

## Liverpool John Moores University

Title: PROBLEM SOLVING FOR INFORMATION SYSTEMS  
Status: Definitive  
Code: **4013DACOMP** (125351)  
Version Start Date: 01-08-2021

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

Team	Leader
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Mark Allen	
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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	44

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Design Model	40	
Technology	AS2	Software Implementation	60	

### Aims

*To develop skills in computational thinking that can be used to develop programs to solve subject specific problems*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Use computational thinking to design solutions to problems
- 2 Implement design solutions in a suitable programming language
- 3 Develop test plans

## Learning Outcomes of Assessments

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

Design Model	1	
Software Implementation	2	3

## Outline Syllabus

*Computational thinking – decomposition, pattern recognition, abstraction, algorithms*  
*Top-down design/successive refinement*  
*Pseudo-code and diagram techniques*  
*Practical exercises using compound control structure*  
*Practical exercises using methods/functions*  
*Solving problems with classes/objects*  
*Practical exercises using classes/objects*  
*Practical exercises on error handling*  
*Testing – test data, test cases, test plans, test strategies (unit, system)*  
*Practical exercises on testing*

## Learning Activities

Learning will largely be based on practical exercises and problem solving activities. Lectures will be used to introduce topics, which will be reinforced through practical work.  
This module will have online practical.

## Notes

The practical exercises will be related such that they lead to the development of a larger software implementation.