Audio Restoration and Digital Enhancement

Module Information

2022.01, Approved

Summary Information

Module Code	6304AMP
Formal Module Title	Audio Restoration and Digital Enhancement
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

Learning Methods

Learning Method Type	Hours
Lecture	18
Practical	18
Tutorial	8

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	To enable students to apply modern digital techniques for the analysis / reconstruction / transfer / identification and enhancement of a variety of audio signals and artefacts.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Select appropriate tools to restore audio material from various legacy formats
MLO2	2	Analyse and reconstruct an audio product to appropriate industry standards
MLO3	3	Analyse and enhance a sound file to identify the obscured content
MLO4	4	Apply knowledge and techniques to suggest/develop improvements for an engineered product

Module Content

Outline Syllabus	Audio recording and acoustic analysis in historical contextSignal Analysis and Fourier TransformDigital Archiving of materialsThe audio chain and optimisationIdentification of Format Capabilities and LimitationsFormat transfer techniquesComparisons of Modern and Historical Recording and Reproduction formatsApplication of Digital standards & formats, sample rates and qualityNoise analysis and reduction systemsSpectral analysis and acoustic enhancementWaveform analysis and reconstructionApplication of acoustic analysis to enhance environment, reproduction and productsModern noise suppression techniquesAudio restoration and reconstruction processesAssessment, management and reporting of audio analysisAnalysis of live-captured and electronically-generated contentMaintenance of levels to relevant technical acceptance standardsApplication of Audio restoration processes in Industry
Module Overview	**Aims** **To enable students to apply modern digital techniques for the analysis / reconstruction / transfer / identification and enhancement of a variety of audio signals and artefacts.** **Learning Outcomes** **After completing the module the student should be able to:** **1 Select appropriate tools to restore audio material from various legacy formats.** **2 Analyse and reconstruct an audio product to appropriate industry standards.** **3 Analyse and enhance a sound file to identify the obscured content.** **4 Apply knowledge and techniques to suggest/develop improvements for an engineered product.**
Additional Information	This module is designed to give students an opportunity to apply their audio skills to broader less traditional industry applications and as an introduction to the application of the disciplines taught throughout their degree to the new opportunities available in the fast growing industries of Audio Archiving, Audio Restoration and Bespoke Sound design for Industrial Applications.This module aligns to the following UN Sustainable Development Goals:4 Quality Education5 Gender Equality8 Decent Work and Economic Growth10 Reduced Inequalities

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Report on methodologies	30	0	MLO4
Practice	Enhance & isolation techniques	70	0	MLO3, MLO2, MLO1

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Colin Robinson	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings