

Overview

Programme Code	45579
Programme Title	Computer Science
Awarding Institution	Liverpool John Moores University
Programme Type	Degree with Foundation
Programme Leader	Martin Randles
Link Tutor(s)	

Awards

Award Type	Award Description	Award Learning Outcomes
Alternative Exit	Bachelor of Science (SW) (Fnd) - SBSF	Demonstrate a broad and comparative knowledge of the general scope of the subject, its different areas and applications, and its interactions with related subjects. A detailed knowledge of a defined subject or a more limited coverage of a specialist area balanced by a wider range of study. In each case, specialised study will be informed by current developments in the subject. Demonstrate a critical understanding of the essential theories, principles and concepts of the subject(s) and of the ways in which these are developed through the main methods of enquiry in the subject.
Alternative Exit	Diploma of Higher Education (Fnd) - DHEF	Understand the practical application of computer science. Use formal methods and the scientific principles of programming and correctness. Appreciate the fundamentals of algorithm and language design. Understand relationships, and their relevance to databases, whilst also being able to create and maintain a database. Identify the professional skills required within the computing industry. Demonstrate a range of skills including problems-solving as an individual or as part of a group. A student who successfully completes a placement year will be eligible for the Sandwich award and will, in addition to the above, be able to demonstrate the professional and personal skills necessary for effective employment within a professional environment.
Alternative Exit	Certificate of Higher Education (Fnd) - CHEF	Develop computer programs using elementary programming constructs. Discuss computer systems at the hardware and software levels. Understand the different approaches required to solve computer-based problems. Discuss a range of practical aspects of computing and apply the associated tools and techniques. Identify a personal development plan to support their career path and recognise ethical, legal and professional aspects that relate to the computing profession. Design and develop a website using appropriate tools and techniques. Understand of the basics of data modelling and abstraction. Communicate their ideas and take personal responsibility for their learning.

Alternative Exit	Diploma in Higher Education (SW) (Fnd) - SDHEF	Understand the practical application of computer science. Use formal methods and the scientific principles of programming and correctness. Appreciate the fundamentals of algorithm and language design. Understand relationships, and their relevance to databases, whilst also being able to create and maintain a database. Identify the professional skills required within the computing industry. Demonstrate a range of skills including problems-solving as an individual or as part of a group. A student who successfully completes a placement year will be eligible for the Sandwich award and will, in addition to the above, be able to demonstrate the professional and personal skills necessary for effective employment within a professional environment.
Alternative Exit	Bachelor of Science (Fnd) - BSF	Demonstrate a broad and comparative knowledge of the general scope of the subject, its different areas and applications, and its interactions with related subjects. A detailed knowledge of a defined subject or a more limited coverage of a specialist area balanced by a wider range of study. In each case, specialised study will be informed by current developments in the subject. Demonstrate a critical understanding of the essential theories, principles and concepts of the subject(s) and of the ways in which these are developed through the main methods of enquiry in the subject.
Recruitable Target	Bachelor of Science with Honours (Fnd) - BSHF	See Learning Outcomes Below
Target Award	Bachelor of Science with Honours (SW) (Fnd) - SBSHF	See Learning Outcomes Below

Alternate Award Names

External Benchmarks

Subject Benchmark Statement

UG-Computing (2022)

Accreditation

Programme Accredited by

PSRB Name	Type of Accreditation	Valid From Date	Valid To Date	Additional Notes
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BCS, the Chartered Institute for IT	Accredited by BCS, the Chartered Institute for IT for the purposes of fully meeting the academic requirement for registration as a Chartered IT Professional.		
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Programme Offering(s)

Mode of Study, Mode of Delivery	Intake Month	Teaching Institution	Programme Length
Sandwich Year Out, Face to Face	September	LJMU Taught	5 Years
Sandwich Year Out, Face to Face	September	LJMU Taught	4 Years

Aims and Outcomes

Educational Aims of the Programme

The overall aim of the course is to provide a balanced, integrated and practical based education in all aspects of computing and the underlying science behind it for utilisation in organisations where IT and computing is a major activity. The specific aims of the course are as follows: -To provide students with a full, systematic understanding of current and developing Computer Science. -To enable the student to acquire the skills needed in applying computer science to practical development. -To bring the student to an understanding of the mathematical and scientific concepts that underpin modern computing. -To encourage students to fully engage with the development of employability skills by completing a self-awareness statement. -To enable students to explore the issues surrounding Computer Science in Industrial contexts. -To facilitate students in the development of expertise and interest in topic areas of direct and complementary relevance to their work or planned career. -To encourage students to become advanced autonomous learners. -For students undertaking a placement year the aim is to provide students with an extended period of work experience at an approved partner that will complement their programme of study at LJMU. This will give the students the opportunity to develop professional skills relevant to their programme of study, as well as attitude and behaviours necessary for employment in a diverse and changing environment.

