Liverpool John Moores University

Title:	Problem Solving for Computing
Status:	Definitive
Code:	**4211COMP** (127971)
Version Start Date:	01-08-2021
Owning School/Faculty:	Computer Science and Mathematics
Teaching School/Faculty:	Computer Science and Mathematics

Team	Leader
Denis Reilly	Y
Mark Allen	

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	33

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Design Model	40	
Report	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 appropriate 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.

Notes

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