BSC (HONS) COMPUTER SCIENCE

Institute of Engineering, Computing and Advanced Manufacturing

Academic Level:	6	**Credits:**	360
UCAS Code:	B111		
Awarding Body:	University of Cumbria		
Delivery Site:	Barrow-In-Furness Campus Lancaster		
Programme Length:	3 Years full time 6 Years Maximum registration		
Mode of Delivery:	Blended Learning		
Pattern of Delivery:	Full time This programme may also be made available on an infill part-time basis at the discretion of the academic programme leader. In such cases, you will study modules alongside the full-time cohort(s) that are running at the time		
	Total weeks of study:	24 weeks	
	Delivery pattern:	2x 12-week semesters	
	Standard semester dates:	Yes	
Programme Webpage:	https://www.cumbria.ac.uk/study/courses/undergraduate/bsc-hons-computer-science/		

Entry Criteria
The University's standard criteria for admissions apply. Please refer to the Applicant Information pages of the University website for more information. For RPL, please refer to the University website. Detailed criteria for admission to this programme can be found on the programme webpage

PROGRAMME AIMS AND OUTCOMES

Programme Aims

By the end of this programme, learners will be able to:

1. Perform effectively as an IT professional, demonstrating a strong blend of technical capability, commercial insight and social awareness to deliver value across a range of industry settings.
2. Apply a rigorous understanding of Computer Science theory to design, develop, test and implement innovative and efficient computing solutions to complex, real-world problems, particularly within commercial and industrial contexts.
3. Use creativity and critical thinking to develop new technologies, systems and processes that respond to evolving societal, business and user needs — fostering innovation across sectors.
4. Demonstrate ethical and responsible practice, ensuring that technological advancement is sustainable, inclusive, and aligned with global standards for equity and environmental stewardship.
5. Demonstrate a versatile set of transferable skills — including communication, collaboration and adaptability — enabling access to diverse career pathways and empowering graduates to make a meaningful impact in their communities and beyond.

Programme Outcomes – Knowledge and Understanding

The programme provides opportunities for you to develop and demonstrate the following:

After 120 credits of study (CertHE) you will be able to demonstrate:

K1. Knowledge and understanding of common facts, concepts, theories and principles of computer technology and the ability to apply them to the solution of well-defined problems.

K2. Knowledge and understanding in simple modelling and design of computer-based systems for the purposes of comprehension and communication, and the understanding of constraints.

K3. Knowledge and understanding of selected tools, technologies and methods, to produce solutions relevant to the domain of computer science to meet a set of agreed objectives in business contexts.

K4. Awareness of the systems architecture and basic security measures in relation to the design, development, and use of information systems.

K5. Recognition and analysis of criteria and specifications appropriate to well-defined problems, plan strategies for their solution and draw conclusions regarding the suitability of the resulting computer-based system.

K6. Knowledge of the legal, social, ethical, environmental, economic, commercial and professional considerations that inform the activities of computer scientists.

After 240 credits of study (DipHE) you will be able to demonstrate:

K7. Knowledge and understanding of standard facts, concepts, theories and principles of computer technology and the ability to apply them to the solution of broadly defined problems that are subject to some constraints.

K8. Knowledge and understanding in the modelling and design of computer-based systems for the purposes of comprehension, communication, and prediction.

K9. Knowledge and understanding of a range of tools, technologies, and methods (including management techniques), to produce solutions relevant to the domain of computer science to meet a set of objectives in commercial and business contexts.

K10. Understanding of the systems architecture and security issues in relation to the design, development, use and maintenance of information systems.

K11. Recognition and analysis of criteria and specifications appropriate to broadly defined problems, plan strategies for their solution and draw conclusions regarding the current and future suitability of the resulting computer-based system.

K12. Knowledge of the legal, social, ethical, environmental, economic, commercial, and professional considerations that that impact on the use of computer technology.

After 360 credits of study (BSc Hons) you will be able to demonstrate:

K13. Knowledge and understanding of essential facts, concepts, theories and principles of computer technology and the ability to apply them to the solution of complex problems that are subject to some technical uncertainty.

K14. Knowledge and understanding in the modelling and design of computer-based systems for the purposes of comprehension, communication, prediction, and the understanding of trade-offs.

