

Computer Science for Cyber Security BSc (Hons) with integrated foundation year Programme Specification

Academic Year:	2026/2027
Degree Awarding Body:	The University of Bradford
Main Location:	City Campus
Subject Benchmarks:	Computing (Quality Assurance Agency 2022)
Qualifications Frameworks:	HE Qualifications of UK Degree Awarding Bodies (FHEQ: QAA 2024) and Regulated Qualifications Framework (RQF: Ofqual 2015)
Target Degree Award:	Bachelor of Science with Honours (BSc Hons) [FHEQ Level 6]
Intermediate/exit Awards:	BSc (Ordinary) [FHEQ Level 6] Diploma of Higher Education (DipHE) [FHEQ Level 5] Certificate of Higher Education (CertHE) [FHEQ Level 4] Foundation Certificate (FdC) in Engineering [RQF Level 3]
Programme Admission:	UK/home students (all routes) and international students (excl. foundations)
Programme Start Date:	September
Modes of Study:	Ucas code I190: 3 years full time Partner entry only: 3 years full-time (international year 1) Ucas code I191: 4 years full time with sandwich placement/year abroad Ucas code I192: 4 years full time with integrated foundation year Ucas code I193: 5 years full time with foundation and sandwich year

The BSc (Hons) Computer Science for Cyber Security is accredited by [BCS - The Chartered Institute for IT](#) for full Chartered IT Professional (CITP) registration, recognised internationally under the Seoul Accord. This recognition enhances the credibility and quality assurance of academic programmes, allowing students to have their qualifications recognised globally. It helps students and graduates in their pursuit of international education, employment, and professional mobility. Visit the [BCS website](#) to find out more about professional registration in IT.

Minor Modification Schedule

1. July 2025: Annual Changes for the 2025 academic year, including changes to academic regulation and a computing pathway for Foundation level study.
2. July 2026: Annual changes for 2026 entry including revised admissions and modes of study.

Programme overview

Computers play such a fundamental part of our everyday life that it is difficult to imagine what we would do without them. A lot of the information processed by computers is private and it is crucial that it is protected. Cyber Security is necessary to prevent unauthorised access to the information that we store on our devices (computers, smartphones, tablets, etc.) and online and defend ourselves against an ever-evolving host of cyber attacks to, for example, online banking, social networks, businesses and critical infrastructure.

This Computer Science programme has a specific focus on the theoretical foundations of computation and computer technology and how Computer Science is applied to Cyber Security. It incorporates ideas from many other disciplines, including mathematics, engineering and management, and has a close affinity with digital communications through the Internet, World Wide Web, and wireless communication technologies.

The BSc (Hons) Computer Science for Cyber Security is offered by the School of Computing and Engineering as part of the Faculty of Management, Sciences and Engineering at the University of Bradford, which includes a renowned tradition of undergraduate and postgraduate programmes concerned with the understanding, design, and exploitation of computation and computer technology. The School places great emphasis on both teaching and research, and there are opportunities for students to join one of our research teams, and progress on to postgraduate taught programmes or research degrees on completion of their first degree. The [British Computer Society \(BCS\) - the chartered institute for IT](#) accredits undergraduate and postgraduate programmes offered by the School. BCS accreditation of our programmes also means that successful honours graduates are exempted from further examinations for BCS membership. Our students are also eligible for free student membership of the [Chartered Institute of Information Security \(CIISec\)](#), thanks to our partnership with CIISec.

Exposure to industry is deeply embedded within this programme in a number of ways. The programme is industry informed with our Industry Advisory Board (IAB), a membership comprised of industry representatives from both regional and national companies, reviewing our provision of the programme and advising on our programme enhancements. The launch of the Computing Enterprise Centre offers to our students the opportunity to develop industry-based projects in the second and final years and provides also industry-sponsored competitive internships. We leverage industry contacts to embed cutting edge projects within modules such as Technical and Professional Skills in year 1, Enterprise-Pro in year 2 and Final Year Project in year 3, allowing students to work on topics highly relevant to their future careers throughout their course. Our Final Year Project showcase allows students to interact with both our Industry Advisory Board members and a wider audience of industry contacts to demonstrate their work and to receive feedback and ideas from professionals within the discipline. We support industry placements and collaborate with local, national and international organisations offering such job offers through our industry contacts and extended network of successful graduates.

