

## ***BSc (Hons) Computer Science***

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### **Programme Specification**



<b>1. Programme title</b>	BSc (Hons) Computer Science BSc (Hons) Computer Science with FY
<b>2. Awarding institution</b>	Middlesex University
<b>3. Teaching institution</b>	Middlesex University
<b>4. Details of accreditation by professional/statutory/regulatory body</b>	N/A
<b>5. Final qualification</b>	BSc Honours, BSc, DipHE and CertHE
<b>6. Year of validation</b>	2018/19
<b>Year of amendment</b>	2019/20, 2021/22
<b>7. Language of study</b>	English
<b>8. Mode of study</b>	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. Please refer to the programme specification for the Foundation Year for criteria for admission to the [BSc \(Hons\) Computer Science with Foundation Year](#) programme.

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'.

## 10. Aims of the programme

The programme aims to:

- Provide students with a thorough grounding in the practical and theoretical fundamentals of Computer Science.
- Develop knowledge and skills that are relevant to current requirements of industry.

## 11. Programme outcomes\*

### A. Knowledge and understanding

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

1. A range of underlying theories relevant to computer science.
2. The process of systems development.
3. The interaction between technology and society, and the role of computer professionals within this.
4. A range of specialised topics within Computer Science.

### Teaching/learning methods

Students gain knowledge and understanding through

- Lectures and tutorials.
- Guided research.
- Supervised lab work.
- Case studies.

### Assessment methods

Students' knowledge and understanding is assessed by

- Practical demonstrations.
- Reports and essays.
- Presentations.
- Individual and group work.
- Computer-based in class assessment

### B. Skills

On completion of this programme the successful student will be able to:

1. Apply sound principles to the construction and maintenance of computer-related artefacts.
2. Verify and validate computer-based systems.

### Teaching/learning methods

Students learn cognitive skills through

- Lectures and tutorials.
- Guided research.
- Supervised lab work.
- Case studies.

### Assessment methods

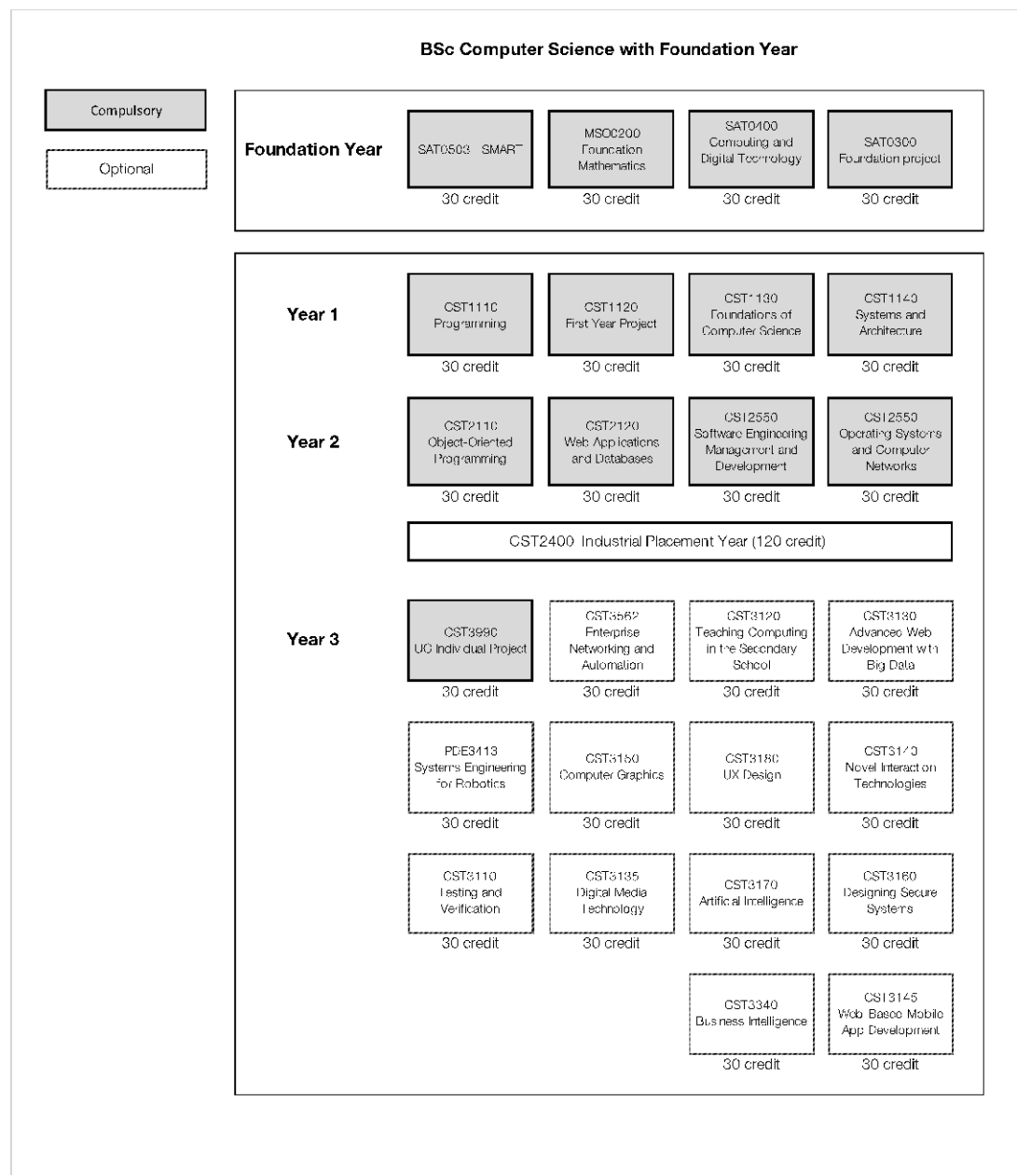
Students' cognitive skills are assessed by

