

PROGRAMME SPECIFICATION

Name, title and level of final qualification(s)	BSc Computer Science for Cybersecurity (Level 6)
Name and title of any exit qualification(s)	Diploma Higher Education Certificate of Higher Education Certificate of Continuing Education
Is the programme offered with a Foundation Year?	Yes
Awarding Body	University of London
Teaching Institution(s)	Birkbeck, University of London
Home Department/other teaching departments	School of Computing and Mathematical Sciences
Location of delivery	Central London
Language of delivery and assessment	English
Mode of study, length of study and normal start month	Full-time (3 years) Part-time (4 years) Full-time with Foundation Year (4 years) October
Professional, statutory or regulatory body	N/A
<u>QAA subject benchmark group(s)</u> <u>Higher Education Credit Framework for England</u>	Computing
UCAS code	I111; I112 (with FY)
Birkbeck Course Code	UUBSCSCB_C (3 years full-time) UBSCSCYB_C (4 years part-time) UUBFCSCB_C (4-years full-time with FY)
HECoS Code	100366 100376
Start date of programme	Autumn 2026
Date of programme approval	TBC
Date of last programme amendment approval	N/A
Valid for academic entry year	2026-27
Date of last revision to document	12/02/2025

Admissions requirements

BSc Computer Science for Cybersecurity

UCAS tariff: 112 points. The UCAS tariff score is applicable to students who have recently studied a qualification that has a UCAS tariff equivalence.

GCSES: Applicants are expected to have GCSE grade C or 4, or equivalent, in English and mathematics.

BSc Computer Science for Cybersecurity with Foundation Year

UCAS tariff: 48 points. The UCAS tariff score is applicable to students who have recently studied a qualification that has a UCAS tariff equivalence.

GCSE: Applicants are expected to have GCSE grade C or 4, or equivalent, in English and mathematics.

We welcome applicants without traditional entry qualifications as we base decisions on our own assessment of qualifications, knowledge and previous work experience. We may waive formal entry requirements based on judgement of academic potential.

Applicants without traditional entry qualification who wish to enter year 1 are required to sit an admissions test that is composed of two elements: (i) a mathematics test and (ii) a test of English comprehension. A pass in the mathematics test ensures that the applicant has the required quantitative skill base to progress through the programme. A pass in the English comprehension test indicates that the applicant is competent to begin the programme.

Course aims

BSc Computer Science for Cybersecurity

The BSc Computer Science for Cybersecurity aims to develop knowledge, technical skills and self-directed learning skills in computer science as relevant for a career in cybersecurity. Final year students carry out a considerable real-world computing project.

Modern computer science and information systems skills often become obsolete as new technology is developed. Therefore, the programme strikes a balance between learning current skills, which are important in the marketplace, and emphasising the underlying theories, which last longer and which provide a sound basis for developing new skills, techniques and technologies, and even new theories. The social and organisational impacts of information technology are also included.

Additionally, the programme is designed with reference to industry-standard practices and frameworks by incorporating selected relevant elements of the ISC2 CISSP Certification Exam and through the integration of materials from the Cisco Cyber Threat Management programme (the School of Computing and Mathematical Sciences is a member of the Cisco Academy). Moreover, the curriculum is developed with reference to the body of cybersecurity knowledge, release CyBOK 1.1, as established by the National Cyber Security Centre. Accreditation by the NCSC will be sought in the 2025 application cycle.

BSc Computer Science for Cybersecurity with Foundation Year

The BSc Computer Science for Cybersecurity with Foundation Year is designed for applicants who do not meet the entry requirements for direct entry to an undergraduate degree, who do

not feel they are quite ready for an undergraduate degree, or who are returning to study after a significant break and need extra help and support with their studies.

The foundation year element of the Programme provides the core knowledge and skills required for the successful study of Computing at undergraduate level. It includes modules covering introductory, subject-specific areas such as mathematics, logic and programming. It also includes more transferable skills modules, covering approaches to study, academic writing and working in teams. Successful completion of the foundation year enables students to progress to the BSc element of the Programme.

