Foundations of Computer Science

Module Information

2022.01, Approved

Summary Information

Module Code	4523CSQR
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

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Oryx Universal College WLL

Learning Methods

Learning Method Type	Hours
Lecture	33
Practical	11

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-PAR	PAR	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

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Apply appropriate mathematical concepts and operations to solve problems.
MLO2	2	Demonstrate critical thinking, analytical reasoning, and problem-solving skills.
MLO3	3	Identify a problem and analyse it in terms of its significant parts and the information needed to solve it.
MLO4	4	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	
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)	Module Learning Outcome Mapping
Report	Report	50	0	MLO1, MLO3
Exam	Examination	50	2	MLO2, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Martin Randles	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings