LIBF

MSc Computer Science

Programme Specification

Contents

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General Information

UCAS Code	Award	Programme Title	Expected Duration	Study Mode
N/A	MSc	Computer Science	1 year 1.5 years 2 years	Full-time Part-time 1 Part-time 2
		Programme Code UK-LIBF-MACS		
	Exit Awards	• Postgraduate Diploma • Postgraduate Certificate		

Credit Count	**180 FHEQ credits**
Awarding Institution	The London Institute of Banking & Finance
Teaching Institution	The London Institute of Banking & Finance
Delivery Modes	• Face-to-face • Blended • Online – Synchronous • Online – Asynchronous

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Record of modifications			

Programme Overview

Programme Summary

In the era of digital transformation and rapid technological advancements, the field of computer science has become increasingly significant and complex. The MSc Computer Science programme provides a comprehensive understanding of the advanced knowledge and skills needed to excel in this dynamically evolving technological environment.

The MSc Computer Science programme is designed to provide you with an in-depth understanding of computer science and enable you to develop and enhance skills through core modules such as Advanced Mathematics, Programming with Python, Algorithmics, and Cyber Security and Data Protection. In addition to the core modules, the programme offers a selection of elective modules, including Big Data Technologies and Artificial Intelligence. These electives allow you to tailor your learning experience to your specific interests and career goals, providing you with the opportunity to delve deeper into specific areas of computer science.

Upon completion of the programme, you will be well-equipped to pursue a range of careers in diverse tech environments. Whether your interest lies in academia, research, or industry, the MSc Computer Science programme provides a solid stepping stone for your career.

Programme Aims

The MSc Computer Science programme aims to:

- provide you with an advanced and systematic understanding of the theoretical foundations and leading theories used in computer science, including its mathematical, statistical, and computational aspects;

- equip you with advanced practical skills in developing IT systems;

- enhance your critical thinking and research skills, enabling you to critically analyse current research, concepts, and practices, and to independently propose original solutions and hypotheses and communicate these effectively to a wide range of audiences;

- give you a critical insight and understanding of novel, leading developments and current issues in computer science and enable you to broaden your knowledge

of new developments relevant to the field through a process of independent and self-directed learning; and

- develop your ability to apply computer science techniques in complex new contexts through a range of elective modules.

Employability & Graduate Outcomes

Graduates of this programme are likely to pursue careers in a number of areas in computer science and related fields including IT operations, data science, software engineering, and information technology consultancy. This programme of study supports graduates in developing the following employability skills:

- digital, technical, and statistical literacy

- high level of numeracy

- communication skills

- creative thinking and problem-solving skills

- analysis and critical thinking skills

- adaptability and continuous learning

Intended Learning Outcomes of the Programme

This programme has been developed in accordance with the QAA Subject Benchmark Statement for Master's Degrees in Computing (2022).

Please note: The programme's intended learning outcomes below are described at Master's level (Level 7).

On successful completion of this programme, you will be expected to:

L01 Demonstrate a systematic knowledge and understanding of the multiple programming paradigms including high-level programming, cross-platform support, and open-source programming language.

L02 Demonstrate a systematic knowledge of Python's extensive standard libraries constructing a large ecosystem for building applications by third-party libraries and frameworks and their application across domains.

L03 Demonstrate a systematic understanding of the foundational principles, leading concepts, and theories of computer science, in particular mathematics, statistics, and algorithms.

L04 Demonstrate advanced problem-solving skills through the application of relevant theoretical underpinnings and fundamental computing and computer science principles.

L05 Systematically apply core concepts, principles, and practices in computer science as the standard methods for networking and distributed systems, in conjunction with contemporary advancements in cyber security and data protection.

L06 Analyse cutting-edge concepts in computer science informed by literature at the forefront of the field by exercising critical judgment to anticipate potential benefits and drawbacks in addressing complex IT-related challenges confronting society.

L07 Evaluate interdisciplinary aspects at the forefront of computing to explore innovative and dynamic technologies that consider sustainability, inclusion, and diversity within the context of the digital skills economy.

L08 Evaluate computer science concepts and principles in relation to their practical application for the effective design, implementation, and usability of computer-based systems.