The BSc element of the Programme aims to develop the knowledge, technical skills, and self-directed learning skills required by employers in the fast-evolving world of computer science and cybersecurity. The primary focus is on developing strong technical skills. Emphasis is also placed on exploring the social, ethical and legal aspects of Computing. At the end of the BSc element of the Programme, students carry out a considerable real-world project.

Course structure

The BSc programme consists of modules. The syllabus for each module consists of a closely related set of topics, as indicated by the title of the module. Each module has a level, which indicates the academic level of the module, and a value in credits.

Most modules are taught over one term and have a value of 15 or 30 credits. Some modules may be taught over two terms and have a value of 30 credits. The final year project has a value of 60 credits. In order to graduate, it is necessary to accumulate 360 credits. Under normal circumstances, the maximum number of credits that can be accumulated in an academic year is 90 credits for the four-year part-time programme and 120 credits for the three- or 4-year full-time programme.

Four-year part-time programme: all of the modules in Years 1, 2 and 4 are compulsory. In Year 3 students take 60 credits of compulsory modules, and a 30 credit option. Modules in Year 1 are Level 4. Modules in Year 2 are Level 4 or 5, while modules in Years 3 and 4 are either Level 5 or Level 6. In order to graduate, it is necessary to accumulate at least 120 credits at Level 6. An optional module can be chosen only if its prerequisites are satisfied.

Three-year full-time programme: all of the modules in Years 1 and 2 are compulsory. There is a 30-credit option in Year 3, students take 90 credits of compulsory modules and a 30-credit option. Modules in Year 1 are Level 4. Modules in Years 2 are Level 5 and those in Year 3 are Level 6. In order to graduate, it is necessary to accumulate at least 120 credits at Level 6. An optional module can be taken only if its prerequisites are satisfied.

BSc Computer Science for Cybersecurity with Foundation Year:

The BSc Computer Science for Cybersecurity with Foundation Year provides a perfect route to study for those who do not meet the entry requirements for direct entry to an undergraduate computer science degree, who do not feel they are quite ready for an undergraduate degree, or who are returning to study after a significant break and need extra help and support.

The foundation year helps build confidence and provide skills to study successfully at undergraduate level. It also provides students with a strong foundation in the main subject area of computer science. Upon successful completion of the Foundation Year, students automatically progress to the three-year, full-time, evening-study BSc. The BSc focuses on key software development skills, including algorithms and data structures, systems analysis and

design, programming, software testing, information security, network security, and regulatory and AI aspects of cybersecurity.

Level	Module Code	Module Title	Credit	Comp Core/ Option	Likely teaching term(s)
Full-time - 3 years or 4 years with Foundation Year					
Foundation Year					
3	CASE002S3	Fundamentals of Study	30	Compulsory	1
3	BUCI075H3	Teamwork	15	Compulsory	1
3	SC10001S3	Foundation Year Mathematics	30	Compulsory	2
3	BUCI085H3	Programming Logic	15	Compulsory	2
3	SC10002H3	Foundation Year Programming	15	Compulsory	3
3	BUCI076H3	Computing Foundation Year Project	15	Compulsory	3
Year 1					
4	COIY040H4	Mathematics for Computing	15	Compulsory	1
4	BUCI006H4	Problem Solving for Programming	15	Compulsory	1
4	SC10003H4	Professional Issues in Computing	15	Compulsory	1
4	COIY016H4	Systems Analysis and Design	15	Compulsory	2
4	BUCI007H4	Introduction to Programming	15	Compulsory	2
4	BUCI008H4	Introduction to Computer Systems	15	Compulsory	2
4	COIY068H4	Introduction to Database Technology	15	Compulsory	3
4	SC10007H4	Object Oriented Programming	15	Compulsory	3
Year 2					
5	SC10023H5	Software Systems Development	15	Compulsory	1
5	SC10004H5	Database Management	15	Compulsory	1
5	BUCI030H5	Data Structures and Algorithms	15	Compulsory	1
5	BUCI066H5	Software Engineering	15	Compulsory	2
5	BUCI055H5	Computer Organisation and System Software	15	Compulsory	2
5	BUCI036H5	Computer Networking	15	Compulsory	2
5	SC10008H5	Information Security	15	Compulsory	3
5	SC10024H5	Secure Software Development	15	Compulsory	3
Year 3					
6	SC10028D6	BSc Cybersecurity Project	60	Compulsory	1-3
6	SC10025S6	Cybersecurity Governance and AI	30	Compulsory	1
6		Optional modules	30	Optional	1-3
Part-time – 4 years					
Year 1					
4	COIY040H4	Mathematics for Computing	15	Compulsory	1
4	BUCI006H4	Problem Solving for Programming	15	Compulsory	1
4	COIY016H4	Systems Analysis and Design	15	Compulsory	2
4	BUCI007H4	Introduction to Programming	15	Compulsory	2
4	COIY068H4	Introduction to Database Technology	15	Compulsory	3
4	SC10007H4	Object Oriented Programming	15	Compulsory	3

