Course Specification

Course Summary Information				
1	**Course Title**		BSc (Hons) Computer Science with Foundation Year	
2	**BCU Course Code**	**UCAS Code**	US0675F	I10B
3	**Awarding Institution**		Birmingham City University	
4	**Teaching Institution(s)** (if different from point 3)			
5	**Professional Statutory or Regulatory Body (PSRB) accreditation** (if applicable)			

6	**Course Description**
	Do you want to develop the skills needed to be a leading IT professional? BSc Computer Science with a Foundation Year 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. 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 (AWS), so you can rest assured knowing our university course will prepare you for a successful career in the industry. The Foundation Year course option enables you to study for our BSc (Hons) degree over an extended full-time duration of four years by including a Foundation Certificate (year one of four). The Foundation Certificate provides a broad study programme that underpins the follow-on degree. In order to progress to the next year of your degree, it is necessary to achieve a pass in all of the modules of the Foundation Certificate. **What's covered in the course?** You will study the fundamental concepts of computer science, including computer programming, data structures and algorithms, information systems, computer networks and computer architecture. 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. Broaden your understanding of computer science by studying specialised subjects like artificial intelligence, cloud computing and wearable computing. In addition, you'll complete an individual project in order to demonstrate your technical skills and general employability in preparation for your future career. The individual project simulates typical workplace tasks that require in-depth knowledge and skills in a specific area of computer science. You'll consider wider issues and develop the ability to manage activities and resources, and to generate, implement and report on solutions to meet task objectives.

	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. 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 of which are based here. This 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 at Millennium Point building at 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.

7	**Course Awards**		
7a	**Name of Final Award**	**Level**	**Credits Awarded**
	Bachelor of Science with Honours Computer Science Bachelor of Science with Honours Computer Science with Professional Placement Year	6 6	480 600
7b	**Exit Awards and Credits Awarded**		
	Foundation Certificate Computing Certificate of Higher Education Computer Science Diploma of Higher Education Computer Science Bachelor of Science Computer Science	3 4 5 6	120 240 360 420

8	**Derogation from the University Regulations**
	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. A maximum volume of 20 credits per course in a Master's degree (other than an integrated Master's degree) can be compensated. No condonement of modules at Levels 4-7 is permitted. 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.

9	**Delivery Patterns**		
Mode(s) of Study	**Location(s) of Study**	**Duration of Study**	**Code(s)**
Full Time	City Centre	4 years	US0675F
With Professional Placement Year	City Centre	5 years	US0675FS

10	Entry Requirements

The admission requirements for this course are stated on the programme page of the BCU website at https://www.bcu.ac.uk/ or may be found by searching for the programme entry profile located on the UCAS website.

11	Course Learning Outcomes
	Knowledge & Understanding
1	Demonstrate knowledge and understanding of essential facts, concepts, theories and principles of computer technology.
2	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.
3	Understand the roles and responsibilities of a professional working within the computing profession.
4	Appreciate the social, environmental, ethical, economic and commercial considerations that impact on the processes of computer systems.
	Cognitive & Intellectual Skills
5	Apply the modelling and design of computer-based systems for the purposes of comprehension, communication, prediction and the understanding of trade-offs.
6	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.
7	Recognise and analyse criteria and specifications appropriate to specific problems, and plan strategies for their solution.
8	Analyse the extent to which a computer-based system meets the criteria defined for its current use and future development.
9	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.
	Practical & Professional Skills
10	Specify, design and construct computer-based systems.
11	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.
12	Work as a member of a development team, recognising the different roles within a team and different ways of organising teams.
13	Operate computing equipment effectively, taking into account its logical and physical properties.
	Key Transferable Skills
14	Structure and communicate ideas effectively, both orally and in writing to broad range of audience including specialist and no specialist audiences.
15	Manage learning and self-development, including time management and the development of organisational skills.
16	Apply numeracy in both understanding and presenting cases involving a quantitative dimension.
17	Show awareness of the rapid rate of change in the IT industry and the need for practitioners continually to update their skills and knowledge.

12	Course Requirements

12a Level 3:

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
CMP3010	Fundamental Mathematics	20
CMP3014	Fundamentals of Digital Technology	20
CMP3012	Web Application Design	20
CMP3016	Emerging Technologies	20
CMP3015	Independent Practice	20
CMP3009	Foundations of Programming	20

Level 4:

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
CMP4266	Computer Programming	20
CMP4267	Computer Systems	20
CMP4310	Website Design and Development	20
CMP4272	Data Structures and Algorithms	20
CMP4269	Network Fundamentals	20
CMP4285	Innovation Project	20

Level 5:

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
CMP5332	Object Oriented Programming	20
CMP5371	Operating Systems and DevOps	20
CMP5361	Computer Mathematics and Declarative Programming	20
CMP5387	Backend Web-services Development and Database Engineering	20
CMP5329	Cyber Security	20
CMP5354	Software Design	20

Professional Placement Year (optional)

In order to qualify for the award of Bachelor of Science with Honours Computer Science with Foundation Year and Professional Placement Year, a student must successfully complete all of the modules listed as well as the following Level 5 module:

Module Code	Module Name	Credit Value
PPY5004	Professional Placement	120

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
CMP6210	Cloud Computing	20
CMP6213	Mobile and Wearable Application Development	20
CMP6202	Artificial Intelligence and Machine Learning	20

12b Structure Diagram

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

Semester	Year 1 - Level 3		
2	Emerging Technologies	Independent Practice	Foundations of Programming
1	Fundamental Mathematics	Fundamentals of Digital Technology	Web Application Design

	Year 2 - Level 4		
1	Computer Programming	Computer Systems	Website Design and Development
2	Data Structures and Algorithms	Network Fundamentals	Innovation Project
	Year 3 - Level 5		
1	Object Oriented Programming	Operating Systems and DevOps	Backend Web-services Development and Database Engineering
2	Computer Mathematics and Declarative Programming	Cyber Security	Software Design
	Professional Placement Year 4 (Optional) 120 Credits)		
	Year 5 - Level 6		
1	User Experience Design	Artificial Intelligence & Machine Learning	Individual Honours Project 40 credits
2	Mobile and Wearable Application Development	Cloud Computing	

Professional Placement Year

A Professional Placement Year option is available and encouraged for all students. This will be available following year 2 of the course. You will be given support by the faculty placements team to locate a suitable and relevant position in the computing or allied industries.

The university has experience across our courses that those students who take the Professional Placement Year option usually perform better in the final year, and achieve better employability options, consequently you are actively encouraged to take the Professional Placement Year option.

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 3

Workload

37% time spent in timetabled teaching and learning activity

Activity	Number of Hours
Scheduled Learning	456
Directed Learning	400
Private Study	344
Total Hours	1200

Balance of Assessment

Assessment Mode	Percentage
Coursework	78%
Exam	0
In-Person	22%

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
Total Hours	1200

Balance of Assessment

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

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
Total Hours	1200

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

Activity	Number of Hours
Scheduled Learning	202
Directed Learning	260
Private Study	738
Total Hours	1200

Balance of Assessment

Assessment Mode	Percentage
Coursework	94%
Exam	0
In-Person	6%