L09 Apply advanced research methodologies to conduct independent research and critique current findings to develop solutions for complex problems in computer science and communicate outcomes to diverse audiences, showcasing initiative and originality.

The Structure of the Programme

The MSc Artificial Intelligence programme is offered as a 1-year full-time programme or in part-time mode over a 1.5 or 2-year period.

The programme is divided into modules which include both compulsory and elective modules weighing 15 credits each and a thesis weighing 45 credits. All modules in the programme are assigned to Level 7.

To achieve the full Master's award, students need to complete modules with a combined weight of 180 credits, including the final thesis.

Table 1: Structure of the Programme

Module Code	Module Name	Credit	Compulsory / Elective
LIBFWAWADLMDSPWP	Programming with Python	15	C
LIBFEXDLMDSAM	Advanced Mathematics	15	C
LIBFWAWADLMARM	Advanced Research Methods	15	C
LIBFAWDLMDSAS	Advanced Statistics	15	C
LIBFAWDLMCSA	Algorithmics	15	C
LIBFEXDLMCSNDS	Networks and Distributed Systems	15	C
LIBFOARPDLMCSITSDP	Cyber Security and Data Protection	15	C
LIBFWAREDLMCSSCSAS	Seminar: Computer Science and Society	15	C
Elective		15	E
LIBFMTMMTHE	Master Thesis	45	C

Table 2: List of Electives

Module Code	Module Name	Credit	Subject Area*
LIBFOARPDLMCSSESP	Software Engineering: Software Processes	15	n/a
LINFWAREDLMCSSCTCS	Seminar: Current Topics in Computer Science	15	n/a
LIBFOARPDLMDSBDT	Big Data Technologies	15	n/a

LIBFEXDLMAIAI	Artificial Intelligence	15	n/a
LIBFIRPFSINTER	Internship[1]	15	n/a

Teaching, Learning & Assessment

Information about teaching, learning and assessment can be found in the Teaching, Learning and Assessment Strategy.

Our programmes are designed to:

- integrate theory with practice,

- develop your ability to critique and challenge models and theoretical frameworks,

- stimulate debate, discussion, and research,

- foster a variety of academic skills,

- be accessible and inclusive, and

- develop global citizens.

You are expected to undertake a considerable amount of independent study, including reading, industry-related research, and personal reflection.

Teaching Formats

The programme may be offered in various teaching formats, for example online or via blended learning.

You will have access to both asynchronous and synchronous teaching formats.

Via the Course Feed in the virtual learning environment, myCampus, you will be able to contact the module tutor in a flexible and accessible way.

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[1] Check eligibility before booking the module.

This is also where Intensive Live Sessions are conducted synchronously with video-based elements. They serve to answer students' individual questions as well as to allow for group discussions.

Additionally, Learning Sprints[2] will offer a seven-week intense learning experience in which the lecturers guide students through the learning material in a very structured manner, with the goal of successfully preparing them to take the final assessment at the end. During this time, frequent synchronous online meetings are held, offering keynote speeches and interactive tasks.

Both the Intensive Live Sessions and Learning Sprints are recorded to further assist asynchronous learning.

In the blended format, teaching and learning combines online and in-person learning in a *flipped* classroom concept. Traditional classroom activities like lectures are conducted online via the learning platform, while in-class time is used for interactive work. On-campus elements like study groups and library study time complement this approach.

Learning Resources

You will have access to a wide range of resources, which may include the following:

- myCampus: This Moodle-based central information and digital learning platform is organized based on programmes and modules. On the respective module pages in myCampus, you can access all study materials (e.g., course books (i.e., text books), reading lists, practice exams, and video galleries) as well as the links to all related resources and databases (e.g., MS Teams, links to the library for further reading, contact details of lecturers, links to the booking tool for online exams, and the Turnitin submissions page). In the blended model you have access to the same learning platform, with slight adaptations made to accommodate, for example, differences in study sequence.

- Learnhub App: You can access your learning materials in a digital app and have all your notes and highlights synchronised. The app supports different learning formats, such as reading and annotating course books, using different colour codes, assessing knowledge with interactive self-tests, or watching the latest videos of the current module.

