

## Programme Specification

Programme Summary Information			
1	<b>Course Titles</b>		BSc (Hons) Computer Science MSci Computer Science
2	<b>Course Codes</b>	<b>UCAS Codes</b>	BSc (Hons) US0675    G401 MSci UM0039        I101
3	<b>Awarding Institution</b>		Birmingham City University
4	<b>Teaching Institution(s)</b> (if different from point 3)		
5	<b>Professional Statutory or Regulatory Body (PSRB) accreditation</b> (if applicable)		The British Computer Society

6	Programme Description
	<p>Do you want to develop the skills needed to be a leading IT professional? Our BSc (Hons) /MSci Computer Science course will develop your skills in producing computer systems solutions. You will gain a sound mathematical and scientific understanding alongside developing the professional attitude needed in industry.</p> <p>While studying your Computer Science degree with us, you'll also have access to dedicated industry-standard facilities in a fully-equipped lab running the latest software. Plus, we're home to a Cisco Systems, a Microsoft Academy Centre and Amazon Web Services Academy, so you can rest assured, knowing your university course will prepare you for a successful career in the industry.</p> <p><b>What's covered in the course?</b></p> <p>Studying computing with us puts you at the heart of an exciting, innovative community. You will study the fundamental concepts of computer science in your first year, including computer programming, data structures and algorithms, information systems, computer networks and computer architecture.</p> <p>Part of your first-year assessment will involve taking part in our annual Innovation Fest, where students get together to solve society's problems with creative technology. Previous projects have included medical assistance drones, accessible gaming controllers, and smart housing solutions. The event brings together students, academics and industry guests, so it's a great way to have fun, build experience and network, and win prizes!</p> <p>In your second year, you will consolidate your learning by studying advanced subjects that emphasise software engineering skills. You will also be introduced to topics such as operating systems, cyber security, discrete mathematics, and web application development.</p> <p>In your final year, you will broaden your understanding of computer science by studying specialised subjects like artificial intelligence, cloud computing and wearable computing. In addition, you will complete an individual project in order to demonstrate your technical skills and general employability in preparation for career progression. The individual project simulates typical graduate workplace tasks that require in-depth knowledge and skills in a specific area of computer science. This will include consideration of wider issues and the ability to manage activities and resources, and to generate, implement and report on solutions to meet task objectives.</p>

During your course, you'll have the opportunity to take a professional placement year between your second and third year. This is something we recommend highly, as it will give you an invaluable opportunity to hone your expertise, try out a potential career path and get relevant workplace experience that is valued by many employers. It will also boost your CV.

Throughout your studies, you'll be supported by our expert teaching staff, all of whom have a wide range of research and industrial experience in areas such as computer security and software engineering, which they use to enhance the curriculum.

This Computer Science course has been carefully designed to provide you with a comprehensive academic background that combines the professional skills that will set you apart from your peers.

You'll be based in the Millennium Point building in our City Centre Campus, where you'll have at your fingertips an array of professional-standard facilities with which to develop your key practical skills and consolidate your academic learning.

Thanks to our strong partnerships with the Linux Professional Institute (LPI) and the Oracle Academy, you'll have enviable access to leading industry knowledge. This is complemented by the Cisco Systems and Microsoft Academy Centre, both situated in-house.

<b>7 Programme Awards</b>			
<b>7a</b>	<b>Possible Final Awards for the Computer Science programme</b>	<b>Level</b>	<b>Credits Awarded</b>
	<b>For BSc (Hons):</b> Bachelor of Science with Honours Computer Science Bachelor of Science with Honours Computer Science with Professional Placement Year	6 6	360 480
	<b>For MSci:</b> Integrated Master of Science Computer Science Integrated Master of Science Computer Science with Professional Placement Year	7 7	480 600
<b>7b</b>	<b>Exit Awards and Credits Awarded</b>		
	Certificate of Higher Education Computer Science	4	120
	Diploma of Higher Education Computer Science	5	240
	Bachelor of Science Computer Science	6	300

<b>8 Derogation from the University Regulations</b>	
	<p>A maximum volume of 30 credits per course in a Bachelor's or Integrated Master's degree can be compensated, except that any compensation of Level 3 modules is not included in that limit.</p> <p>A maximum volume of 20 credits per course in a Master's degree (other than an integrated Master's degree) can be compensated.</p> <p>No condonement of modules at Levels 4-7 is permitted.</p> <p>Where appropriate, a stage mean of at least 50% is required for students to progress from Bachelor's level (Level 6) on to the final stage of an Integrated Master's degree (Level 7), or to transfer course from a relevant Bachelor's degree to an Integrated Master's degree.</p>

<b>9 Delivery Patterns</b>			
<b>Mode(s) of Study</b>	<b>Location(s) of Study</b>	<b>Duration of Study</b>	<b>Code(s)</b>
BSc (Hons) Full Time	City Centre	3 years	US0675
BSc (Hons) with Professional Placement Year	City Centre	4 years	US1090
MSci Full Time	City Centre	4 years	UM0039
MSci with Professional Placement Year	City Centre	5 years	UM0060

<b>10 Entry Requirements</b>	
The admission requirements for this programme are stated on the programme page of the BCU website at <a href="https://www.bcu.ac.uk/">https://www.bcu.ac.uk/</a> or may be found by searching for the programme entry profile located on the UCAS website.	

