

## Liverpool John Moores University

Title: Problem Solving for Computer Security  
Status: Definitive  
Code: **4214COMP** (127972)  
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
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**Academic Level:** FHEQ4      **Credit Value:** 20      **Total Delivered Hours:** 44  
**Total Learning Hours:** 200      **Private Study:** 156

### Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	11
Practical	22
Tutorial	11

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Problem decomposition and solution design	60	
Technology	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:

Problem decomposition	1	2
Solution development	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.