

Liverpool John Moores University

Title: CCTV and Video Forensics
Status: Definitive
Code: **7111AMP** (129230)
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering
Teaching School/Faculty: Engineering

Team	Leader
Colin Robinson	Y

Academic Level: FHEQ7 **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	20
Practical	25
Tutorial	5

Grading Basis: 50 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	AS1	Fundamentals of video signals (calculations scales and video Theory)	30	
Report	AS2	Forensic video evidence handling tools. Investigation procedures. Processing evidence interpretation	70	

Aims

To provide students with a comprehensive understanding of the theory, processes and techniques in the field of Video Forensics

To equip the student with knowledge and understanding to critically analyse, select and apply appropriate techniques to prepare, transcode, manipulate authenticate and report on forensic CCTV/Video 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

Learning Outcomes

After completing the module the student should be able to:

- 1 Critically appraise CCTV/Video materials obtained from a variety of common sources
- 2 Transfer, store manipulate and investigate forensic CCTV/Video materials to recognised guidelines and standards
- 3 Analyse and Process materials recognising the risks, implications and influence of the procedures they have undertaken on the outcomes of criminal investigations
- 4 Prepare documentation and reports to the appropriate standards

Learning Outcomes of Assessments

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

Test	1	2		
Practical and report	1	2	3	4

Outline Syllabus

Introduction to Forensics for CCTV/Video

The Eye and the way we see

Light and Colour theory

Video Signal Chain theory

Modern CCTV types.

Lens Theory

Working to ISO Guidelines for CCTV and Video Forensics

Modern CCTV/Video capture and storage techniques

Digital Video Coding and common compression techniques

Benchmarking and Reference Equipment setup

Forensic CCTV/Video Handling an Extraction Techniques

Critical Viewing and Evaluation

Risks of Bias in Video Forensic Procedures

Video Processing for file analysis

Techniques for enhancement, interpretation and calculations for Forensic CCTV/Video

Forensic Video Processing techniques for identifying authenticity and continuity

Evidence Reporting

Learning Activities

Lectures, practical sessions and demonstrations including measurement and calculation procedures

Notes

This module will provide students with a thorough understanding of the relevant theory, skills, processes and procedures pertinent to their potential role as a CCTV Video 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 Video 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
4. Manipulation and Interpretation of Video files in Analysis 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 forensic CCTV/Video processes completed to a level of competence where the student is able to prepare materials for submission in court