Programme Specification

1. Programme title	MComp Information Technology
2. Awarding institution	Middlesex University
3. Teaching institution	Middlesex University
4. Details of accreditation by professional/statutory/regulatory body	N/A
5. Final qualification	MComp, BSc, DipHE and CertHE
6. Year of validation	2018/19
Year of amendment	2019/20, 2021/22
7. Language of study	English
8. Mode of study	Full Time/Part Time/Thick Sandwich

9. Criteria for admission to the programme

Entry requirements are in accordance with the University regulations. We accept students from a range of backgrounds. Most students educated in the UK will have studied A-levels, AVCEs or an accredited Access Course. To enter a degree programme you would be expected to have achieved a specified number of UCAS tariff points, agreed annually and made available via the University Admissions web site or on application.

All candidates should normally possess at least grade C in GCSE maths and English Language, or equivalent. Mature applicants with relevant work experience are also welcome to apply.

International students who have not been taught in English must show evidence of proven ability in English such as TOEFL grade 550 or IELTS grade 6.0. The University provides pre-sessional English language courses throughout the year for candidates who do not meet the English requirements. For further information, visit the learning resources website at: https://unihub.mdx.ac.uk/student-life/your-voice/your-middlesex-your-impact/library-and-learning-resources

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

<table>
<tr><td></td></tr>
</table>

10. Aims of the programme

This is a four-year Master of Computing (MComp) programme which combines our BSc (Hons) Information Technology degree with a collection of Master's level modules.

The programme aims to:

- Provide an understanding of how IT systems can be used to support the activities of a wide range of organisations such as how a modern enterprise works and how to use a wide range of technologies to support its operation.
- Develop knowledge and skills that are relevant to current requirements of industry.
- Provide students with extended experience of both team-based and individual project work advancing their knowledge and practical skills in project management, leadership and team working.

The MComp Information Technology removes the need for applying for further funding to study a Master's level degree. On completion, the graduates will place themselves in a better position to compete in the graduate jobs market.

11. Programme outcomes*

A. Knowledge and understanding

On completion of this programme the successful student will have knowledge and understanding of, as well as the ability to critically reflect, evaluate and apply:

1. Essential facts, concepts, principles and theories relating to a range of advanced programming and development paradigms.
2. The use of scientific principles in the creation, use and support of information systems for the solution of practical problems.
3. The legal, social, ethical and professional issues involved in the exploitation of computer technology and in the adoption of appropriate professional and ethical and legal practices.
4. Various strategies and development plans, policies and processes for the accounting, budgeting and, where applicable, charging of IT resources and services.

Teaching/learning methods

Students gain knowledge and understanding through practical work that allows the exposure and exploration of underpinning theory and concepts. Guided reading and online content support students in developing their understanding of the subject area. An emphasis on formative feedback and tasks is built into all the first year modules and may include participation in online activities, in order to practice and explore the topics covered in classes more fully.

In the first year outcomes are assessed at an introductory level.

Assessment methods

Students' knowledge and understanding is assessed by a range of activities that include both formative (developed to provide feedback on learning) and summative (graded) tasks. A wide range of assessment methods are used.

5. Strategies for effective use of information technology to include databases and web technology and, taking account of the complex interrelations between hardware, software and people. 6. Information security issues in relation to the design, development and use of information systems.	Tasks may involve traditional approaches such as case studies, essays, presentations and logbooks and some less traditional approaches such as blogging and video stories
B. Skills On completion of this programme the successful student will be able to: 1. Demonstrate advanced analytical skills with powers of practical problem solving and the ability to see the wider picture. 2. Specify, design and construct effective implementation strategies for computer-based systems consistent with range of business wide needs including those found in industry. 3. Specify user/system interfaces and translate logical designs into physical designs taking account of target environment, performance requirements and existing systems. 4. Identify and manage resources necessary for all stages – analysis, planning, estimation, execution and improvement - of individual systems development to ensure technical, financial and quality targets are met. 5. Demonstrate practical competencies in application development, use or operation of various tools and facilities. 6. Recognise any risk and safety aspects that may be involved in the operation of computing equipment within a given context. 7. Critically apply their knowledge and skills to mastering new technical areas.	**Teaching/learning methods** Students gain practical skills through laboratory work and a range of exercises undertaken in lectures, seminars and workshops. On-line tasks may need to be completed outside of the task to ensure that sufficient practice takes place to reinforce the taught lessons. **Assessment methods** Students' practical skills are assessed by a wide range of activities which would include, report writing and logbooks, software and hardware development, short quizzes, the production of reports and examinations. Some work may require presentations and vivas.