Year 2					
5	SC10023H5	Software Systems Development	15	Compulsory	1
4	SC10003H4	Professional Issues in Computing	15	Compulsory	1
4	BUCI008H4	Introduction to Computer Systems	15	Compulsory	2
5	BUCI036H5	Computer Networking	15	Compulsory	2
5	SC10024H5	Secure Software Development	15	Compulsory	3
5	SC10008H5	Information Security	15	Compulsory	3
Year 3					
5	BUCI030H5	Data Structures and Algorithms	15	Compulsory	1
5	SC10004H5	Database Management	15	Compulsory	1
5	BUCI055H5	Computer Organisation and System Software	15	Compulsory	2
5	BUCI066H5	Software Engineering	15	Compulsory	2
6		Optional Modules (see below)	30	Optional	2-3
Year 4					
6	SC10028D6	BSc Cybersecurity Project	60	Compulsory	1-3
6	SC10025S6	Cybersecurity Governance and AI	30	Compulsory	1
Options					
6	SC10026S6	Cyber Threat Management and Response	30	Optional	2
6	SC10027S6	Real-World Cryptography	30	Optional	3

Core: Module must be taken and passed by student

Compulsory: Module must be taken but can be considered for compensated credit (see CAS regulations paragraph 24)

Option: Student can choose to take this module

How you will learn

Foundation Year:

Instruction will be predominantly via lectures. Lectures will be augmented with group and individual tutorial work and practical lab work. Instructional material will also be made available online. Assessment will be through a mix of exam, coursework (test, essay, practical task, presentation) and project work.

BSc Degree Lecturing:

Lecturing is a major method for knowledge transfer. However, most modules mix other activities with lectures on any particular evening. Mature students can be highly interactive and staff are encouraged to obtain student feedback about areas that may need deeper attention.

Group Tutorials:

Several modules mix lectures with work in small groups, in which higher levels of student interaction are possible. This works particularly well with complicated topics.

How we will assess you

The course will use a variety of assessment methods. Assessment is used to enhance your learning rather than simply to test it. We use a variety of assessment methods. For most of the modules associated with this course, your assessment will be through the following types of assessment.

Written Exercises (Essays)

Feedback from written essays encourages students to develop appropriate formal and precise writing habits. It leads students to express themselves in a structured manner in writing.

Laboratory Based Exercises

Computing laboratory exercises are used to give the students hands-on experience in developing information systems artifacts such as systems analysis and design models and computer programs. Some of these exercises are assessed.

Group Exercises

Group exercises are used in certain modules to improve students' social interactions and their ability to work in teams.

Presentations

Presentations are a powerful learning experience. Students giving presentations develop their powers of information discovery, equip themselves with a deep understanding of the topics to be presented and transfer some of their knowledge to their peers who at the same time acquire skills in verbal academic discourse.

Final Year Project

Projects require the students to take an integrative approach to a major piece of work. They are required to set a boundary for the work, formulate their aims and objectives, gather information, analyse information, reflect on their work and produce a substantial report.

Learning outcomes (what you can expect to achieve)

'Learning outcomes' indicate what you should be able to know or do at the end of your course. Providing them helps you to understand what your teachers will expect and also the learning requirements upon which you will be assessed.

At the end of this course, you should be able to:

Foundation year specific:

1. demonstrate subject specific skills and knowledge required to study computer science at undergraduate level.
2. develop academic and study skills and knowledge required to study computer science at undergraduate level.