Student societies with links to professional bodies afford further opportunities for our students to engage with industry, such as Pi Soc as the first ever BCS Student Chapter, and our ACM student chapter. These societies are encouraged and supported by the School to participate in industry and research led activities such as programming competitions, data dives and extra-curricular collaborations and visits. In addition, our placement scheme gives students the opportunity to work in real companies for up to one year as part of their programme, further enhancing their discipline specific and transferable skills.

Upon completing this programme, students will not only become experts on existing Cyber Security solutions, but they will also be able to develop new ones. This programme will give students the toolkit required to flexibly adjust as new cyber threats emerge.

Programme Aims

The aim of the programme is to provide students with a sound grounding in the fundamentals of computer science, Cyber Security, software development (programming) and the tools and applications that modern computer scientist's use. This aim will be achieved by:

- Providing students with a core of fundamental modules, in stages 1 and 2, that are essential to all computer scientists, plus a range of options they will then specialise in Cyber Security.
- Providing the support in the form of lectures, labs and tutorials that will enable students to develop their personal portfolio of skills and knowledge, in line with the Department of Computing's commitment to providing a very high standard of academic delivery and environment, supported by up-to-date computing facilities, hardware devices and software tools.
- Developing discipline and personal transferable skills so that during studies and on graduation they may move directly into responsible positions in industry or commerce (such as placement, graduate schemes respectively) and as business innovators, or may pursue further programmes of study.
- Enabling development of problem analysis and computational solutions by application of fundamental principles and concepts of computer science, such as abstraction, data representation, logic, algorithms and digital technologies.
- Promoting educational opportunities and interest in academic development for ethnic minorities, women, mature and alternatively qualified students, as well as for school-leavers and traditionally qualified students.

Programme Learning Outcomes

Foundation stage students eligible to progress onto the degree programme will be able to:

- 0.1** Demonstrate knowledge and understanding of mathematics, computer hardware, operating systems and AI to an appropriate standard to allow students to engage with an accredited Computer Science programme.
- 0.2.** Develop basic knowledge and skills in coding, data handling, computer vision and cyber security to support problem-solving and computational thinking required for undertaking a computer science programme.
- 0.3.** Demonstrate knowledge and skills in data management and presentation, IT and communication skills, teamwork, and personal management.

Students eligible for the FHEQ Level 4 Certificate award will be able to:

- 1.** Describe the history and development of computer science and outline important concepts and topics within the field.
- 2.** Outline the professional, ethical, security, industrial and research dimensions of the discipline of computer science.

3. Demonstrate knowledge of fundamental concepts of computer science, and the environment in which they operate; basics of software construction and the tools required to support it, develop skill in constructing complex software solutions.
4. State and explain relevant models, principles and practices applicable to the study of computers, computer architecture and systems.
5. Demonstrate knowledge of a range of underlying theories, logical and mathematical foundations relevant to computer science.
6. Work effectively as individuals and in groups.
7. Collect, manage and present information, ideas and concepts, interpret data using suitable techniques, and communicate efficiently with a range of audiences.

Additionally, to be eligible for the award of Diploma of Higher Education at FHEQ level 5, students will be able to:

8. Apply methods, methodology, knowledge, skills and standards to build and test complex software systems through teamwork.
9. Apply knowledge of investigative and research principles to demonstrate an understanding of how to develop computing designs, databases, and processes.
10. Develop computational thinking for problem solving, algorithm design and assessing efficiency of different implementations.
11. Demonstrate the use of practical computer science skills in designing, developing and monitoring communication networks.
12. Demonstrate fundamental understanding of various applications of AI techniques in solving computational problems.
13. Apply knowledge of the fundamentals of security management and the system tools required to manage vulnerabilities.
14. Communicate effectively with industry and other computing professionals and demonstrate personal and technical skills.