Learning Outcomes

Code	Description
PLO1	Be critically aware of current and developing principles and practices within Computer Science.
PLO2	Specify a complex computer-based system.
PLO3	Deploy a wide range of appropriate computing tools, facilities and techniques to solve a computing problem.
PLO4	Work professionally as a member of a team.

Code	Description
PLO5	Deploy a wide range information technology for effective information retrieval.
PLO6	Apply numerical and formal methods to computing problems involving a quantitative dimension.
PLO7	Communicate complex information effectively by written or verbal means.
PLO8	Apply conceptual and practical knowledge and skills to Computer Science problems.
PLO9	Use a range of advanced tools and techniques used in the specification of complex computer based systems.
PLO10	Critically analyse a range of software development domains.
PLO11	Plan and manage an IT project.
PLO12	Plan, conduct and report a research project.
PLO13	Implement systematic and comprehensive knowledge and understanding of Computer Science concepts, principles and theories.
PLO14	Use knowledge with originality in system modelling, requirements analysis and design.
PLO15	Critically evaluate and test a computer-based system.

Programme Structure

Programme Structure Description

The placement year, module 5100COMSCI, will follow Level 5 and students will be enrolled on a 480 credit honours sandwich programme. The Level 5 mean for the final award mark will be calculated based upon the 240 credits at Level 5. Students successfully completing the assessment of the placement year are eligible for a Sandwich award. Students not undertaking a placement year are registered on the non-sandwich version of the programme and will have the opportunity of an additional study year abroad following Level 5. Students will be enrolled on a 480 credit honours with study abroad programme. Of those 480 credits, 120 will be taken via a Level 5 study abroad module 5110COMSCI. The modules to be studied in the host institution must be agreed in advance. The Level 5 mean for the final award mark will be calculated based upon the 240 credits at Level 5. Students starting on this programme prior to September 2020 will be required to complete the modules specified in the programme specification in force when they commenced their study. This requirement may be varied should a student take a leave of absence or be required to complete final module attempts.

Programme Structure - 700 credit points	
Level 3 - 120 credit points	
Level 3 Core - 120 credit points	CORE
[MODULE] 3100FNDET Algorithms and Computing Approved 2022.02 - 10 credit points	
[MODULE] 3102FNDET Foundation Mathematics for Engineering and Technology 1 Approved 2022.02 - 20 credit points	
[MODULE] 3106FNDET Programming Approved 2022.01 - 10 credit points	
[MODULE] 3201FNDCMP Personal, Academic and Skills Development Approved 2022.03 - 20 credit points	
[MODULE] 3209FNDCMP Information Systems Development Approved 2022.01 - 20 credit points	
[MODULE] 3210FNDCMP Creative Computing Approved 2022.01 - 20 credit points	
[MODULE] 3211FNDCMP Applied Computing Approved 2022.01 - 20 credit points	
Level 4 - 120 credit points	
Level 4 Core - 120 credit points	CORE
[MODULE] 4200COMP Introduction to Programming Approved 2022.03 - 20 credit points	
[MODULE] 4201COMP Computer Systems Approved 2022.01 - 20 credit points	
[MODULE] 4203COMP Professional Practice Approved 2022.03 - 10 credit points	
[MODULE] 4204COMP Data Modelling Approved 2022.01 - 10 credit points	
[MODULE] 4215COMP Foundations of Computer Science Approved 2022.01 - 20 credit points	
[MODULE] 4216COMP Computer Science Workshop Approved 2022.01 - 20 credit points	
[MODULE] 4222COMP Introduction to Web Development Approved 2022.01 - 20 credit points	
Level 5 - 300 credit points	
Level 5 Core - 100 credit points	CORE
[MODULE] 5200COMP Group Project Approved 2022.01 - 20 credit points	
[MODULE] 5202COMP Database Systems Approved 2022.01 - 20 credit points	
[MODULE] 5220COMP Algorithm Design Approved 2022.01 - 20 credit points	
[MODULE] 5222COMP Knowledge Based Systems Approved 2022.01 - 20 credit points	
[MODULE] 5229COMP Automata, Languages and Computation Approved 2022.02 - 20 credit points	
Level 5 Optional - 80 credit points	OPTIONAL
[MODULE] 5204COMP Object-Oriented Systems Approved 2022.01 - 20 credit points	
[MODULE] 5218COMP Secure Software Development Approved 2022.02 - 20 credit points	
[MODULE] 5224COMP Data Analytics Approved 2022.02 - 20 credit points	
[MODULE] 5230COMP Mobile and Web Development Approved 2022.01 - 20 credit points	

