

MSc Computer Science

Programme Specification



1. Programme title	MSc Computer Science
2. Awarding institution	Middlesex University
3. Teaching institution	Middlesex University
4. Details of accreditation by professional/statutory/regulatory body	
5. Final qualification	MSc Computer Science PGDip Computer Science PGCert Computer Science
6a. Year of validation/review	2019
6b. Year of amendment	2020
7. Language of study	English
8. Mode of study	Full-time or Part-time

9. Criteria for admission to the programme

Applicants should normally have one of the following:

- A second class or higher honours degree in a computing discipline awarded by a UK university or a qualification deemed by the University to be equivalent.
- A second class or higher honours degree in an appropriate discipline (e.g. engineering or mathematics) with relevant knowledge of computing, or significant industrial experience pertaining to a relevant role (such as a software developer role) within the computing sector (with a minimum of five years' experience in that role).

International students whose first language is not English or who have not been taught in the English medium throughout, and whose first degree is not from a British

university, must achieve an IELTS score of 6.5 with a minimum score of 6.0 in each band.

University policies supporting students with disabilities apply, as described in the University Regulations, 'Information for Students with Disabilities'.

10. Aims of the programme

The programme aims to:

- Provide a balance of advanced computer science theory with the opportunity to gain practical, hands-on experience.
- Direct postgraduate students to relevant strands of contemporary research activity as appropriate and the knowledge and skills to undertake further research.
- Develop postgraduate students' critical thinking, enabling reflection on, and evaluation of, a range of advanced topics in computer science.
- Facilitate the necessary skills and knowledge to analyse and choose from a range of software development technologies and paradigms, and to plan and develop software in the chosen paradigm.
- Promote an ability to critically appraise the professional, legal and ethical framework applicable to careers in computing.
- Convey the values, attitudes and competence to apply the principles and concepts learnt in the programme when undertaking continual professional development and self-directed learning throughout their careers.

11. Programme outcomes

A. Knowledge and understanding

On completion of this programme the successful student will have knowledge and understanding of:

1. The ideas and concepts underlying a selected set of advanced topics in computer science.
2. Appropriate computer science techniques to apply to a given problem.
3. How to analyse, reason about and implement complex software systems.
4. How to appraise the professional, legal and ethical framework within which a computing professional must operate.

Teaching/learning methods

Students gain knowledge and understanding through a combination of traditional lecture delivery, seminar discussions, small group and individual exercises and assignments, lab sessions, and the individual project. Throughout their studies, students are encouraged to undertake independent study both to supplement and consolidate what is being learned, and to broaden their individual knowledge and understanding of the subject. Critical evaluation and selection of techniques and solutions engage the students in relating theory to practice.