<b>11 Course Learning Outcomes</b>	
<b>Knowledge &amp; Understanding</b>	
<b>1</b>	Demonstrate knowledge and understanding of essential facts, concepts, theories and principles of computer technology.
<b>2</b>	Knowledge and understanding of contemporary tools and technologies to produce solutions relevant to the domain of computer science to meet a set of agreed requirements.
<b>3</b>	Understand the roles and responsibilities of a professional working within the computing profession.
<b>4</b>	Appreciate the social, environmental, ethical, economic and commercial considerations that impact on the processes of computer systems.
<b>Cognitive &amp; Intellectual Skills</b>	
<b>5</b>	Apply the modelling and design of computer-based systems for the purposes of comprehension, communication, prediction and the understanding of trade-offs.
<b>6</b>	Specify the requirements and practical constraints of computer-based systems (including computer systems, information systems, and distributed systems) considering a wide range of aspects including commercial, economic, legal, ethical and social issues.
<b>7</b>	Recognise and analyse criteria and specifications appropriate to specific problems, and plan strategies for their solution.
<b>8</b>	Analyse the extent to which a computer-based system meets the criteria defined for its current use and future development.
<b>9</b>	Evaluate systems in terms of general quality attributes and possible trade-offs presented within the given problem the ability to recognise any risks or safety aspects that may be involved in the operation of computing equipment within a given context.
<b>Practical &amp; Professional Skills</b>	
<b>10</b>	Specify, design and construct computer-based systems.
<b>11</b>	Deploy effectively the tools, theories and methodologies used for the construction, design and implementation and documentation of computer applications, with particular emphasis on understanding the whole process involved in the effective deployment of computers to solve practical problems.
<b>12</b>	Work as a member of a development team, recognising the different roles within a team and different ways of organising teams.
<b>13</b>	Operate computing equipment effectively, taking into account its logical and physical properties.

	<b>Key Transferable Skills</b>
<b>14</b>	Structure and communicate ideas effectively, both orally and in writing to broad range of audience including specialist and no specialist audiences.
<b>15</b>	Manage learning and self-development, including time management and the development of organisational skills.
<b>16</b>	Apply numeracy in both understanding and presenting cases involving a quantitative dimension.
<b>17</b>	Show awareness of the rapid rate of change in the IT industry and the need for practitioners continually to update their skills and knowledge.

<b>12</b>	<b>Course Requirements</b>																																																	
<b>12a</b>	<p><b>Level 4:</b></p> <p><i>In order to complete this programme a student must successfully complete all the following CORE modules (totalling 120 credits):</i></p> <table border="1"> <thead> <tr> <th>Module Code</th> <th>Module Name</th> <th>Credit Value</th> </tr> </thead> <tbody> <tr> <td>CMP4266</td> <td>Computer Programming</td> <td>20</td> </tr> <tr> <td>CMP4267</td> <td>Computer Systems</td> <td>20</td> </tr> <tr> <td>DIG4166</td> <td>Website Design and Development</td> <td>20</td> </tr> <tr> <td>CMP4272</td> <td>Data Structures and Algorithms</td> <td>20</td> </tr> <tr> <td>CMP4269</td> <td>Network Fundamentals</td> <td>20</td> </tr> <tr> <td>CMP4285</td> <td>Innovation Project</td> <td>20</td> </tr> </tbody> </table> <p><b>Level 5:</b></p> <p><i>In order to complete this programme a student must successfully complete all the following CORE modules (totalling 120 credits):</i></p> <table border="1"> <thead> <tr> <th>Module Code</th> <th>Module Name</th> <th>Credit Value</th> </tr> </thead> <tbody> <tr> <td>CMP5332</td> <td>Object Oriented Programming</td> <td>20</td> </tr> <tr> <td>CMP5xxx</td> <td>Operating Systems and DevOps</td> <td>20</td> </tr> <tr> <td>DIG5127</td> <td>Database and Web Application Development</td> <td>20</td> </tr> <tr> <td>CMP5361</td> <td>Computer Mathematics and Declarative Programming</td> <td>20</td> </tr> <tr> <td>CMP5329</td> <td>Cyber Security</td> <td>20</td> </tr> <tr> <td>CMP5354</td> <td>Software Design</td> <td>20</td> </tr> </tbody> </table> <p><b>Professional Placement Year (optional)</b></p> <p><i>In order to qualify for the award of Bachelor of Science with Honours Computer Science with Professional Placement Year or Integrated Masters of Science Computer Science with Professional Placement Year, a student must successfully complete all of the modules listed as well as the following Level 5 module:</i></p> <table border="1"> <thead> <tr> <th>Module Code</th> <th>Module Name</th> <th>Credit Value</th> </tr> </thead> <tbody> <tr> <td>PPY5004</td> <td>Professional Placement</td> <td>120</td> </tr> </tbody> </table>		Module Code	Module Name	Credit Value	CMP4266	Computer Programming	20	CMP4267	Computer Systems	20	DIG4166	Website Design and Development	20	CMP4272	Data Structures and Algorithms	20	CMP4269	Network Fundamentals	20	CMP4285	Innovation Project	20	Module Code	Module Name	Credit Value	CMP5332	Object Oriented Programming	20	CMP5xxx	Operating Systems and DevOps	20	DIG5127	Database and Web Application Development	20	CMP5361	Computer Mathematics and Declarative Programming	20	CMP5329	Cyber Security	20	CMP5354	Software Design	20	Module Code	Module Name	Credit Value	PPY5004	Professional Placement	120
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**Level 6:**