Optional Study Semester - 120 credit points	OPTIONAL
Placement Year - 120 credit points	OPTIONAL
[MODULE] 5100COMSCI Sandwich Year - Computer Science Approved 2022.01 - 120 credit points	
OR Study Semester - 120 credit points	OPTIONAL
[MODULE] 5110COMSCI Study Year Abroad - Computer Science Approved 2022.01 - 120 credit points	
Level 6 - 160 credit points	
Level 6 Core - 100 credit points	CORE
[MODULE] 6200COMP Project Approved 2022.01 - 40 credit points	
[MODULE] 6219COMP Advanced Topics in AI Approved 2022.01 - 20 credit points	
[MODULE] 6220COMP Computer Graphics and Visualisation Approved 2022.01 - 20 credit points	
[MODULE] 6221COMP Contemporary Concepts in Computer Science Approved 2022.01 - 20 credit points	
Level 6 Optional - 60 credit points	OPTIONAL
[MODULE] 6210COMP User Experience Design Approved 2022.01 - 20 credit points	
[MODULE] 6213COMP Network Defence Approved 2022.01 - 20 credit points	
[MODULE] 6229COMP Applied Data Science Approved 2022.01 - 20 credit points	

Module specifications may be accessed at <https://proformas.ljmu.ac.uk/Default.aspx>

Teaching, Learning and Assessment

Core knowledge and understanding is acquired via lectures, tutorials, practical work, workshops and guided independent study. Independent study is used where appropriate resource material is available and increases as the programme progresses. Students are given feedback on all work produced. Assessment methods are specified in each module specification. All learning outcomes in a module are assessed and the type of assessment specified for each outcome. Each module is assessed by examination and/or course work. The nature of the course work varies for each module. Cognitive skills are developed throughout the programme via tutorial, group discussion, teamwork, coursework, projects and presentations. Assessment of cognitive skills is through written examinations, laboratory work, coursework reports, project work, reports and presentations. Practical skills are developed throughout the programme. Coursework and projects are designed to provide practical opportunities for students to work independently or in groups. Assessment is normally by course work. The placement year is assessed, by portfolio, on a pass / fail basis. Key skills are developed throughout the programme in a variety of forms. Specifically through a combination of research related coursework, guided independent study and projects, examinations, group work and presentations. Key skills are assessed as part of coursework, projects, written examinations and presentations.

Opportunities for work related learning

Level 4: 4203COMP Professional Practice - this module provides students with an opportunity to consider their future role as a computing professional and develop a plan to enable them to progress in their chosen career. Level 5: 5200COMP Group Project – this module provides further insight into developing the role of the student becoming a computing professional. Students will be encouraged to become student members of appropriate professional bodies for the computing industry (e.g. ACM, IEEE or BCS) as part of their development. 5100COMSCI Sandwich Year Computer Science - The aim is to provide students with an extended period of work experience at an approved partner that will complement their programme of study at LJMU. This will give students the opportunity to develop professional skills relevant to their programme of study as well as the attitude and behaviours necessary for employment in a diverse and changing environment.

Entry Requirements

Type	Description
A levels	Applicants should have or expect to obtain a total of 88 UCAS points with a maximum of 20 points from AS level qualifications.
Other international requirements	Applicants offering other awards will be considered on an individual basis in line with the agreed entry criteria. All applicants should have achieved IELTS 6 or equivalent.
Alternative qualifications considered	Qualifications deemed equivalent to the above upon completion of appropriate assessment will be considered acceptable. Applicants should have five GCSE (or equivalent) passes of at least grade C including Mathematics and English (or IELTS 6.0).
BTECs	BTEC Extended Diploma To the value of 88 UCAS points. BTEC Diploma / 90 Credit Diploma / Subsidiary Diploma /Certificate To the value of 88 UCAS points when combined with other qualifications.
International Baccalaureate	Applicants should have or expect to obtain a total of 88 UCAS points overall.