K15. Knowledge and understanding of contemporary tools, technologies, and methods (including management techniques), to produce solutions relevant to the domain of computer science to meet a set of agreed objectives and requirements in commercial and business contexts.

K16. Understanding of the systems architecture and security issues in relation to the design, development, use and management of information systems.

K17. Recognition and analysis of criteria and specifications appropriate to complex problems, plan strategies for their solution and make reasoned judgements regarding the current and future suitability of the resulting computer-based system.

K18. Recognition of the legal, social, ethical, environmental, economic, commercial, and professional considerations that that impact on the exploitation of computer technology.

Programme Outcomes – Skills and other Attributes

The programme provides opportunities for you to develop and demonstrate the following:

After 120 credits of study (CertHE) you will be able to demonstrate:

S1. The ability to construct computer-based systems to meet business needs.

S2. An appreciation of the general quality attributes and possible trade-offs presented within the given problem and recognise any risks that may be involved in the operation of computing systems within a well-defined context.

S3. The ability to deploy standard tools used for the specification, construction, design, implementation, documentation and maintenance of computer applications and information systems to meet business needs.

S4. For a well-defined problem, the ability to research its background, understand the social context, identify constraints, understand customer and user needs, identify cost drivers, and take steps to ensure fitness for purpose.

S5. The ability to work effectively, both as an individual and as a member of a development team.

S6. The development of transferable skills that will be of value in a wide range of situations including: problem solving, effective information retrieval, numeracy in understanding cases involving a quantitative dimension, communication skills in electronic as well as written and oral form and taking responsibility for your own learning.

After 240 credits of study (DipHE) you will be able to demonstrate:

S7. The ability to design and construct computer-based systems to meet business needs.

S8. The ability to evaluate the general quality attributes and possible trade-offs presented within the given problem and recognise any risks that may be involved in the operation of computing systems within a broadly defined context.

S9. The ability to deploy a range of tools used for the specification, construction, design, implementation, documentation and maintenance of computer applications and information systems to meet business needs.

S10. The ability to explore a broadly defined problem, research its background, understand the social context, identify constraints, understand customer and user needs, identify and manage cost drivers, ensure fitness for purpose and evaluate the outcomes.

S11. The ability to work as a member of a development team in a range of different roles and recognise different ways of organising teams.

S12. The development of transferable skills that will be of value in a wide range of situations including: problem solving, working with others, effective information management and information retrieval skills, numeracy in both understanding and presenting cases involving a quantitative dimension, communication skills in electronic as well as written and oral form and planning self-learning as the foundation for on-going professional development.

After 360 credits of study (BSc Hons) you will be able to demonstrate:

S13. The ability to specify, design and construct computer-based systems to meet business needs.

S14. The ability to evaluate systems in terms of general quality attributes and possible trade-offs presented within the given problem and recognise any risks that may be involved in the operation of computing systems within a given context.

S15. The ability to effectively select and deploy the tools used for the specification, construction, design, implementation, documentation and maintenance of computer applications and information systems, with particular emphasis on understanding the whole process involved in the effective deployment of computers to meet business needs.

S16. The ability to define a problem, research its background, understand the social context, identify constraints, understand customer and user needs, identify and manage cost drivers, ensure fitness for purpose and manage the design process and evaluate the outcomes.

S17. Confidence in working as a member of a development team, recognising the different roles within a team and different ways of organising teams.

S18. Your development of transferable skills that will be of value in a wide range of situations including: problem solving, working with others, effective information management and information retrieval skills, numeracy in both understanding and presenting cases involving a quantitative dimension, communication skills in electronic as well as written and oral form to a range of audiences and planning self-learning and improving performance as the foundation for on-going professional development.

PROGRAMME FEATURES

Programme Overview

The BSc (Hons) Computer Science is a modern, industry-aligned degree designed to prepare students for the fast-paced and evolving world of digital technology. Co-designed with industry leaders, the programme blends core technical disciplines with a strong emphasis on social responsibility, environmental sustainability and commercial relevance.

