

## Programme Specification

Programme Summary Information			
1	<b>Course Titles</b>		BSc (Hons) Computer Networks and Security MSci Computer Networks and Security
2	<b>BCU Course Codes</b>	<b>UCAS Codes</b>	BSc (Hons) US0671 GG49 MSci UM0041 I122
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)		

6	Programme Description
	<p>Fascinated by cyber security in today's society? It's a key concern for modern organisations in our digital world. Secure communication technologies form the bedrock of our modern connected mobile society and our BSc (Hons) / MSci Computer Networks and Security degree course focuses on the practical needs of businesses that require high quality computer and network security, ensuring you're equipped for a career in this increasingly important industry.</p> <p><b>What's covered in the course?</b></p> <p>The course takes a practice-led approach, making use of equipment and tools found in the industry to give you the best preparation for a successful career. Our approach prioritises the practical skills sought by industry, backing this up with a thorough understanding of theory. The course delivers the latest in computing, network and security technologies, with the opportunity to gain additional accreditation from Cisco, Juniper, Huawei, Palo Alto and the Linux Professional Institute. Birmingham City University is also home to Cisco Systems, Juniper, Palo Alto and the Microsoft Academy Centres. You'll learn from a well-rounded curriculum in computer network engineering, programming, server systems, security theory and practice, as well as management-level skills such as project and change management, maximizing your career potential.</p> <p>Studying computing with us puts you at the heart of an exciting, innovative community. 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 is a great way to have fun, build experience and network, and win prizes!</p> <p>Upon graduation, you could progress into a career as a network security engineer, network administrator, and network security analyst or network security architect.</p>

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

<b>8 Derogations from the University Regulations</b>	
	<ol style="list-style-type: none"> <li>1. 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.</li> <li>2. A maximum volume of 20 credits per course in a Master's degree (other than an integrated Master's degree) can be compensated.</li> <li>3. No condonement of modules at Levels 4-7 is permitted.</li> <li>4. 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.</li> </ol>

<b>9 Delivery Patterns</b>			
<b>Mode(s) of Study</b>	<b>Location</b>	<b>Duration of Study</b>	<b>Code</b>
BSc (Hons) Full Time	City Centre	3 years	US0671
BSc (Hons) with Professional Placement Full Time	City Centre	4 years	US1086
MSci Full Time	City Centre	4 years	UM0041
MSci with Professional Placement Full Time	City Centre	5 years	UM0056

<b>10</b>	<b>Entry Requirements</b>
<p>The admission requirements for this course are stated on the course 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 course entry profile located on the UCAS website.</p>	

<b>11</b>	<b>Programme Learning Outcomes</b>
	<b>Knowledge &amp; Understanding</b>
<b>1</b>	Demonstrate knowledge and understanding of network design and systems management, analysis of business requirements and documentation procedures for Network Design and systems management.
<b>2</b>	Demonstrate knowledge of principles and underlying technologies of computer and data communications, device operating systems, and their underpinning protocols and data structures.
<b>3</b>	Demonstrate knowledge and understanding of appropriate tools, techniques and standards used in designing, managing and securing data communication systems and computer networked systems.
<b>4</b>	Describe the open standards for data communication systems and principal requirements for network and information security.
	<b>Cognitive &amp; Intellectual Skills</b>
<b>5</b>	Make proficient use of information and materials from a variety of sources for independent enquiry and learning.
<b>6</b>	Demonstrate a creative and innovative ability in the synthesis of solutions and in formulating designs in secure digital and computer networked systems.
<b>7</b>	Draw independent conclusions based on a rigorous, analytical and critical assessment of arguments and opinions.
<b>8</b>	Critically analyse and evaluate the requirements for network security within a range of network and business requirements.
	<b>Practical &amp; Professional Skills</b>
<b>9</b>	Plan, design and employ techniques and technologies used by network security engineers and managers for computer and information management.
<b>10</b>	Demonstrate practical skills acquired through work carried out in laboratories and workshops in individual and/or group project work in accordance with ethical standards, professional codes of conduct and set guidelines.
<b>11</b>	Implement applications using appropriate methodologies, tools and techniques.
<b>12</b>	Work independently or within a group, with limited need for supervision, in a professional and/or industrial context.
	<b>Key Transferable Skills</b>
<b>13</b>	Monitor, record, analyse and interpret data to effectively communicate to diverse audiences.
<b>14</b>	Manage time, prioritise activities and work to time-scales.
<b>15</b>	Demonstrate effective information retrieval skills from a range of sources and be able to cite and reference such sources.
<b>16</b>	Reflect on progress and plan for personal and career development.