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[2] Offered only when the minimum number of participants is reached.

- Our comprehensive online library is aligned with the study content and kept up to date. Compulsory and further reading is mentioned in the course and module descriptions available for the students and aims to provide them with unlimited access.

Assessment & Feedback

Regulations relating to progression and assessment, including information on late submissions, are as set out in The London Institute of Banking & Finance's General and Academic Regulations for Students.

Assessment strategies follow The London Institute of Banking & Finance's Higher Education Accessible and Inclusive Learning Policy.

Assessment consists of both formative and summative approaches, and feedback and feedforward are provided as outlined in the London Institute of Banking & Finance's Higher Education Assessing Learning & Feedback Policy. The different types of assessment used by the London Institute of Banking & Finance are described in the Higher Education Types of Summative Assessment Guidance.

Module assessment methods are included in Module Handbooks which are made available in myCampus.

Credit and Award

Credit Framework

The MSc Computer Science programme is made up of 180 FHEQ credits. One credit approximates to 10 student effort hours; therefore, the total course requires an average of 1,800 hours effort. Typically, one ECTS credit is the equivalent to two UK credits, although this may vary depending on the individual European state's requirements.

Award

On successful completion of the full programme, you will be awarded the MSc Computer Science.

Regulations

The London Institute of Banking & Finance's General and Academic Regulations for Students detail

- regulations governing the award of credit,

- how grades for awards are granted,

- time limits for completion of programmes of study

- capping of marks and regulations relating to the resitting of assessment components

- academic misconduct e.g., malpractice, and

- accreditation of prior learning (APL).

Exit Awards

In line with The London Institute of Banking & Finance's General and Academic Regulations for Students, the following applies:

| Postgraduate Certificate (PgCert) | minimum of 60 credits, of which at least 40 credits must be at Level 7 |
| Postgraduate Diploma (PgDip) | minimum of 120 credits, of which at least 90 credits must be at Level 7 |

Note: The London Institute of Banking & Finance does not award interim qualifications. For example, a student registered for the master's degree will not automatically be awarded a Postgraduate Diploma or Certificate on completion of the required number of credits.

Professional Recognition

Credits gained via accreditation of prior learning (APL) into our awards may mean that students will not get certain exemptions from other institutions' higher education or professional awards that may recognise our programmes.

Criteria for Admission

Normally, successful applicants will possess a 2.2 Honours degree (or equivalent) from a recognised institution.

Applicants not possessing this requirement may be considered if they can demonstrate their ability to achieve at this level and contribute to the debates, discussions, and work of the learning set. In this case, applicants may be interviewed and / or required to submit a piece of written work in addition to their application to enable an assessment to be made of their suitability for the programme.

Applicants for whom English is not their first language would be expected to demonstrate their competence through achieving an IELTS score of 6.5 or above with no element below 6.0 (or equivalent). An online English test is offered (SPEEX) if IELTS not available. Alternatively, evidence you have previously studied in English at an appropriate level and at a recognised institution, may be accepted.

Benchmarks

External

- QAA UK Quality Code, including:

    o Subject Benchmark Statement for Computing (2022)

    o Level 7 descriptors in the Framework for Higher Education Qualifications in England, Wales and Northern Ireland

    o Master's degree characteristics

    o The Frameworks for Higher Education Qualifications of UK Degree Awarding Bodies (FHEQ)

Internal

- The London Institute of Banking & Finance Code of Practice

- The London Institute of Banking & Finance General and Academic Regulations for Students

In addition, research with the relevant sector has been undertaken to ensure that the learning outcomes of the programme address identified skills and knowledge gaps.

