

Liverpool John Moores University

Title: PROBLEM SOLVING FOR COMPUTER SECURITY
Status: Definitive
Code: **4114COMP** (121212)
Version Start Date: 01-08-2021

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

Team	Leader
Bo Zhou	Y
Phil Kendrick	

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 enhance students understanding of computer security using a popular programming language.*

Learning Outcomes

After completing the module the student should be able to:

- 1 Apply problem decomposition methodologies to analyse computer security problems.
- 2 Identify solutions to computer security problems using a range of software development problem solving techniques.
- 3 Apply programming techniques to computer security problems.
- 4 Carry out structured evaluation 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 Decomposition
Flow Diagrams
Algorithms
Pseudocode
Minimum Viable Product
Object-Oriented Design
Information Representation
Open Source Project and Development
Team Work

Learning Activities

Students will participate in lectures where students are encouraged to ask questions / discuss scenarios, and practical tutorials / lab sessions where students are encouraged to put theory gained though lectures into practice.

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 security. Second, they will translate such a design into a software solution.