

University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Sound System Design			
Code: COMP08102	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:	Derek Turner		
Summary of Module			
The theoretical basis of sound summation which leads to the generation of patterns of sound pressure levels across audience areas will be discussed and patterns from standard speaker configurations will be presented. The operation of a line array will be investigated and the effect of array size, curvature, graded delays, and level offsets to elements on the distribution of sound pressure level within an audience area will be considered. The application of design software from various manufacturers to the selection and placement of speakers within a specified venue will be discussed and implemented. The transfer of the design data into systems for live performance will be noted. The purpose of the module is to introduce students to the professional practices applied to the design of sound system installations for music venues and outdoor concerts. This module embeds the key "I am UWS" graduate attributes and in particular: Universal(analytical: able to identify appropriate hardware use in a scenario), Work Ready(problem-solver: able to apply software to solve design problems) and Successful (creative: working creatively with resources to produce an optimised solution)			

Module Delivery Method					
Face-To-Face	Blended	Fully Online	HybridC	Hybrid 0	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 a knowledge of the scope, defining features, and main areas to the specification of sound (reinforcement) system components and electroacoustic device parameters.
L2	Apply knowledge, skills and understanding in using a few techniques and practices that are specialised and advanced to the computer simulation of sound (reinforcement) systems design.
L3	Use a range of approaches to formulate and critically evaluate evidence-based solutions to routine problems and issues found in sound propagation and sound (reinforcement) system design.
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 Have an awareness of current technologies used in the design of sound reinforcement systems
Practice: Applied Knowledge and Understanding	SCQF Level 8 Apply the principles of acoustics to the design of sound systems using software tools.
Generic Cognitive skills	SCQF Level 8 Develop an engineering mind-set regarding the distribution of sound in a venue.

Communication, ICT and Numeracy Skills	SCQF Level 8 Manage computer files and data with a professional approach to maintaining backup versions	
Autonomy, Accountability and Working with others	SCQF Level 8 Exercise autonomy and initiative in some activities at a professional level Manage resources within defined areas of work Take continuing account of own and others' roles, responsibilities, and contributions in carrying out and evaluating tasks	
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. This module develops knowledge and practice through synchronous presentations and demonstrations of audio system design software. Students will be able to use pre-installed design software available in a well-equipped computer lab. Some of this will require the set-up of free personal accounts with manufacturers. Students will work towards a realistic assessment where they will design a sound system for a scenario and construct a report showing design decisions and detailed outcome. Students' interaction with industry representatives will be encouraged. Although this will be a lab-based presentation, most of the software use will also be freely available for students to use at asynchronously.	
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: www.dbaudio.com. (n.d.). ArrayCalc d&b audiotechnik. [online] Available at: https://www.dbaudio.com/global/en/products/software/arraycalc/. Anon, (n.d.). MAPP XT. [online] Available at: https://meyersound.com/product/mapp-xt/. Merlijn van Veen. (n.d.). S.A.D. (Subwoofer Array Designer). [online] Available at: https://www.merlijnvanveen.nl/en/calculators/28-sad-subwoofer-array-designer-en. Ahnert, Wolfgang, et al. Sound Reinforcement for Audio Engineers. S.L., Routledge, 2022. A useful reference text is: McCarthy, B. (2016). Sound systems - design and optimization: modern techniques and tools for sound system design and alignment. New York: 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 engage in sharing and discussing their software simulation activities in-person or online as appropriate in preparation for submission. Students should attend 75% of scheduled sessions (online or face to face as appropriate).	
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..

In order for the student to complete this module an element of computer simulation using sound design software will require to be undertaken.

This module is designed to provide equal opportunities for all students irrespective of their age, disability, gender, sexual orientation, race, colour, nationality, ethnicity, religion, beliefs, or sexual orientation. Reasonable adjustments can be made if related issues arise.

(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	Colin Grassie
External Examiner	G N Aurriccio
Accreditation Details	This module is as part of BSc (Hons) Music Technology programme accredited by JAMES
Changes/Version Number	Module delivery set as face-to-face.

Assessment: (also refer to Assessment Outcomes Grids below)

Assessment 1 Report on the design and simulation of a sound system for a specified venue description (100%)

(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
Creative output/ Audiotapes/ Videotapes/ Games/ Simulations	✓	✓	✓	✓		100	0
Combined Total for All Components						100%	0 hours