Additionally, to be eligible for the Degree award of Bachelor at FHEQ level 6, students will be able to:

15. Demonstrate a systematic understanding of key aspects of their field of study, including acquisition of coherent and detailed knowledge informed by aspects of Computer Science for Cyber Security.
16. Deploy accurately established techniques of analysis and enquiry within Computer Science for Cyber Security.

17. Show conceptual understanding that enables students to devise and sustain arguments, and/or to solve problems, using ideas and techniques, and to describe and comment upon particular aspects of current research, or equivalent scholarship, or practice in Computer Science for Cyber Security.
18. Develop an ability to make critical use of relevant literature to discuss aspects of current research in the discipline, to make use of primary sources, to manage and communicate their own learning, and to recognise the uncertainty, ambiguity and limits of knowledge.
19. Develop a systematic understanding of the fundamental concepts and theories of computer science including detailed knowledge of hardware, computer architecture, information, and communication technologies.
20. Understand how to analyse problems and develop solutions using leading edge ideas and techniques.
21. Exercise initiative in information management, interpretation and presentation of Cyber Security tools, products and solutions.
22. Understand and appreciate the nature of cybercrime and how to protect against it at a management level.
23. Demonstrate an understanding of the use of appropriate cryptographic primitives and protocols for securing network applications.
24. Apply and analyse issues of security from a number of different disciplinary perspectives.
25. Apply the concepts and principles in key computing subjects, including data and information security and forensics, information systems, communication networks.
26. Demonstrate professional interest and expertise for a variety of careers such as cyber security specialist, software security architect, software developer, system administrator, IT project manager, IT consultant or computing researcher that match both learners and employers expectations.

Learning and Teaching Strategy

Our Learning and Teaching Strategy is to provide a nurturing and supportive environment that enables students to become independent learners and problem solvers. For example, students receive formative feedback during lab sessions in order to identify areas for improvement. A personal academic tutor is assigned to each student to provide both academic and pastoral support. Peer assisted learning supports the student experience by utilising and enabling peer interaction and support.

The Integrated Foundation Year, Stage 0, introduces students to the principles of computing holistically, introducing foundational concepts, frameworks and techniques common to other Engineering and Computing professions before contextualising them for cyber security. The year features practical elements where students spend time in laboratories to conduct experiments on engineering applications. Students will be able to develop awareness of the breadth of

opportunities and challenges posed by software engineering and the exciting possibilities for their career development. The teaching of Mathematics aims to provide an academic outcome comparable to A-level.

Students on stages 1-3 will experience a wide range of teaching and learning environments and a consistent balance between direct academic delivery, and individual and group study. Concepts, principles and theories are generally explored in formal lectures, practiced in associated tutorials and seminars, and demonstrated and experimented in laboratory classes. Practical skills are developed in laboratory sessions. The programme includes a number of innovative and active learning methods. For example, Team Based Learning (TBL) strategies are integrated within a number of modules. In addition, we endeavour to use team teaching methods where lecturing staff are able to contribute their highly specialised research and knowledge into the curriculum.

Throughout the programme, we make use of case studies so that students can apply their theoretical understanding to real-world issues. In this way, abstract concepts are brought to life through practical activities.

We use the Canvas Instructure virtual learning environment to share course materials and reading lists, communicate with students, track student participation, facilitate discussions, support formative and summative assessments and provide feedback. Students can use Canvas independently to revise materials, ask questions and interact with lecturers and other students using discussions, practise and assess their understanding using quizzes, or for finding resources for further reading.