Assessment methods

	<p>Students' knowledge and understanding is assessed by a combination of coursework, in-class tests, and an individual dissertation. Coursework may comprise group and individual assignments, online formative assessment via the University virtual learning (i.e., e-learning) environment, and presentations. The dissertation is assessed by a thesis report and a viva-voce examination.</p> <p>Due to COVID-19 face to face sessions are going to be conducted online during the 2020/21 academic year.</p> <p>All sessions will be delivered either as a pre-recording, or as a real-time online session that is recorded and made available for students who are unable to attend.</p>
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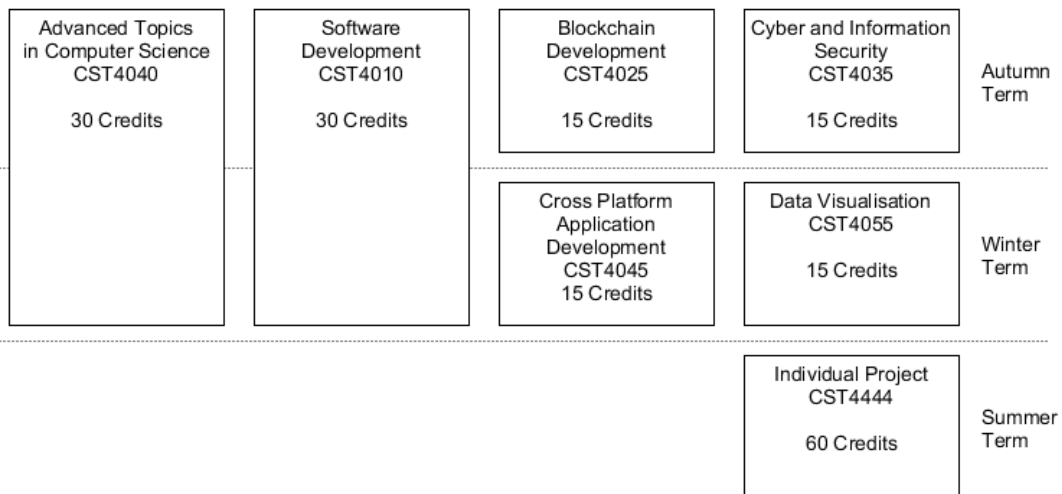
<p>B. Skills</p> <p>On completion of this programme the successful student will be able to:</p> <ol style="list-style-type: none"> 1. Plan and apply appropriate techniques for the solution of problems in computer science. 2. Utilise a range of modelling and abstraction techniques for the specification and design of software systems. 3. Analyse complex problems systematically and implement effective solutions. 4. Communicate effectively in writing, verbally and by presentation. 5. Display effective team working skills to make a positive contribution, as a member or leader, to the work of a group. 6. Plan and execute a challenging and substantial computing project by 	<p>Teaching/learning methods</p> <p>Students learn cognitive and practical skills through the teaching and learning strategy indicated in Section A. These abilities are nurtured, in particular, by self-directed learning, small group teaching and discussions, small group and individual formative exercises and assessments, laboratory sessions, and the individual project. Seminar sessions provide an opportunity to address questions, queries and problems.</p> <p>Assessment methods</p> <p>Students' skills are assessed by practical assignments, such as individual and group assignments to design and develop a range of software artefacts mapping to the topics presented in the taught modules. These assignments comprise (in addition to the prototype software artefacts) written design reports, with several assessments involving presentations (both individual and group presentations).</p> <p>Due to COVID-19 face to face sessions are going to be conducted online during</p>
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<p>application of appropriate research methods.</p>	<p>the 2020/21 academic year.</p> <p>All sessions will be delivered either as a pre-recording, or as a real-time online session that is recorded and made available for students who are unable to attend.</p>
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12. Programme structure (levels, modules, credits and progression requirements)

12.1 Overall structure of the programme

The programme is available in full-time and part-time mode. The programme comprises 120 credits of compulsory taught modules and a 60 credit postgraduate project module. For an MSc award a total of 180 credits must be attained. For a PGDip (exit) award, 120 credits must be attained, i.e., all taught modules. For a PGCert (exit) award, a minimum of 60 credits must be attained and there is no restriction on which taught modules must be completed in order to make up those 60 credits. All taught modules are compulsory. Full-time students study the taught modules over a period of 24 weeks. Students undertake the project module (60 credits) over the Summer term to complete the programme in approximately one calendar year. The programme structure is illustrated below.



Part-time students typically study 60 credits of taught modules in their first academic year followed by a further 60 credits of taught modules in the following academic year. In this case, students are expected to study CST4010 plus one Autumn Term and one Winter Term 15 credit module in their first year, then CST4040 plus the remaining Autumn and Winter Term 15 credit modules in their second year. It is acceptable within the regulations of the learning framework for part-time students to study 30 credits in a given academic year provided the overall programme is completed within the specified timescale for part-time registration. This will require a module registration schedule to be designed with, and approved by, the programme leader.

12.2 Levels and modules

Level 7

COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
<p>CST4040 Advanced Topics in Computer Science</p> <p>CST4010 Software Development</p> <p>CST4025 Blockchain Development</p> <p>CST4035 Cyber and Information Security</p> <p>CST4045 Cross-Platform Application Development</p> <p>CST4055 Data Visualisation</p> <p>CST4444 Individual Project</p> <p>All modules are FHEQ Level 7</p>	<p>There are no optional modules for this programme</p>	<p>Students must successfully complete 120 credits of taught modules in order to progress to the individual project module (CST4444).</p>

12.3 Non-compensatable modules (note statement in 12.2 regarding FHEQ levels)

Module level	Module code
7	CST4010, CST4040, CST4025, CST4035, CST4045, CST4055, CST4444

13. Curriculum map

See attached.