Students will explore a wide range of topics, including software development, immersive technologies, data science, artificial intelligence, cyber security, computer networking and agility, gaining the skills to design and implement innovative solutions that address real-world challenges. The curriculum is structured to support progressive learning from foundational knowledge at Level 4, through applied practice at Level 5, to critical evaluation and innovation at Level 6. Each level builds confidence and competence through active learning and project-based modules, with final-year projects often linked to industry and delivering commercially valuable outcomes. The programme aligns with British Computer Society (BCS) accreditation standards, providing a pathway to professional recognition as a Chartered IT Professional (CITP). Students based in Barrow-in-Furness will study in a new, purpose-built campus within the Barrow Learning Quarter Campus, while those in Lancaster will benefit from a vibrant city-centre campus with access to a wide range of academic and social resources.

What makes the BSc (Hons) Computer Science distinctive is its inclusive, hands-on and future-focused approach. The programme is committed to **widening participation**, offering accessible routes into tech careers for learners from all backgrounds. It features a **coursework-focused assessment model with no traditional exams**, encouraging deeper learning through practical application. Students engage in **active, project-based learning** using **cutting-edge technologies** such as **virtual reality, cyber security, robotics**, and **agile development**. Every module includes **embedded industry touchpoints**, giving students direct exposure to real-world challenges and professional practices. This unique combination of inclusivity, innovation and industry engagement ensures graduates are well-prepared for careers in computer science, engineering, manufacturing, immersive technology development, networking and cyber security, as well as for progression to postgraduate study, including MSc and PhD pathways.

Learning and Teaching

Teaching

As a student at the University of Cumbria, you are part of an inclusive learning community that recognises diversity. You will have opportunities to learn by interacting with others in a collegiate, facilitative, and dynamic learning environment. Teaching, assessment and student support will allow equal and equitable opportunities for you to optimise your potential and develop autonomy.

We seek to create a stimulating and innovative community of learning, whether encountered on campus or at a distance, on placement or in the workplace. Facilitated by our expert practitioner staff, you will experience a learning environment that is well equipped, flexible and stimulating.

Learning and Teaching

This programme's underlying philosophy is for you to be an active participant in your learning, so we deliver much of our teaching in flipped-classroom mode, which can be thought of as doing the lesson at home and the homework in class. You study the taught material in the Virtual Learning Environment (VLE) in your own time and at your own pace before attending in-person learning activities. These include classroom sessions that are based around problem-solving tutorials and seminar discussions to develop your knowledge. Workshops and laboratories sessions are also used to develop your skills, which include study skills, research methods, critical and analytical abilities, and your ability to manage your time and plan your work. Your tutors are all active researchers and use their experience in working on leading-edge projects to make sure that you are up-to-date with the latest developments in computer science.

To integrate your new knowledge and skills, you will undertake a series of projects throughout your degree. These modules use an inquiry-based learning method and are conducted in a simulated professional environment to help you develop your employability skills. At levels 4 and 5, you will undertake a series of short and focused projects, where you will work as part of a team under the guidance of a tutor. At level 6 you will undertake the capstone Professional Project, which is a significant and independent work where you will investigate a topic of your choice. You will need to be both creative and analytical in developing a computing solution to real-world needs.

Tutors will support your learning in person, via email, and through other communication channels as appropriate. At first, your tutors will act as guides and mentors, but over time, you will become more independent in how you direct your learning and your approach to problem-solving. So that teaching can be inclusive, accessible, practical, relevant, contextualised, and innovative, several different learning and teaching methods are used:

Lectures convey knowledge and concepts. You will learn from the lecture content and from different approaches to the organisation and presentation of material. Lectures are typically first presented on the VLE so you can review the material at your own pace. They can be textual, can include video and audio material, screencasts, or presentations with voice-over. You are expected to engage with this content before attending other scheduled teaching activities. Some traditional format lectures will be used when they are delivered by a guest speaker or else deal with administrative matters.

Tutorials represent most of your contact time and are always delivered face-to-face. Tutorial classes usually involve small groups but could be given on an individual basis. The critical element is the interaction between you, your tutor, and your peers as you solve problems and test your knowledge. Tutorials will help you to identify and articulate problems in your understanding, seek help and receive formative feedback on your work. Tutorials are interactive and you should be prepared to contribute to the discussion.

Laboratories are practical activities which can involve equipment, the computer, or both. They allow you to explore the theory described in lectures, develop hands-on skills, and to test your understanding of computing concepts. You will also gain experience in using specialist equipment.

