

## Studio Design

### Module Information

2022.01, Approved

#### Summary Information

Module Code	6539STE
Formal Module Title	Studio Design
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

#### Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

#### Partner Teaching Institution

Institution Name
Liverpool Institute for Performing Arts

#### Learning Methods

Learning Method Type	Hours
Lecture	16
Practical	10
Workshop	4

#### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-PAR	PAR	September	12 Weeks

## Aims and Outcomes

Aims	This module is intended to provide an understanding of the important considerations in the acoustic design and improvement of recording studio spaces. Much of the work will involve mathematical calculations and equations essential for understanding the acoustics in a methodical manner. Spreadsheet software will be introduced for the purpose of assisting the design process and this forms a major part of the module. Practical workshops relating to prediction, measurement and processing will also be a key part of the module. The teaching structure will also include a visit to an acoustics research facility and a guest lecture by a studio design professional.
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Apply specific technical procedures and standards relevant to the internal acoustic design and noise control of recording studio control room spaces
MLO2	2	Design and use spreadsheet calculation and graphs to assist in the acoustic design and prediction of a listening space.
MLO3	3	Design a recording studio control room working to a brief and present this in a technical document

## Module Content

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. Design of these. 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. Loudspeaker Considerations Placement and control of loudspeakers in a small room.
Module Overview	
Additional Information	Peter Philipson is the Module Leader (p.philipson@lipa.ac.uk)

## Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Practice	Design Spreadsheet	40	0	MLO1, MLO2
Practice	Studio Design Documentation	60	0	MLO2, MLO3

## Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
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**Partner Module Team**

Contact Name	Applies to all offerings	Offerings
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