

Audio Forensics

Module Information

2022.01, Approved

Summary Information

Module Code	7110AMP
Formal Module Title	Audio Forensics
Owning School	Engineering
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

Learning Methods

Learning Method Type	Hours
Lecture	20
Practical	25
Tutorial	5

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 field of Audio Forensics To equip the student with knowledge and understanding to critically analyse, select and apply appropriate techniques to prepare, transcode, manipulate, store and report upon audio materials to be used in forensic media investigations To foster an environment that promotes self-reflection, peer review and a keen awareness of the potential impact of various forms of bias can have on the interpretation of results within the evidence chain
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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 manipulate audio materials for forensic purposes to recognised guidelines and standards
MLO3	3	Analyse and process materials recognising the risks, implications and potential influence that the procedures they have undertaken may have on the outcomes of criminal investigations
MLO4	4	Prepare documentation and reports to the appropriate standards

Module Content

Outline Syllabus	Introduction to Audio and Forensic Audio Sound and Wave theory The Ear and the way we hear Hearing (Health and Safety, Limits Range and Protection) Equipment Choice and Specification Equipment connectivity, Cabling and Standards Reverberation/Diffraction/Inverse Square Law Measurement Scales tools and techniques Digital Sampling and related Audio Theory Audio Visualisation Tools charts and techniques Audio Signal Chain theory Critical Listening and Evaluation Risks of Bias in Audio Forensic Procedures Working to ISO Guidelines for Audio in Forensics Modern Audio capture encoding and storage techniques Limitations of Audio Capture equipment and common file formats Digital Audio Coding and common compression techniques Common File identification and size calculations Benchmarking and Reference Equipment setup Audio Handling and Extraction Techniques Audio Processing techniques for identifying Authenticity Reporting and Preparation of documentation
Module Overview	This module will provide students with a thorough understanding of the relevant theory, skills, processes and procedures pertinent to their current /potential role as an Audio Technician and prepare them for a career as an Audio Forensic Specialist. The focus will be on many common real-life situations although there may be scope to further specialise in specific areas of the field.
Additional Information	This module will provide students with a thorough understanding of the relevant theory, skills, processes and procedures pertinent to their current /potential role as an Audio Technician and prepare them for a career as an Audio Forensic Specialist. The focus will be on many common real-life situations although there may be scope to further specialise in specific areas of the field. The Syllabus involves applying the Audio processing 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 editing and analysis software 3. Authentication Assessment of files 4. Manipulation and Preparation of Audio files in Audio Software for forensic investigation purposes 5. Safe storage and transfer techniques 6. Quality Assessment and Documentation for effectiveness, acceptability, impact accuracy and repeatability of the Audio processes completed to a level of competence where the student is able to prepare materials for submission in court

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping

Test	Test	30	0	MLO1, MLO2
Report	Practical and report	70	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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