- Practical demonstrations.

<p>3. Apply appropriate theories to the design and evaluation of systems.</p> <p>4. Adapt and apply their knowledge and skills to mastering new technical areas.</p>	<ul style="list-style-type: none"> <li>• Reports and essays.</li> <li>• Presentations.</li> <li>• Individual and group work.</li> <li>• Computer-based in class assessment</li> </ul>
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## 12. Programme structure (levels, modules, credits and progression requirements)

### 12. 1 Overall structure of the programme



## 12.2 Levels and modules

Please refer to the programme specification for the Foundation Year for the modules to be taken during the foundation year of the [BSc \(Hons\) Computer Science with Foundation Year](#) programme.

Level 4 (1)		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
<p>Students must take all of the following:</p> <p><b>CST1110</b> Programming  <b>CST1120</b> First Year Project  <b>CST1130</b> Foundations of Computer Science  <b>CST1140</b> Systems and Architecture</p>		<p>Students are normally expected to achieve 120 credits at level 4 to progress to level 5</p>
Level 5 (2)		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS
<p>Students must take all of the following:</p> <p><b>CST2110</b> Object-Oriented Programming  <b>CST2120</b> Web Applications and Databases  <b>CST2550</b> Software Engineering Management and Development  <b>CST2555</b> Operating Systems and Computer Networks</p>	<p>The following is optional placement module:</p> <p><b>CST2400</b> Industrial Placement (one year)</p>	<p>Students are normally expected to achieve 240 credits at levels 4 &amp; 5 to progress to level 6.</p>
Level 6 (3)		
COMPULSORY	OPTIONAL	PROGRESSION REQUIREMENTS

Students must take all of the following:	Students must also choose 3 modules from the following*:	
<b>CST3990</b> UG Individual Project	<b>CST3110</b> Testing and Verification <b>CST3120</b> Teaching Computing in the Secondary School <b>CST3130</b> Advanced Web Development with Big Data <b>CST3140</b> Novel Interaction Technologies <b>CST3150</b> Computer Graphics <b>CST3160</b> Designing Secure Systems <b>CST3170</b> Artificial Intelligence <b>CST3180</b> UX Design <b>CST3135</b> Digital Media Technology  <b>PDE3413</b> Systems Engineering for Robotics  <b>CST3562</b> Enterprise Networking and Automation  <b>CST3145</b> Web-Based Mobile App Development  <b>CST3340</b> Business Intelligence	

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

Module level	Module code
CST3990	UG Individual Project

### 13. Curriculum map

See attached.

