

Liverpool John Moores University

Title: PROBLEM SOLVING FOR COMPUTER FORENSICS
Status: Definitive
Code: **4106COMP** (121204)
Version Start Date: 01-08-2021

Owning School/Faculty: Computer Science and Mathematics
Teaching School/Faculty: Computer Science and Mathematics

Team	Leader
Michael Mackay	Y
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Academic Level: FHEQ4 **Credit Value:** 20 **Total Delivered Hours:** 55

Total Learning Hours: 200 **Private Study:** 145

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	11
Practical	22
Tutorial	22

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Problem decomposition and solution design	60	
Report	AS2	Solution development and evaluation	40	

Aims

To enhance students software development and problem solving skills
To develop problem decomposition and analysis skills
To implement the problem solution in a relevant programming language

Learning Outcomes

After completing the module the student should be able to:

- 1 Apply problem decomposition methodologies to analyse computer forensic problems.
- 2 Identify solutions to simple computer forensics problems using a range of software development problem solving techniques
- 3 Apply programming/scripting techniques to computer forensics problems
- 4 Carry out structured evaluation and reflection of the developed solution

Learning Outcomes of Assessments

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

Solution design	1	2
Solution implementation	3	4

Outline Syllabus

- *Problem solving: flow diagrams, pseudocode, information representation, algorithms, encapsulation, abstraction, dividing big problems, combining small solutions, etc.*
- *Forensics case studies; searching for patterns in large data, searching for similarity, summarising information in a data set, organising information*
- *Implementation and prototyping and testing and validation*
- *Reflection*

Learning Activities

Students will participate in lectures, practical tutorials / lab sessions and group discussions.

Notes

Students will apply their understanding in two assessments. First, they will apply design and problem analysis techniques to a relevant case study scenario involving computer forensics. Second, they will translate such a design into a software solution.