In addition to the standard technology enhanced learning approaches, we embed technologies to deliver key concepts in an interactive environment that strongly links theory with practical skills. For example: in programming lectures, a remote desktop application allows lecturers to demonstrate coding in an environment identical to that in our cutting-edge labs; our stage 2 Enterprise-Pro module requires and supports students to develop their projects using an industry standard tool for collaborative team-based software development. This allows them to develop industry standard skills based on real working practice.

Professional and personal skills are developed through the Technical and Professional Skills module which involves communications skills, library skills, group work and presentations. The Enterprise-Pro group project module develops an appreciation of how to manage group dynamics whilst working on a substantial computing and software engineering exercise. Honours students undertake a major individual project in their final year, drawing together the knowledge and experience gained throughout the programme. The project provides the opportunity for students to demonstrate the ability to solve problems using current ideas and current, cutting-edge techniques that are at the forefront of computing and applied multidisciplinary disciplines.

Research active staff are involved in curriculum development based on their research activities, exposing students to the very latest and future developments within their field of expertise. We integrate knowledge and experience from Industrial partners through both our Industry Advisory Board and research projects through case studies, lab-based activities and invited talks, ensuring that research findings are at the heart of our curriculum.

Equality, diversity, inclusion and ethics are embedded in our programme's learning and teaching activities. We celebrate differences and ensure that everyone has equal opportunities to achieve their desired outcomes. Students will be encouraged to explore a diverse range of digital technologies and theories and engage constructively with businesses and communities to enrich their understanding of the impact of Cyber Security on everyone's everyday lives and embrace the values of equality, diversity and inclusion in their development of Cyber Security solutions. This approach will equip students with the wider perspective of the relevance of Computer Science for Cyber Security for the betterment of businesses and society.

Assessment Strategy

Methods of assessment are similarly varied, and progress will be assessed using a mix of formal examinations, presentations and seminar papers, reports, laboratory tests, essays, coursework assignments, and projects. The appropriate method is chosen so that students may demonstrate the particular learning outcomes of each module.

All of our staff have achieved, or are working towards, Fellowship of the Higher Education Academy. As part of our commitment to Excellence in Learning and Teaching, we conduct research into innovative and effective teaching methods. For example, assessment for our Final Year Project module was enhanced by incorporating regular formative and summative feedback opportunities to enhance the final outcomes, based on a research project conducted by staff within the School that culminated in a journal publication.

Curriculum Structure

The BSc (Hons) Computer Science for Cyber Security curriculum is organised into modular units, studied across the "Academic Year" of September to May or discretely in a single Semester. Students study 120 credits in total in each stage/year. The Cyber Security route is fully "core": all students on the degree course study modules together.

Students can join the programme in Stage 0 (foundation certificate) or Stage 1 (higher certificate) before continuing towards the degree award. The Admission Requirements section lists how entry to these stages is different. At the end of Stage 0, students who successfully complete the year will progress onto the BEng route's Stage 1.

In Stage 0, students will study 120 core credits at RQF Level 3:

Stage 0 Computer Science for Cyber Security Core Modules (RQF Level 3)

Code	Module Title	Credit	Period	Selection
ENG3500-B	Professional and Independent Learning for Engineering and Computing	20	Semester 1	Core
ENM3003-B	Foundation Mathematics	20	Semester 1	Core
COS3011-B	Computer Skills and Applications	20	Semester 1	Core
COS3009-B	Introduction to Coding	20	Semester 2	Core
COS3003-B	Introduction to Computing	20	Semester 2	Core
ENM3002-B	Introduction to Computer Visualisation	20	Semester 2	Core

Students at Stage 1 will study 120 core credits at FHEQ Level 4 as follows, depending on whether they are studying the UK/Home route or the International College International Year 1 (IY1) route.