### 14. Information about assessment regulations

Information on the University's formal assessment regulations, including details of how award classifications are determined, can be found in the University Regulations available online at <http://www.mdx.ac.uk/regulations/>.

Grades are awarded on the standard University scale of 1–20, with Grade 1 being the highest.

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. 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 good honours degree in Computer Science from Middlesex University will be well placed to follow a career path in a computer based industry or to go on to further study. Industrial careers include: IT management; software engineering; software architecture; hardware and software designer; web-developer; database management and administration.

### **17. Particular support for learning (if applicable)**

Students will be supported throughout their programme of study in Computer Science 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 Computer Science 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. In the case of the First Year, the GTAs and TTs will be used to ensure that feedback is available throughout the lab sessions for all students without unreasonable delay

### **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](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 BSc (Hons) *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	A range of underlying theories relevant to computer science.
A2	The process of systems development.
A3	The interaction between technology and society and the role of computer professionals within this.
A4	A range of specialized topics within Computer Science.
Skills	
B1	Apply sound principles to the construction and maintenance of computer-related artifacts.
B2	Verify and validate computer-related systems.
B3	Apply appropriate theories to the design and evaluation of systems.
B4	Adapt and critically apply their knowledge and skills to mastering new technical areas.

Programme outcomes														
A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	B4	B5	B6	B7	B8
Highest level achieved by all graduates														
6	6	6	6	-	-	-	6	6	6	6	-	-	-	-

Module Title	Module Code by Level	A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	B4	B5	B6	B7	B8
Programming	CST1110	✓			✓				✓			✓				
First Year Project	CST1120		✓	✓						✓						
Foundations of Computer Science	CST1130	✓									✓					
Systems and Architecture	CST1140	✓										✓				
Object-Oriented Programming	CST2110		✓	✓					✓	✓	✓	✓				
Web Applications and Databases	CST2120	✓		✓	✓				✓		✓	✓				
Software Engineering Management and Development	CST2550	✓	✓		✓				✓		✓	✓				
Operating Systems and Computer Networks	CST2555	✓	✓						✓			✓				
Industrial Placement (120 credits)	CST2400	✓	✓	✓	✓				✓	✓	✓	✓				
Testing and Verification	CST3110	✓			✓				✓	✓		✓				
Teaching Computing in the Secondary School	CST3120			✓								✓				
Advanced Web Development with Big Data	CST3130	✓	✓	✓	✓				✓	✓	✓	✓				
Novel Interaction Technologies	CST3140	✓		✓	✓				✓		✓	✓				
Computer Graphics	CST3150	✓			✓				✓		✓	✓				
Designing Secure Systems	CST3160	✓	✓	✓	✓				✓			✓				
Artificial Intelligence	CST3170	✓			✓				✓	✓		✓				
UX Design	CST3180	✓	✓	✓	✓				✓		✓	✓				
Digital Media Technology	CST3135	✓		✓	✓				✓	✓		✓				
Systems Engineering for Robotics	PDE3413	✓			✓				✓	✓		✓				
Enterprise Networking and Automation	CST3562	✓			✓				✓	✓		✓				
Web-Based Mobile App Development	CST3145	✓	✓	✓	✓				✓	✓	✓	✓				
Business Intelligence	CST3340	✓		✓	✓				✓		✓	✓				
UG Individual Project	CST3990		✓	✓					✓	✓	✓	✓				