BSc Programme as a whole:

Subject Specific

1. demonstrate and utilise a range of computer science methods and techniques
2. analyse various forms and levels of information
3. propose structured techniques for information systems analysis and design
4. evaluate number systems, computer architectures, data structures, algorithms, and software engineering fundamentals
5. apply professional software development methodologies
6. appraise current social and organisational issues surrounding the deployment of information technology.
7. analyse database concepts and in particular relational database technologies
8. design complete systems in the context of information technology
9. use knowledge of computer networking

10. utilise knowledge of information security
11. analyse and evaluate cybersecurity threats and propose appropriate responses
12. appraise cryptographic constructs and demonstrate their effective use

Intellectual

1. critically evaluate arguments and evidence
2. contrast, create and present theoretical and empirical arguments
3. develop and present substantial reports analysing a use case

Practical

1. formulate informed decisions
2. develop abstract models within which problems can be solved
3. plan, implement and test software solutions to real-world problems
4. design and develop software implementing a range of different algorithms
5. design, test and evaluate the architecture of software systems
6. discuss and explain software options and present findings in a substantial report
7. identify and appraise documentary information relating to systems and algorithms
8. utilise coherent arguments in support of a specific software solution

Personal and Social

1. analyse, appraise and present work under pressure
2. communicate effectively using appropriate interpersonal skills
3. collaborate with others as a member of a team
4. plan and manage personal time and learning development

Careers and further study

You will find [subject] graduates in the following kinds of roles: programmer, software engineer, database administrator, systems administrator, testing and software quality engineer.

Birkbeck offers a range of careers support to its students. You can find out more on the careers pages of our website: <https://www.bbk.ac.uk/student-services/careers-service>.

Academic regulations and course management

Birkbeck's academic regulations are contained in its Common Award Scheme Regulations and Policies published by year of application on the Birkbeck website.

You will have access to a course handbook on Moodle and this will outline how your course is managed, including who to contact if you have any questions about your module or course.

Support for your study

Your learning at Birkbeck is supported by your teaching team and other resources and people in the College there to help you with your study. Birkbeck uses a virtual learning environment called Moodle and each course has a dedicated Moodle page and there are further Moodle sites for each of your modules. This will include your course handbook.

Birkbeck will introduce you to the Library and IT support, how to access materials online, including using Moodle, and provide you with an orientation which includes an online Moodle module to guide you through all of the support available. You will also be allocated a personal

tutor and provided with information about learning support offered within your School and by the College.

Please check our website for more information about student support services. This covers the whole of your time as a student with us including learning support and support for your wellbeing.

Quality and standards at Birkbeck

Birkbeck's courses are subject to our quality assurance procedures. This means that new courses must follow our design principles and meet the requirements of our academic regulations. Each new course or module is subject to a course approval process where the proposal is scrutinised by subject specialists, quality professionals and external representatives to ensure that it will offer an excellent student experience and meet the expectation of regulatory and other professional bodies.

You will be invited to participate in an online survey for each module you take. We take these surveys seriously and they are considered by the course team to develop both modules and the overall courses. Please take the time to complete any surveys you are sent as a student.

We conduct an annual process of reviewing our portfolio of courses which analyses student achievement, equality data and includes an action plan for each department to identify ongoing enhancements to our education, including changes made as a result of student feedback.

Our periodic review process is a regular check (usually every four years) on the courses by department with a specialist team including students.

Each course will have an external examiner associated with it who produces an annual report and any recommendations. Students can read the most recent external examiner reports on the course Moodle pages. Our courses are all subject to Birkbeck Baseline Standards for our Moodle module information. This supports the accessibility of our education including expectations of what information is provided online for students.

The information in this programme specification has been approved by the College's Academic Board and every effort has been made to ensure the accuracy of the information it contains.

Programme specifications are reviewed periodically. If any changes are made to courses, including core and/or compulsory modules, the relevant department is required to provide a revised programme specification. Students will be notified of any changes via Moodle.

Further information about specifications and an archive of programme specifications for the College's courses is [available online](#).

Copyright, Birkbeck, University of London 2022 ©