*In order to complete this programme a student must successfully complete all the following CORE modules (totalling 120 credits):*

Module Code	Module Name	Credit Value
CMP6200	Individual Honours Project	40
CMP6214	User Experience Design	20
CMP6202	Artificial Intelligence and Machine Learning	20
CMP6210	Cloud Computing	20
CMP6213	Mobile and Wearable Application Development	20

**Level 7:**

*In order to complete this programme a student must successfully complete all the following CORE modules (totalling 120 credits):*

Module Code	Module Name	Credit Value
CMP7173	Semantic Web and Knowledge Engineering	20
CMP7174	Service Oriented Architecture	20
CMP7214	Advanced Databases	20
CMP7208	Group Master's Project	60

## 12b Structure Diagram

The modules in the course are worth 20 credits each (except where indicated).

Semester	<b>Level 4 – Year 1</b>		
1	Computer Programming	Computer Systems	Website Design and Development
2	Data Structures and Algorithms	Network Fundamentals	Innovation Project
<b>Level 5 – Year 2</b>			
1	Object Oriented Programming	Operating Systems and DevOps	Database and Web Application Development
2	Computer Mathematics and Declarative Programming	Cyber Security	Software Design
<b>Professional Placement – Year 3 (optional)</b>			
<b>Professional Placement Module (120 credits)</b>			
<b>Level 6 – Year 4</b>			
1	User Experience Design	Artificial Intelligence and Machine Learning	Individual Honours Project [40 credits]
2	Mobile and Wearable Application Development	Cloud Computing	
<b>Level 7 – Year 5</b>			
1	Service Oriented Architecture	Semantic Web and Knowledge Engineering	Advanced Databases
2	Group Master's Project [60 credits]		

### 13 Overall Student Workload and Balance of Assessment

Overall student *workload* consists of class contact hours, independent learning and assessment activity, with each credit taken equating to a total study time of around 10 hours. While actual contact hours may depend on the optional modules selected, the following information gives an indication of how much time students will need to allocate to different activities at each level of the course.

- *Scheduled Learning* includes lectures, practical classes and workshops, contact time specified in timetable
- *Directed Learning* includes placements, work-based learning, external visits, on-line activity, Graduate+, peer learning
- *Private Study* includes preparation for exams

The *balance of assessment* by mode of assessment (e.g. coursework, exam and in-person) depends to some extent on the optional modules chosen by students. The approximate percentage of the course assessed by coursework, exam and in-person is shown below.

#### Level 4

##### Workload

##### 25% time spent in timetabled teaching and learning activity

Activity	Number of Hours
Scheduled Learning	304
Directed Learning	371
Private Study	541
<b>Total Hours</b>	<b>1200</b>

##### Balance of Assessment

Assessment Mode	Percentage
Coursework	100%
Exam	0
In-Person	0%

#### Level 5

##### Workload

##### 24% time spent in timetabled teaching and learning activity

Activity	Number of Hours
Scheduled Learning	288
Directed Learning	371
Private Study	541
<b>Total Hours</b>	<b>1200</b>

##### Balance of Assessment

Assessment Mode	Percentage
Coursework	77%
Exam	23%
In-Person	0



**Level 6**
**Workload**
**17% time spent in timetabled teaching and learning activity**

<b>Activity</b>	<b>Number of Hours</b>
Scheduled Learning	202
Directed Learning	260
Private Study	738
<b>Total Hours</b>	<b>1200</b>

**Balance of Assessment**

<b>Assessment Mode</b>	<b>Percentage</b>
Coursework	94%
Exam	0
In-Person	6%

**Level 7**
**Workload**
**14% time spent in timetabled teaching and learning activity**

<b>Activity</b>	<b>Number of Hours</b>
Scheduled Learning	162
Directed Learning	192
Private Study	846
<b>Total Hours</b>	<b>1200</b>

**Balance of Assessment**

<b>Assessment Mode</b>	<b>Percentage</b>
Coursework	80%
Exam	0
In-Person	20%