

# Audio Forensics Theory and Practice

## Module Information

2022.01, Approved

### Summary Information

Module Code	7000AMP
Formal Module Title	Audio Forensics Theory and Practice
Owning School	Engineering
Career	Postgraduate Taught
Credits	30
Academic level	FHEQ Level 7
Grading Schema	50

### Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

### Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	33

### Module Offering(s)

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

### Aims and Outcomes

Aims	To provide students with a comprehensive understanding of the theory, processes and techniques in the emerging field of Audio Forensics To equip the student with knowledge and understanding to critically analyse, select and apply appropriate techniques to transcode, authenticate enhance, interpret and report on forensic audio investigations
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**After completing the module the student should be able to:**

**Learning Outcomes**

Code	Number	Description
MLO1	1	Critically appraise audio materials obtained from a variety of common sources
MLO2	2	Transfer, store and investigate forensic audio materials
MLO3	3	Investigate, analyse and interpret forensic audio materials
MLO4	4	Evaluate the risks, implications and influence of the procedures they have undertaken on the outcomes of criminal investigations

**Module Content**

Outline Syllabus	Introduction to Forensic Audio Sound and Acoustic Theory Audio Signal Chain theory Modern Audio capture and storage techniques Digital Audio Coding and common compression techniques Benchmarking and Reference Equipment setup Forensic Audio Handling Techniques Forensic Audio Software Forensic Audio Processing techniques for identifying Authenticity Continuity Forensic Audio Processing for Analysing file components Critical listening Evaluation Electric Network Frequency Analysis Forensic Audio Enhancement and Interpretation Techniques Forensic Audio Interpretation Methodology and Calculations Forensic Audio Reporting Common Forensic Audio Case Files The Syllabus involves applying the Audio Forensic process chain appropriately with a keen awareness of the risks and implications associated with the standards and processes required for each procedure: 1. Capture/Duplication/Handling of files from original format in professional manner 2. Transfer of files to digital analysis software 3. Authentication Assessment of files 3. Manipulation and Interpretation of Audio files in Analysis Software for forensic investigation processes 4. Safe storage and transfer techniques 5. Quality Assessment and Documentation for effectiveness, acceptability, impact accuracy and repeatability of the forensic audio processes completed to a level of competence where the student is able to defend their decision process under professional cross examination
Module Overview	This module will provide students with a thorough understanding of the relevant skills, processes and procedures pertinent to their potential role as an Audio Forensic Specialist. The focus will be on many common audio forensic real life situations although there may be scope to specialise in specific areas of the industry.
Additional Information	This module will provide students with a thorough understanding of the relevant skills, processes and procedures pertinent to their potential role as an Audio Forensic Specialist. The focus will be on many common audio forensic real life situations although there may be scope to specialise in specific areas of the industry.

**Assessments**

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Test	Test	25	0	MLO1
Practice	Investigation	25	0	MLO1, MLO2, MLO4
Report	Interpretation	50	0	MLO1, MLO2, MLO3, MLO4

**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
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