

Liverpool John Moores University

Title: Creative Signal Processing
Status: Definitive
Code: **4524STE** (124037)
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering
Teaching School/Faculty: Liverpool Institute for Performing Arts

Team	Leader
Karl Jones	

Academic Level: FHEQ4
Credit Value: 20
Total Delivered Hours: 50
Total Learning Hours: 200
Private Study: 150

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	14
Workshop	36

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Portfolio	Portfolio	Signal Processing Design Portfolio	50	
Practice	Practice	Corrective Signal Processing & Creative Sound Design	50	

Aims

To provide the student with a thorough understanding of the range of signal processing options available to the audio engineer. This will build on the knowledge gained during both Core Recording Skills and Sound Technology Theory.

The module will have two parallel paths; one that deals with the design of processing tools within a digital environment and the other that deals with the application of

these tools to a variety of production scenarios.

Additionally the content will connect many technical parameters to their associated aesthetic attributes and will focus on critical listening ability.

Learning Outcomes

After completing the module the student should be able to:

- 1 Design their own signal processors within a software environment.
- 2 Demonstrate a technical understanding of the design and application of audio signal processors.
- 3 Apply a wide range of signal processing in both remedial and creative applications.
- 4 Associate objective parameters with perceived subjective qualities and cultural conventions when making creative judgements.

Learning Outcomes of Assessments

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

Signal Processing Design	1	2
Port		
Corrective Signal Processing	3	4

Outline Syllabus

Historical and Cultural Overview of Signal Processing
Native Instruments Reaktor as a Processing Tool
Timbral Processing
Time Delay Processing
Modulation Processing
Reverberation Processing
Dynamic Compression / Expansion Processing
Psychoacoustic Processing
Harmonic Distortion Processing
Pitch Correction and Time Manipulation Processing
Restoration Processing
Creative Sound Design
Combining Signal Processing

Learning Activities

This module is delivered in both lecture and workshop formats. Lectures will be used to cover underlying theory and broad concepts, whilst workshop sessions will put this theory in practice by working with appropriate hardware and software in both lab and studio environments.

Notes

Peter Philipson is the Module Leader (p.philipson@lipa.ac.uk)