14. Information about assessment regulations

Information on how the University formal assessment regulations work, including details of how award classifications are determined, can be found in the University Regulations at

<https://www.mdx.ac.uk/about-us/policies/university-regulations>

Grades are awarded on the standard University scale of 1–20, with Grade 1 being the highest. To pass a module all components, both coursework and examination, must be passed individually with a minimum grade of 16. Failure in one of the components will result in the failure of the module.

For additional information on assessment and how learning outcomes are assessed please refer to the individual module narratives for this programme.

15. Placement opportunities, requirements and support (if applicable)

Not applicable

16. Future careers (if applicable)

Successful students will be well placed for a range of roles in the professional computing sector, and the strong research underpinning of the programme provides a platform for further research activity.

17. Particular support for learning (if applicable)

For more information please check this link:

<http://unihub.mdx.ac.uk/study>

The Department of Computer Science Teaching and Learning Strategy is compliant with those of the University, in seeking to develop learner autonomy and resource-based learning. In support of the students learning experience:

- All new students go through an induction programme and some have early diagnostic numeric and literacy testing before starting their programme. The Learning Enhancement Team (LET) provides one-to-one tutorials and workshops for those students needing additional support in these areas.
- Students are allocated a personal email account, secure networked computer storage and dial-up facilities.
- A programme handbook is made available to students at enrolment (electronic copies for all students are available via virtual learning environment).
- New and existing students are provided with electronic module handbooks for each module they study Web-based learning materials are provided to further support learning.
- Extensive library facilities are available at the base campus.
- Students can access advice and support on a wide range of issues from the Student Services Counter and the Student Information Desk. Student Advisers

aligned to subject areas offer confidential one to one advice and guidance on programme planning (if applicable) and regulations.

- High quality specialist laboratories equipped with industry standard software and hardware where appropriate, for formal teaching as well as self-study.
- Tutorial sessions for each module organised for groups of up to 20 students are provided for additional teaching support.
- Feedback is given on completion of all formative assessments.
- Where applicable, past exam papers for all modules (which are assessed by examination) are available for students via Unihub.
- Research activities of academic staff feed into the teaching programme, which can, on some occasions, provide an opportunity for students to work with academics on some aspect of research.

Middlesex University encourages and supports students with disabilities. Some practical aspects of Computer Science programmes may present challenges to students with particular disabilities. You are encouraged to visit our campuses at any time to evaluate facilities and talk in confidence about your needs. If we know your individual needs we'll be able to provide for them more easily. For further information contact the Disability Support Service (email: disability@mdx.ac.uk).

18. JACS code (or other relevant coding system)	I100
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19. Relevant QAA subject benchmark group(s)	Computing
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20. Reference points

The following reference points were used in designing the programme:

- QAA computing subject benchmark statement (master's degrees in computing 2011)
- QAA framework for higher education qualifications in England, Wales and Northern Ireland
- QAA Quality code
- CLTE Learning and Quality Enhancement Handbook
- University's regulations for postgraduate taught programmes
- University equality and diversity policy document

21. Other information

Please note programme specifications provide a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve if s/he takes full advantage of the learning opportunities that are provided. More detailed information about the programme can be found in the rest of your programme handbook and the university regulations.

Curriculum map for *MSc Computer Science*

This section shows the highest level at which programme outcomes are to be achieved by all graduates, and maps programme learning outcomes against the modules in which they are assessed.

Programme learning outcomes

Knowledge and understanding	
A1	The ideas and concepts underlying a selected set of advanced topics in computer science.
A2	Appropriate computer science techniques to apply to a given problem.
A3	How to analyse, reason about and implement complex software systems.
A4	How to appraise the professional, legal and ethical framework within which a computing professional must operate.
Skills	
B1	Plan and apply appropriate techniques for the solution of problems in computer science.
B2	Utilise a range of modelling and abstraction techniques for the specification and design of software systems.
B3	Analyse complex problems systematically and implement effective solutions.
B4	Communicate effectively in writing, verbally and by presentation.
B5	Display effective team working skills to make a positive contribution, as a member or leader, to the work of a group.
B6	Plan and execute a challenging and substantial computing project by application of appropriate research methods.

