Liverpool John Moores University

Title:	STUDIO DESIGN
Status:	Definitive
Code:	**6524STE** (118579)
Version Start Date:	01-08-2019
Owning School/Faculty:	Electronics and Electrical Engineering
Teaching School/Faculty:	Liverpool Institute for Performing Arts

Team	Leader
Karl Jones	Y

Academic Level:	FHEQ6	**Credit Value:**	12	**Total Delivered Hours:**	30
Total Learning Hours:	120	**Private Study:**	90		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	18
Workshop	12

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	SPREADSHEE	DESIGN SPREADSHEET	40	
Portfolio	DOCUMENT	DESIGN DOCUMENTATION	60	

Aims

This module is intended to provide the core skills relating to the acoustic design and improvement of recording studio spaces.
Much of the work will involve mathematical calculations and equations essential for understanding the physics in a methodical manner. Spreadsheet software will be introduced for the purpose of automating the design process and this forms a major part of the module.

Depending on availability, guest speakers and site visits will provide unique insights into the field.

Learning Outcomes

After completing the module the student should be able to:

1	Apply specific technical theories relating to the internal acoustic design and noise control of recording studio spaces
2	Design and use spreadsheets to make the acoustic design process more accurate, efficient and client friendly
3	Conduct research into and critically evaluate the performance of a range of commercial products to be used in typical studio design
4	Design a recording studio space working to a brief and present this in a technical document

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

DESIGN SPREADSHEET	2	4	
DESIGN DOCUMENTATION	1	2	3

Outline Syllabus

Basic Acoustics
Revision of sound waves; Wavelength, period, frequency; The decibel; Power, intensity and pressure; Adding coherent and incoherent sources; Diffraction, reflection and absorption; Comb filtering; Inverse square law; Psychoacoustics.

Noise Control and Isolation
Requirements for Noise Control; NR/NC Curves; Mass Law; Walls; Windows; Floating Floors; Anti-vibration mounts; Comparison of Materials; Air conditioning.

Small Room Acoustics
Reverberation; Comb filtering; Room modes; Low / mid / high frequency issues.

Absorption and Diffusion
Absorption coefficient ; Absorbers - Panel, Helmholtz, low frequency; Diffusion – QRD, Schroeder.

Typical Studio Spaces
Performance Spaces; Control Rooms; Listening Rooms; Mastering Rooms; Subjective requirements of different rooms; Conventions

Listening and Measurement
Practical demonstrations of acoustic issues; Measurement techniques; Modal behaviour.

Documentation
Drawing tools; Presentation of data; Working to a brief

Learning Activities

This module will be taught over a 12 week period. Sessions will include lectures, workshops, guest lectures from professionals working in the field and a visit to an acoustics research centre.
The lectures will generally cover the theoretical material and the workshops will provide a guide to using various tools relevant to the module.
It is essential that students taking this module reserve time for research and self-study work relating to the syllabus and assessment.
Students are encouraged to use the recommended reading material and to research additional source of information in the form of books and websites.

Notes

TO FOLLOW