<b>12</b>	<b>Course Requirements</b>
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<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" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Module Code</th> <th style="width: 60%;">Module Name</th> <th style="width: 20%;">Credit Value</th> </tr> </thead> <tbody> <tr><td>CMP4285</td><td>Innovation Project</td><td>20</td></tr> <tr><td>CMP4267</td><td>Computer Systems</td><td>20</td></tr> <tr><td>CMP4265</td><td>Applied Operating Systems</td><td>20</td></tr> <tr><td>CMP4266</td><td>Computer Programming</td><td>20</td></tr> <tr><td>CMP4268</td><td>Mathematics for Computing</td><td>20</td></tr> <tr><td>CMP4269</td><td>Network Fundamentals</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" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Module Code</th> <th style="width: 60%;">Module Name</th> <th style="width: 20%;">Credit Value</th> </tr> </thead> <tbody> <tr><td>CMP5322</td><td>Enterprise Practice Project</td><td>20</td></tr> <tr><td>CMP5357</td><td>Cyber Security Operations</td><td>20</td></tr> <tr><td>CMP5350</td><td>Server Systems</td><td>20</td></tr> <tr><td>CMP5321</td><td>Programming for Network Engineers</td><td>20</td></tr> <tr><td>CMP5320</td><td>Networking Technologies</td><td>20</td></tr> <tr><td>CMP5337</td><td>Enterprise Network Systems</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 Networks and Security with Professional Placement Year or Integrated Masters of Science Computer Networks and Security 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" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Module Code</th> <th style="width: 60%;">Module Name</th> <th style="width: 20%;">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	CMP4285	Innovation Project	20	CMP4267	Computer Systems	20	CMP4265	Applied Operating Systems	20	CMP4266	Computer Programming	20	CMP4268	Mathematics for Computing	20	CMP4269	Network Fundamentals	20	Module Code	Module Name	Credit Value	CMP5322	Enterprise Practice Project	20	CMP5357	Cyber Security Operations	20	CMP5350	Server Systems	20	CMP5321	Programming for Network Engineers	20	CMP5320	Networking Technologies	20	CMP5337	Enterprise Network Systems	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
CMP6176	Ethical Hacking	20
CMP6178	Wireless Networking Technologies	20
CMP6220	Advanced Firewall Systems	20
CMP6183	Network Security	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
CMP7207	Group Integrated Master's Project	40
CMP7154	Information Security	20
CMP7221	Network Automation and Orchestration	20
CMP7151	Advanced Networking Systems and Security	20
CMP7155	Network Management	20

**12b Structure Diagram**

<b>Level 7 – Year 5</b>			
Semester 2	Integrated Masters Project [40 credits]	Information Security [20 Credits]	Network Automation and Orchestration [20 Credits]
Semester 1		Advanced Network Systems and Security [20 Credits]	Network Management [20 Credits]
<b>Level 6 – Year 4</b>			
Semester 2	Individual Honours Project [40 credits]	Network Security [20 Credits]	Ethical Hacking [20 Credits]
Semester 1		Advanced Firewall Systems [20 Credits]	Wireless Networking Technologies [20 Credits]
<b>Professional Placement – Year 3 (optional)</b>			
<b>Professional Placement Module (120 Credits)</b>			
<b>Level 5 – Year 2</b>			
Semester 2	Enterprise Practice Project * [20 Credits]	Cyber Security Operations [20 Credits]	Enterprise Network Systems [20 Credits]
Semester 1	Server Systems [20 Credits]	Programming for Network Engineers [20 Credits]	Networking Technologies [20 Credits]
<b>Level 4 – Year 1</b>			
Semester 2	Innovation Project [20 Credits]	Applied Operating Systems [20 Credits]	Network Fundamentals [20 Credits]
Semester 1	Computer Programming [20 Credits]	Maths for Computing [20 Credits]	Computer Systems [20 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	443
Private Study	453
<b>Total Hours</b>	1200

##### Balance of Assessment

Assessment Mode	Percentage
Coursework	75%
Exam	0%
In-Person	25%

#### Level 5

##### Workload

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

Activity	Number of Hours
Scheduled Learning	288
Directed Learning	438
Private Study	474
<b>Total Hours</b>	1200

##### Balance of Assessment

Assessment Mode	Percentage
Coursework	65%
Exam	18%
In-Person	17%

**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	374
Private Study	624
<b>Total Hours</b>	<b>1200</b>

**Balance of Assessment**

<b>Assessment Mode</b>	<b>Percentage</b>
Coursework	58%
Exam	32%
In-Person	10%

**Level 7**
**Workload**
**18% time spent in timetabled teaching and learning activity**

<b>Activity</b>	<b>Number of Hours</b>
Scheduled Learning	210
Directed Learning	372
Private Study	618
<b>Total Hours</b>	<b>1200</b>

**Balance of Assessment**

<b>Assessment Mode</b>	<b>Percentage</b>
Coursework	46%
Exam	40%
In-Person	14%