Table 1: UK/Home Stage 1 Core Modules

Module Code and Title	Credit	Period
COS4014-B Mathematics for Computing	20	Semester 1
COS4016-B Fundamentals of Programming	20	Semester 1
COS4015-B Technical and Professional Skills	20	Semester 1
COS4001-B Computer Architecture and Systems Software	20	Semester 2
COS4017-B Software Design and Development	20	Semester 2
COS4018-B Internet Technologies	20	Semester 2

Table 2: IY1 Stage 1 Core Modules

Module Code and Title	Credit	Period
BIC4028-A Mathematics for Informatics	10	SEM1 or SEM2
BIC4025-B Fundamentals of Programming	20	NSYR
BIC4020-C Academic English and Skills	30	ACYR or NSYR
BIC4011-B Computer Systems	20	NSYR
BIC4012-B Software Engineering	20	NSYR
BIC4029-B Introduction to Web Development	20	NSYR or SEM3

All students then study the same Stage 2: At the end of Stage 2, students who successfully complete will progress onto Stage 3 or onto the elective placement year / study abroad year.

Stage 2 Computer Science for Cyber Security Core Modules (FHEQ Level 5)

Code	Module Title	Credit	Period	Selection
COS5028-B	Artificial Intelligence	20	Semester 1	Core
COS5021-B	Data Structures and Algorithms	20	Semester 1	Core
COS5020-B	Database Systems	20	Semester 1	Core
COS5025-B	Computer Communications and Networks	20	Semester 2	Core
COS5019-B	Enterprise-Pro	20	Semester 2	Core
COS5017-B	System Security Management	20	Semester 2	Core

Stage 3 Computer Science for Cyber Security Core Modules (FHEQ Level 6)

Code	Module Title	Credit	Period	Selection
COS6006-D	Final Year Project	40	Academic Year	Core
COS6008-B	Cyber Security	20	Semester 1	Core
COS7025-B	Mobile Application Development	20	Semester 1	Core
COS6007-B	Foundations of Cryptography	20	Semester 2	Core
COS6025-B	Principles of Security Technologies	20	Semester 2	Core

Placement and/or Study Abroad

This programme provides the option for students to undertake a work placement or period of study abroad between the 2nd and 3rd years of the BSc. Students wishing to take this option will be encouraged to register for the placement year programme. All School of Computing and Engineering students are encouraged to apply for Industrial Placements (Year in industry).

Timetabled Pre-Placement lectures and Timetabled 'drop-in' sessions will be scheduled to support students throughout the pre-placement process. All placement opportunities received are made available to students on the placement route via the VLE.

Any placement or period of study abroad is subject to approval by the Programme Team. Students who wish to participate in a placement or period of study abroad will be required to find, apply for and make the most of their chosen opportunity, and will be supported in doing so by the Programme Team, the Faculty Academic Lead for Placements, as well as the central University Careers and Employability Service.

Students on placement or study abroad will be registered for the optional FHEQ Level 5 modules **ENG5002-Z (Placement)** or **ENG5004-Z (Study Abroad)** and encouraged to complete a diary and portfolio presentation of their activity, as completing this module on return to the University will enable evidence to be added to the academic transcript or HEAR.

International students on a UKVI Student Visa should be aware that there may be financial restrictions that apply to your funding around resits or restudy for your course if you take a placement or study abroad year. You must get advice from the Student Life Service if this may affect you before applying for placement or study abroad.

Please note that **this programme is not eligible for Study Abroad Semester opportunities**, where you go abroad for part of a year to study different modules: this is a requirement from BCS. A full placement year in work, or full study abroad year where you study additional modules, does not impact the accreditation of your degree.

Further information about [internships and placements](#) and [study abroad opportunities](#) is published on the University's website.

Assessment, Continuation and Award Regulations

This programme follows the Assessment, Continuation and Award regulations published on the University's website for undergraduate courses ([Regulation 2](#)).

The target Honours Degree award confers eligibility on the degree holder to register with BCS as a Chartered IT Professional (CITP):

- BSc (Hons) Computer Science for Cyber Security: Complete 360 FHEQ Credits from the approved curriculum and achieve the award learning outcomes.