Computing Workshops are supervised workshops held in the computer lab to give you practical experience using specialist software in design, development or analysis work. You will also be able

to develop your ICT skills using your own devices, but the University will provide any software you need. You will also have access to computer laboratories outside of scheduled teaching activities.

Practical Workshops could be used for practically oriented modules and seek to develop specific hands-on abilities. You will learn to be self-critical and to reflect on your work. Due to the potentially hazardous nature of the workshop, your work will be supervised until you reach a defined level of competence.

Seminars tend to be student-led and are used to explore concepts in greater depth. These provide inclusive opportunities for collaborative learning without prejudice or judgement. You will be required to engage in background reading and other forms of research, then to present and discuss your findings with your peers. You will develop a wide range of transferable skills in finding and evaluating information and communicating an idea.

Group Work is crucial to a successful career in computing, so your degree provides many teamwork opportunities that simulate a professional workplace. You will learn how to organise and structure collective or cooperative work processes and how to work in different roles, including leadership.

Industry Touchpoints are included within every module and are intended to give you practical experience of how taught content relates to the real-world. In some modules, guest speakers will deliver some part of the content where they have expertise. In other modules, local businesses will host a field trip, provide a project topic, a case study, a masterclass, a boot camp, or help to judge a student competition. Touchpoints can also include opportunities for you to gain professional certification, micro credentials, and badges alongside your degree.

Independent Learning

Independent study is a vital extension of formal teaching methods and an essential and substantial part of your degree. You will be expected to underpin the taught content by private study and to utilise all available resources. At first, you will be mentored and supported in learning how to learn. As you progress through your degree, you will become more independent and increasingly expected to source new information to supplement the teaching materials provided by your tutor.

Assessment

Summative and Formative Assessment

A variety of assessment methods have been built into this programme to support different learning styles and preferences. Assessment is either formative or summative. Formative assessment relates to your developing work and offers feedback on your progress. Summative assessment relates to your finished work and contributes to your module grade. Assessment deadlines are spread throughout the academic year to help you manage your workload.

Summative assessment is via coursework or exam, and many modules use a combination of both. The types of coursework you will complete reflect the tasks you will perform in employment, such as written reports, oral and graphical presentations, demonstration of computing artefacts and computer-based assignments. Where a group submits coursework, the tutor will modify the overall mark to reflect your contribution. This can be done by identifying your work within the report, or by

peer assessment where team members grade each other. Examinations are always unseen and performed under time-controlled conditions. The question type can be multiple choice, problem-solving or essay-style. Your tutor will explain the exact details of your assessment and provide copies of the marking scheme, so you will know what is expected. As a rule of thumb, you should allocate 20% of your independent learning time to preparing for assessments.

All modules include formative assessment to support your academic development as an independent learner. The exact type will depend on the module and will be explained to you by your tutor. In general formative assessment is based on an ongoing dialogue between you and your tutors. You will be encouraged to set personal goals and to reflect on your progress. Most modules will provide supplementary material on the VLE such as quizzes and tests, which you can use to gauge your knowledge and understanding of the module material.

Feedback

You will receive feedback on your completed assessments explaining what you did well and what you need to improve. Feedback will always include 'feedforward'. At levels 4 and 5, feedforward will explain where you will next encounter the subject matter or assessment type. At level 6, feedforward will link your work to your future professional practice.

Graduate Prospects

This degree programme was developed in conjunction with a cluster of high-tech advanced manufacturing businesses in southern Cumbria. Collectively, these industries represent 25% of Cumbria's economy and employ 13% of the regional workforce. With increases in automation and the integration of computer technologies, demand for highly skilled IT professionals is increasing.

A degree in Computer Science will open up a wide range of careers. Your career path will depend on what area you specialise in, but jobs directly related to your degree would include application, data or systems analyst, software development, web design and cyber security. The starting salaries are as varied as the roles, but typically, graduates will earn around £25,000. It's worth noting that Computer Science graduates across the UK have reported receiving anything from £17,000 – £70,000 in IT roles.

