Liverpool John Moores University

Title:	APPLIED ACCOUSTICS AND SYNTHESIS
Status:	Definitive
Code:	**5503TECLCC** (108482)
Version Start Date:	01-08-2016
Owning School/Faculty:	Electronics and Electrical Engineering
Teaching School/Faculty:	City of Liverpool College

Team	Leader
Paul Otterson	Y

Academic Level:	FHEQ5	**Credit Value:**	12	**Total Delivered Hours:**	50
Total Learning Hours:	120	**Private Study:**	70		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	10
Seminar	5
Tutorial	3
Workshop	30

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Exam 3 from 6 questions	40	2
Essay	AS2	Coursework studio design	30	
Essay	AS3	Sound analysis and re-synthesis	30	

Aims

To understand the behaviour of sound in a studio environment.
To investigate microphones, loudspeakers and their acoustic interaction with enclosed spaces.
To apply synthesis techniques to create a variety of original and imitative sounds.

Learning Outcomes

After completing the module the student should be able to:

1 Carry out decibel calculations
2 Apply concepts such as standard pressure level, intensity level, acoustic impedance
3 Calculate acoustic transmission levels through walls, reverberation times
4 Design the acoustic treatment of a room
5 Describe the best placement of microphones
6 Replicate acoustic sounds using synthesis techniques.

Learning Outcomes of Assessments

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

EXAM	1	2	3	5
CW	4	5		
CW	6			

Outline Syllabus

The nature of sound: wavelength, sound pressure and intensity.
Sound in rooms and buildings: standing waves, reverberation time, transmission, Sound directivity
Use of decibels, octaves, semi-tones
Microphone types, directivity and placement; loudspeaker design principles
Waveforms and methods of synthesis.

Learning Activities

By a series of lectures supported by practical workshops

Notes

This module will investigate the behaviour of sound in a studio environment, microphones, loudspeakers and their acoustic interaction with enclosed spaces and apply synthesis techniques to create a variety of original and imitative sounds.