Admission Requirements

We are proud to be [one of the most inclusive universities in the UK](#). All our students have potential, and we believe that as many people as possible should have the chance to benefit from

higher education, no matter what their background or circumstances. We take the time to understand the background of our applicants, understand their journey to education, and make decisions based on an applicant's potential to thrive at university and beyond. In addition to satisfying the general admissions requirements of the University of Bradford, the minimum entry requirements for Computer Science for Cyber Security are as follows. All routes require GCSE Mathematics Grade 4/C (or equivalent) and:

- **Stage 0 (Foundation Year) entry:** 72 Ucas tariff points with no subject specific requirements, plus GCSE English at grade D/grade 3 or equivalent qualification in English. Stage 0 entry is only open to UK and home students. International students may join Computer Science for Cyber Security at Bradford through our partnership [University of Bradford International College](#) (UBIC) to the International Foundation Year, International Year Zero or International Year One incorporated degree pathways if they do not meet the Stage 1 entry requirements.
- **Stage 1 entry:** 112 Ucas points with no subject specific requirements. For all students whose first language is not English, the standard undergraduate [English language requirements for the University](#) apply as listed on our website. International students are welcome to apply for Stage 1 entry and should [check the entry requirements page for their country on our website](#) details of equivalent qualifications.
- Check the University of Bradford course pages for example Stage 0 and Stage 1 entry profiles in qualifications such as A-Levels, T-Levels, BTEC, Access to HE and International Baccalaureate. Links to course pages are provided at the end of this document.
- **Advanced entry:** If you are currently studying at another university and would like to transfer to the University of Bradford, this course accepts students into Stage 2 or Stage 3. Applications for advanced entry will be considered on a case-by-case basis and must include an official transcript (not a screenshot of a portal), all module descriptors, and relevant qualifications. Module descriptors must include learning outcomes. Applications must be submitted through Ucas and the required documents emailed along with your Ucas Personal ID no later than 31 August prior to the course starting in September. Relevant documents should be emailed to admissions@bradford.ac.uk.

On completion of a Ucas form students will be invited to the Faculty for an Open Day where they will have the opportunity to meet staff, view the facilities and discuss “the Bradford experience” with current students. Students will be made aware of the range of computing programmes available within the Faculty of Management, Sciences and Engineering.

We are committed to raising aspirations and widening access to higher education, regardless of your background. The [University of Bradford Progression Scheme](#) welcomes applicants from a number of groups including adult learners who are 21+ on the first day of term, British armed forces families, carers and care experienced learners, estranged or orphaned learners, refugees and asylum seekers, and Romani or Traveller family members.

Applications are welcome from students with non-traditional qualifications, and/or significant personal/professional experience. If you are an adult returning to study (aged 21 and over when you apply), you will be eligible for admission with level 2 qualifications (GCSE or equivalents). You will need to provide a written statement and will be interviewed as part of the process.

If applicants have prior certificated learning or professional experience which may be equivalent to parts of this programme, the University of Bradford has procedures to evaluate and recognise this learning to provide applicants with exemptions from specified modules or parts of the programme. Find more information about [recognition of prior learning decisions](#) on the University website.

People thinking of studying with the University of Bradford don't need to wait for the start of the year to contact our Disability Service. The University can arrange for anyone to talk to this team about what support is on offer at Bradford including an invitation to our Get Set Day. To contact the Disability Service please complete the [request support form](#).

Information in this document is for the contemporary recruitment cycle and was accurate at time of publication. The current tariff and accepted qualifications for entry onto the programme is published at the online University of Bradford course pages:

bradford.ac.uk/courses/ug/computer-science-cyber-security-with-integrated-foundation/
bradford.ac.uk/courses/ug/computer-science-for-cyber-security-bsc/

Information about entry to UBIC provision for this programme including available pathways is published online by Oxford International Education Group:

oxfordinternational.com/courses/detail/degree-university-of-bradford-bsc-hons-computer-science-for-cyber-security/