Links

Teaching, Learning and Assessment Strategy

The London Institute of Banking & Finance's General and Academic Regulations for Students

The London Institute of Banking & Finance's Code of Practice for Quality Assurance, Chapter 3: Accreditation of Prior Learning (APL)

Accessible and Inclusive Learning Policy

Types of Summative Assessment

Higher Education Assessing Learning & Feedback Policy

Subject Benchmark Statement for Computing

Framework for Higher Education Qualifications in England, Wales and Northern Ireland

Characteristics Statement: Master's Degree

Higher Education Credit Framework for England

Curriculum Map of Modules Against Intended Learning Outcomes of the Programme

Module Code	Module Name	Compulsory / Elective	Intended Learning Outcomes of the Programme								
			LO1	LO2	LO3	LO4	LO5	LO6	LO7	LO8	LO9
LIBFWAWADLMDSPWP	Programming with Python	C	X	X							
LIBFEXDLMDSAM	Advanced Mathematics	C		X	X						
LIBFWAWADLMARM	Advanced Research Methods	C						X			X
LIBFAWDLMDSAS	Advanced Statistics	C		X	X						
LIBFAWDLMCSA	Algorithmics	C	X	X	X	X					
LIBFEXDLMCSNDS	Networks and Distributed Systems	C				X	X				
LIBFOARPDLMCSITSDP	Cyber Security and Data Protection	C				X	X				
LIBFWAREDLMCSSCSAS	Seminar: Computer Science and Society	C	X			X		X	X	X	X
LIBFOARPDLMCSSESP	Software Engineering: Software Processes	E				X	X			X	
LINFWAREDLMCSSCTCS	Seminar: Current Topics in Computer Science	E				X	X	X	X		
LIBFOARPDLMDSBDT	Big Data Technologies	E		X	X	X		X	X		X
LIBFEXDLMAIAI	Artificial Intelligence	E	X	X	X	X		X		X	X
LIBFIRPFSINTER	Internship	E	X	X	X	X	X			X	
LIBFMTMMTHE	Master Thesis	C	X			X	X	X	X	X	X

This table shows the distribution of the programme's intended learning outcomes (as specified in the programme specification) across the programme modules.

Mapping of Teaching Formats and Types of Media Used in the Programme Modules

Module Code	Module Name	Compulsory / Elective	Type of Assessment[1]	Teaching Formats[2]			Types of Media[3]					
				CF	ILSE	LS[4]	CB	RL	OT	RB	V	PE
LIBFWAWADLMDSPWP	Programming with Python	C	WAWA	X	X	X	X	X	X		X	
LIBFEXDLMDSAM	Advanced Mathematics	C	EX	X	X	X	X	X	X		X	X
LIBFWAWADLMARM	Advanced Research Methods	C	WAWA	X	X	X	X	X	X		X	
LIBFAWDLMDSAS	Advanced Statistics	C	AW	X	X	X	X	X	X		X	
LIBFAWDLMCSA	Algorithmics	C	AW	X	X	X	X	X	X		X	
LIBFEXDLMCSNDS	Networks and Distributed Systems	C	EX	X	X	X	X	X	X		X	X
LIBFOARPDLMCSITSDP	Cyber Security and Data Protection	C	OARP	X	X	X	X	X	X		X	
LIBFWAREDLMCSSCSAS	Seminar: Computer Science and Society	C	WARE	X	X	X						
LIBFOARPDLMCSSESP	Software Engineering: Software Processes	E	OARP	X	X	X	X	X	X		X	
LINFWAREDLMCSSCTCS	Seminar: Current Topics in Computer Science	E	WARE	X	X	X						
LIBFOARPDLMDSBDT	Big Data Technologies	E	OARP	X	X	X	X	X	X		X	

Code	Module												
LIBFEXDLMAIAI	Artificial Intelligence	E	EX	X	X	X	X	X	X		X	X
LIBFIRPFSINTER	Internship	E	IRP	X	X	X						
LIBFMTMMTHE	Master Thesis	C	MT									

This table shows the distribution of teaching formats and types of media used in the programme modules.

[1]EX = Exam, WAWA = Written assignment, WACS = Case study, WARE = Research essay, WAPR = Project report, P = Portfolio, AW = Advanced Workbook, OARP = Oral Assignment + Reflection Paper, OPRRP = Oral Project Report + Reflection Paper, BT/MT = Bachelor / Master Thesis

[2]CF = Course Feed, ILSE = Intensive Live Sessions, LS = Learning Sprints

[3]CB = Course Book, RL = Reading List, OT = Online Tests, RB = Review Book, V = Videos, PE = Practice Exams

[4]Offered only when the minimum number of participants is reached.