LIVERPOOL JOHN MOORES UNIVERSITY

Module Proforma

Approved, 2022.03

Summary Information

Module Code	4215COMP
Formal Module Title	Foundations of Computer Science
Owning School	Computer Science and Mathematics
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 4
Grading Schema	40

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Fariba Sharifian	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
Martin Randles	Yes	N/A
Omar Aldhaibani	Yes	N/A
Somasundaram Ravindran	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings

Teaching Responsibility

LJMU Schools involved in Delivery
Computer Science and Mathematics

Learning Methods

Learning Method Type	Hours
Lecture	33
Practical	11

Module Offering(s)

Offering Code	Location	Start Month	Duration
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	To enhance students' problem-solving skills through the use of mathematics and computer science techniques, including formal principles of modelling, enabling students to apply these techniques in the analysis and design of practical computational systems

Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Apply appropriate mathematical concepts and operations to solve problems.
MLO2	Demonstrate critical thinking, analytical reasoning, and problem-solving skills.
MLO3	Identify a problem and analyse it in terms of its significant parts and the information needed to solve it.
MLO4	Formulate and evaluate possible solutions to problems, and select and defend the chosen solutions.

Module Content

Outline Syllabus
Propositions and predicates, logical connectives, truth tables, Boolean AlgebraProof MethodsConcepts of set theory, set membership, union, intersection and differenceCartesian products; coordinate systems; vectors and matrices Relations, inverse relations, compositionFunctions and their properties; composition. Recursive definitionsCombinatoricsTrees and Graphs

Module Overview
This module provides you with a strong foundation in the topics underpinning computer science. The module engages you with modelling systems and analysis techniques that are used to investigate and understand computing and software engineering problems. The intention is for you to develop a scientific and engineering ethos that will enable you to understand the science of computing.

Additional Information
This module is intended to provide students with a strong foundation in the topics underpinning computer science. The module engages the student with modelling systems and analysis techniques that are used to investigate and understand computing and software engineering problems. The intention is for the student to develop a scientific and engineering ethos that will enable the computer science student to understand the science of computing and translate this into practice.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Report	Report	50	0	MLO1, MLO3
Centralised Exam	Examination	50	2	MLO4, MLO2