12. Programme structure (levels, modules, credits and progression requirements)

12. 1 Overall structure of the programme

MComp Information Technology

Compulsory

Optional

Year 1

CST1150 Introduction to Programming	CST1340 Information in Organisations	CST1160 Emerging Technologies In Practice	CST1500 Computer Systems Architecture And Operating Sys.
30 credits	30 credits	30 credits	30 credits

Year 2

CST2130 Data Management and Business Intelligence	CST2120 Web Applications and Databases	CST2560 Project Management and Professional Practice	CST2310 Information Systems Design and Analysis
30 credits	30 credits	30 credits	30 credits
			CST2555 Operating Systems and Computer Networks
			30 credits

Year 3

CST3990 UG Individual Project	CST3562 Enterprise Networking and Automation	CST3120 Teaching Computing in the Secondary School	CST3130 Advanced Web Development with Big Data
30 credits	30 credits	30 credits	30 credits
CST3180 UX Design	CST3310 Strategic Management and Information Systems	CST3135 Digital Media Technology	CST3140 Novel Interaction Technologies
30 credits	30 credits	30 credits	30 credits
	CST3170 Artificial Intelligence	CST3145 Web-Based Mobile App Development	CST3340 Business Intelligence
	30 credits	30 credits	30 credits

Year 4

CST4790 MEng MComp Project Activity	CST4330 Information System Strategy and Management Level 7 module	CST4125 Blockchain Development Level 7 module	CST4135 Cyber and Information Security Level 7 module
60 credits	30 credits	30 credits	30 credits

Thick Sandwich Mode
Students taking the TKSW mode will undertake CST2400 Industrial Placement Year (120 credits) after Year 2, thus extending their programme duration by one academic year

12.2 Levels and modules		
Starting in academic year 2010/11 the University is changing the way it references modules to state the level of study in which these are delivered. This is to comply with the national Framework for Higher Education Qualifications. This implementation will be a gradual process whilst records are updated. Therefore the old coding is bracketed below.		
Level 4 (1)		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
Students must take all of the following: **CST1500** Computer Systems Architecture and Operating Systems **CST1150** Introduction to Programming **CST1160** Emerging Technologies in Practice **CST1340** Information in Organisations		Students are normally expected to achieve 120 credits at level 4 to progress to level 5
Level 5 (2)		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
Students must take all of the following: **CST2130** Data Management and Business Intelligence **CST2120** Web Applications and Databases **CST2560** Project Management and Professional Practice	Students must choose 1 module from the following: **CST2310** Information Systems Design and Analysis **CST2555** Operating Systems and Computer Networks	Students are normally expected to achieve 240 credits at levels 4 & 5 to progress to level 6.
Level 6 (3)		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS

Students must take all of the following:	Students must also choose 3 modules from the following:	Students are normally expected to achieve 340 credits at levels 4, 5 and 6 to progress to level 7.
CST3990 UG Individual Project	**CST3562** Enterprise Networking and Automation **CST3120** Teaching Computing in the Secondary School **CST3130** Advanced Web Development with Big Data **CST3180** UX Design **CST3310** Strategic Management and Information Systems **CST3135** Digital Media Technology **CST3140** Novel Interaction Technologies **CST3340** Business Intelligence **CST3145** Web-Based Mobile App Development **CST3170** Artificial Intelligence	
Level 7 (4)		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
Students must take all of the following: **CST4790** MEng-MComp Project Activity **CST4330** Information System Strategy and Management	Students must also choose one of two 30 credit modules from the following: **CST4025** Blockchain Development **CST4035** Cyber and Information Security	

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

Module level	Module code
CST3990	UG Individual Project
CST4790	MEng-MComp Project Activity

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 www.mdx.ac.uk/regulations/. Practical aspects of the programme are often assessed via coursework that may be carried out using specialist software and may include lab tests. Theoretical material is assessed by coursework and examinations. 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
Students will be encouraged to apply for placements in Year 3 of the programme. This is not compulsory, however they will be supported in terms of the searching for placements, generating CVs, interview technique. If they choose to take a placement year, this will extend the programme duration by one academic year. The Faculty of Science and Technology works with a number of employers to run specific information sessions describing the opportunities and application procedures.

16. Future careers (if applicable)
Students who graduate with a MComp degree in Information Technology from Middlesex University will be well placed to follow a wide range of exciting IT-based careers including network management, systems design engineering, software development, web-application development and management and administration or to go on to further study.

17. Particular support for learning (if applicable)
Students will be supported throughout their programme of study in IT by academic experts in the appropriate fields. In addition, students will be supported by a Learning Resource Centre that works closely with academics in order to offer the most up-to-date resources. All of the modules on Information Technology are supported by a team of Graduate Teaching Assistants and Technical Tutors who work with academic colleagues to ensure that labs are resourced, materials are available, and feedback is provided.

