University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Acoustics			
Code: COMP08007	**SCQF Level: 8 (Scottish Credit and Qualifications Framework)**	**Credit Points: 20**	**ECTS: 10 (European Credit Transfer Scheme)**
School:	School of Computing, Engineering and Physical Sciences		
Module Co-ordinator:	Colin Grassie		

Summary of Module

This module focuses on the physical and technological aspects of acoustic environment measurement and evaluation, room acoustics calculation and design. Electroacoustics devices and software related to impulse response (IR) capture and reproduction will be investigated. The module includes the following:

- Analysis of measured room acoustics metrics including Reverberation Time (RT60, T30, T20 and EDT) and Clarity Index.
- Evaluation of reverberation parameters such as frequency response, early reflections, and decay time in relation to suitability for inclusion within audio production processing.
- Investigation into the relationship between room acoustic calculation, prediction, and design requirements for a multi-purpose audio reproduction critical listening (control) room.
- Design and proposal for the acoustic construction of a multi-purpose audio production critical listening (control) room.

Module Delivery Method

Face-To-Face	Blended	Fully Online	Hybrid C	Hybrid 0	Work-Based Learning
☐	☒	☐	☐	☐	☐

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 a discerning understanding of a defined range of core theories, concepts, principles and terminology of acoustic environment measurement and related metrics.
L2	Apply knowledge, skills and understanding in using a range techniques and practices that are professional and advanced to the acoustic design of a critical listening room.
L3	Undertake critical analysis, evaluation and synthesis of ideas, concepts and information that are within the common understandings of acoustics design and acoustical control methods.
L4	Use and evaluate numerical and graphical data and convey complex information to a range of audiences and for a range of purposes.

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 **8** Develop an understanding of a limited range of physical parameters which apply to electroacoustic audio reproduction systems. Demonstrate a discerning understanding of the principles of acoustic design and acoustic measurement.

Practice: Applied Knowledge and Understanding	SCQF Level **8** Apply skills, techniques and practices of room acoustic design and related parameters, a few of which are advanced or complex. Carry out routine lines of investigation into professional level problems and issues related to the implementation of industry standards and recommendations for critical listening room design.	
Generic Cognitive skills	SCQF Level **8** Critically analyse and evaluate the results of physical measurements to consolidate understanding of reverberation. Develop thinking which can encompass low level technical/mathematical data and its' relevance calculation, prediction and the design process.	
Communication, ICT and Numeracy Skills	SCQF Level **8** Use a range of standard audio and acoustics software applications to obtain and process files and data. Present numerical and graphical measurement data in conjunction with written reporting.	
Autonomy, Accountability and Working with others	SCQF Level **8** Manage resources for physical measurement of audio and acoustic data. Exercise autonomy and initiative in some activities at a professional level in room acoustic design.	
Pre-requisites:	Before undertaking this module, the student should have undertaken the following:	
	Module Code: COMP07052	**Module Title:** Sound Reinforcement Systems
	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)
Tutorial/Synchronous Support Activity	12
Laboratory/Practical Demonstration/Workshop	36
Independent Study	152
	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:

Everest, F. and Pohlmann, K., 2015. Master handbook of acoustics. 6th ed. New York: McGraw-Hill.

Newell, P., 2017. Recording Studio Design. 4th ed. Routledge.

Ballou, G., 2009. Electroacoustic devices. 1st ed. [S.l.]: Focal Press.

Please ensure the list is kept short and current. Essential resources should be included, broader resources should be kept for module handbooks / Aula VLE.

Resources should be listed in Right Harvard referencing style or agreed professional body deviation and in alphabetical order.

(**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.

For the purposes of this module, academic engagement equates to the following:

Students must complete the assessment milestones laid out in the handbook in respect of the submissions of a CW1 and CW2. Students must attend formal laboratory sessions.

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 is accredited by JAMES as part of BSc (Hons) Music Technology.
Changes/Version Number	2.12

Assessment: (also refer to Assessment Outcomes Grids below)
Assessment 1: (Category 40%): Written: Laboratory Report.
Assessment 2: (Category 60%): Design: Critical Listening Room.
(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**
Report of practical/ field work	✓			✓		40	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**
		✓	✓	✓		60	8

Combined Total for All Components	**100%**	**12 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)