runsey, F (2014) Sound and Recording: Applications and Theory. 7th edn. Routledge

(**N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements
In line with the Student Attendance and Engagement Procedure: Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time.

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. Please ensure any specific requirements are detailed in this section. Module Co-ordinators should consider the accessibility of their module for groups with protected characteristics..
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	Computing
Assessment Results (Pass/Fail)	Yes ☐No ☒
School Assessment Board	Creative Computing
Moderator	Derek Turner
External Examiner	N. Auricchio
Accreditation Details	This module forms part of the BSc (Hons) Music Technology, which is accredited by JAMES.
Changes/Version Number	3.11

Assessment: (also refer to Assessment Outcomes Grids below)
This section should make transparent what assessment categories form part of this module (stating what % contributes to the final mark). Maximum of 3 main assessment categories can be identified (which may comprise smaller elements of assessment). **NB: The 30% aggregate regulation (Reg. 3.9) (40% for PG) for each main category must be taken into account. When using PSMD, if all assessments are recorded in the one box, only one assessment grid will show and the 30% (40% at PG) aggregate regulation will not stand.**

For the aggregate regulation to stand, each component of assessment must be captured in a separate box. Please provide brief information about the overall approach to assessment that is taken within the module. In order to be flexible with assessment delivery, be brief, but do state assessment type (e.g. written assignment rather than "essay" / presentation, etc) and keep the detail for the module handbook. Click or tap here to enter text.
Assessment 1 – Research and critical analysis of a chosen instrument and synthesis method (25%)
Assessment 2 – Planning, design, and development of a software instrument and the creation of a user-manual (75%)
(N.B. (i) **Assessment Outcomes Grids** for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An **indicative schedule** listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Assessment Outcome Grids (See Guidance Note)

Component 1							
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Learning Outcome (4)**	**Learning Outcome (5)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
Portfolio	X					25	4

Component 2							
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Learning Outcome (4)**	**Learning Outcome (5)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
Portfolio		X	X	X		75	40

Component 3							
Assessment Type (Footnote B.)	**Learning Outcome (1)**	**Learning Outcome (2)**	**Learning Outcome (3)**	**Learning Outcome (4)**	**Learning Outcome (5)**	**Weighting (%) of Assessment Element**	**Timetabled Contact Hours**
Combined Total for All Components						**100%**	**44 hours**

Change Control:

What	**When**	**Who**
Further guidance on aggregate regulation and application when completing template	16/01/2020	H McLean
Updated contact hours	14/09/21	H McLean
Updated Student Attendance and Engagement Procedure	19/10/2023	C Winter
Updated UWS Equality, Diversity and Human Rights Code	19/10/2023	C Winter
Guidance Note 23-24 provided	12/12/23	D Taylor
General housekeeping to text across sections. .	12/12/23	D Taylor

Version Number: MD Template 1 (2023-24)