18. JACS code (or other relevant coding system)	G400
19. Relevant QAA subject benchmark group(s)	Computing

20. Reference points

The following reference points were used in designing this programme:
- QAA Computing subject benchmark statements, Computing (February, 2016) (https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-computing-16.pdf?sfvrsn=26e1f781_12)
- QAA Quality Code for Higher Education (February, 2015) (https://www.qaa.ac.uk/quality-code/the-existing-uk-quality-code)
- BCS The Chartered Institute for IT guidelines on course accreditation (May, 2018) (https://www.bcs.org/category/7066)
- Standard for Chartered IT Professional (https://www.bcs.org/upload/pdf/chartered-it-professional-standard.pdf)
- Skills Framework for the Information Age (SFIA) (https://www.sfia-online.org/en)
- Association for Computing Machinery (ACM) and Association for Information Systems (AIS) Global Competency Model for Graduate Degree Programs in Information Systems (May, 2017) (https://www.acm.org/binaries/content/assets/education/msis2016.pdf)
- Descriptors defining levels in the European Qualifications Framework (EQF) (https://ec.europa.eu/ploteus/en/content/descriptors-page)
- European e-Competence Framework (http://www.ecompetences.eu)
- Middlesex University Regulations (2018/19) (https://www.mdx.ac.uk/about-us/policies/university-regulations)
- Middlesex University Learning and Quality Enhancement Handbook (section 3) (https://www.mdx.ac.uk/about-us/policies/academic-quality/handbook/lqe-handbook-section-3)
- Middlesex University Policies (https://www.mdx.ac.uk/about-us/policies)
- Middlesex University Public Policy Statements (https://www.mdx.ac.uk/about-us/policies/public-policy-statements)

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 student programme handbook and the University Regulations.

Curriculum map for *MComp Information Technology*

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	Essential facts, concepts, principles and theories relating to a range of advanced programming and development paradigms.
A2	The use of scientific principles in the creation, use and support of information systems for the solution of practical problems, founded on appropriate technological disciplines.
A3	The legal, social, ethical and professional issues involved in the exploitation of computer technology and in the adoption of appropriate professional and ethical and legal practices.
A4	Various strategies and development plans, policies and processes for the accounting, budgeting and, where applicable, charging of IT resources and services.
A5	Strategies for effective use of information technology to include databases and web technology and, taking account of the complex interrelations between hardware, software and people.
A6	Information security issues in relation to the design, development and use of information systems.
Skills	
B1	Demonstrate advanced analytical thinking skills with powers of practical problem solving and the ability to see the wider picture.
B2	Specify, design and construct effective implementation strategies for computer-based systems consistent with range of business wide needs including those found in industry.
B3	Specify user/system interfaces and translate logical designs into physical designs taking account of target environment, performance requirements and existing systems.
B4	Identify and manage resources necessary for all stages – analysis, planning, estimation, execution and improvement - of individual systems development to ensure technical, financial and quality targets are met.
B5	Demonstrate practical competencies in the development, use or operation of database web management system tools and facilities and also in the selection, provision and use of database architectures, software and facilities.
B6	Recognise any risk and safety aspects that may be involved in the operation of computing equipment within a given context.
B7	Critically apply their knowledge and skills to mastering new technical areas

Programme outcomes													
A1	A2	A3	A4	A5	A6		B1	B2	B3	B4	B5	B6	B7
Highest level achieved by all graduates													
7	7	7	7	7	7		7	7	7	7	7	7	7

Module Title	Module Code by Level	A1	A2	A3	A4	A5	A6		B1	B2	B3	B4	B5	B6	B7	
Computer Systems Architecture and Operating Systems	CST1500	✓			✓		✓		✓			✓		✓		
Introduction to Programming	CST1150	✓	✓						✓							
Emerging Technologies in Practice	CST1160		✓	✓						✓	✓			✓		

Module	Code	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Information in Organisations	CST1340	✓	✓			✓			✓	✓			✓	✓		
Data Management and Business Intelligence	CST2130			✓	✓		✓		✓	✓		✓		✓		
Web Applications and Databases	CST2120	✓	✓			✓	✓			✓			✓	✓		
Project Management and Professional Practice	CST2560	✓	✓		✓				✓		✓	✓				
Information Systems Design and Analysis	CST2310	✓									✓		✓			
Operating Systems and Computer Networks	CST2555	✓	✓						✓			✓				
Industrial Placement	CST2400	✓			✓				✓			✓				
Enterprise Networking and Automation	CST3562	✓	✓				✓		✓		✓		✓	✓		
Teaching Computing in the Secondary School	CST3120		✓	✓					✓	✓				✓		
Advanced Web Development with Big Data	CST3130	✓	✓			✓	✓			✓	✓	✓	✓	✓	✓	
UX Design	CST3180	✓		✓		✓			✓		✓		✓	✓		
Strategic Management and Information Systems	CST3310			✓	✓				✓			✓		✓		
Digital Media Engineering	CST3135	✓	✓		✓				✓			✓	✓	✓		
Novel Interaction Technologies	CST3140	✓	✓	✓		✓			✓		✓		✓	✓		
Business Intelligence	CST3340	✓	✓		✓				✓		✓	✓	✓	✓		
Web-Based Mobile App Development	CST3145	✓	✓			✓	✓			✓	✓	✓	✓	✓	✓	
Artificial Intelligence	CST3170	✓	✓						✓	✓				✓		
UG Individual Project	CST3990	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓		
MEng-MComp Project Activity	CST4790	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		
Blockchain Development	CST4125	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓		✓	
Cyber and Information Security	CST4135	✓		✓		✓	✓		✓	✓		✓		✓	✓	
Information System Strategy and Management	CST4330			✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	