Computer Scientists are both analytical and creative thinkers who can operate on their own initiative and work as part of a team. You will be able to use your high levels of technical expertise to design, construct, deploy, manage, and maintain computer systems effectively, while maintaining the highest ethical standards in your approach to equality, diversity, inclusion, and sustainability. You will also develop a broad range of transferable skills that will be sought after in nearly all other numerate and analytical professions. You will also be sufficiently qualified to enter a programme of higher study such as MSc or PhD.

MODULES

Year 1			
Code	**Title**	**Credits**	**Status**
CSDD4101	Fundamentals of Computer Science & Programming	20	Compulsory
CSDD4108	Networking Fundamentals	20	Compulsory
CSDD4107	Introduction to Computing Systems	20	Compulsory
CSDD4104	Information Systems Design	20	Compulsory
CSDD4005	Designing Computing Solutions	20	Compulsory
CSDD4106	Web Development	20	Compulsory
Students exiting at this point with 120 credits would receive a CertHE Computer Science			

Year 2			
Code	**Title**	**Credits**	**Status**
CSDD5008	Application Development	20	Compulsory
CSDD5009	Big Data & Data Science	20	Compulsory
CSDD5010	Database & Enterprise Systems	20	Compulsory
CSDD5011	Network Management & Administration	20	Compulsory
CSDD5012	Software Engineering	20	Compulsory
CSDD5013	Cyber Security & Ethical Hacking	20	Compulsory
Students exiting at this point with 240 credits would receive a DipHE Computer Science			

Year 3			
Code	**Title**	**Credits**	**Status**
CSDD6006	Professional Project	40	Core
CSDD6007	Cyber-physical Systems, Robotics & Autonomous Technologies	20	Compulsory
CSDD6008	Artificial Intelligence	20	Compulsory
CSDD6009	Network Infrastructure Engineering	20	Compulsory
CSDD6010	Immersive Technologies	20	Compulsory
Students exiting at this point with 300 credits would receive an Ordinary BSc Computer Science			

Students exiting at this point with 360 credits would receive a BSc (Hons) Computer Science
Additional Module Information
Where a student has not succeeded in their programme, they will not be permitted to re-register on the same programme.

Key to Module Statuses	
Core modules	Must be taken and must be successfully passed.
Compulsory modules	Must be taken although it may be possible to condone/compensate as a marginal fail (within the limits set out in the Academic Regulations and provided that all core or pass/fail elements of module assessment have been passed).

Timetables
Timetables are normally available no less than four weeks before the start of Semester 1. Please note that while we make every effort to ensure timetables are as student-friendly as possible, scheduled learning can take place on any day of the week. Our Timetabling team work hard to ensure that timetables are available to students as far in advance as possible, however there may be occasional exceptions such as in the case of teaching which falls outside of the usual academic calendar. The UoC academic calendar runs from August to July, so timetabling information for programmes which include teaching sessions in August may not be published until closer to the August delivery.

ADDITIONAL INFORMATION

Student Support

The Student Enquiry Point is a simple way to contact Student Services. Using the Student Enquiry Point tile on the Student Hub you can submit an enquiry to any of the Student Services teams, which includes:

- Careers and Employability
- Chaplaincy for faith and spiritual wellbeing
- Mental Health and Wellbeing
- Digital Skills
- Disability and Specific Learning Difficulty (SpLD)
- International Student Support
- Library
- Money Matters
- Safeguarding
- Skills@Cumbria
- Sports and Fitness Facilities
- University Student Accommodation

As a student at the University of Cumbria you automatically become a member of the Students' Union. The Students' Union represents the views and interests of students within the University.

The Students' Union is led by a group of Student Representatives who are elected by students in annual elections. They also support approximately 400 Student Academic Reps within each cohort across the entire University. The Students' Union represent the views of their cohort and work with academic staff to continuously develop and improve the experience for all University of Cumbria students. You can find out more about who represents you at www.ucsu.me.

You can email at any time on studentvoice@cumbria.ac.uk.

Course Costs

Tuition Fees

Course fees can be found course fees

The following course-related costs are included in the fees:

- Field trips, bootcamps, hackathons and master camps that are included in a module as an industry touchpoint
- Specialist software

Additional Costs

The following course-related costs are not included in the fees:

None

Exceptions to the Academic Regulations

This programme operates in accordance with the University's Academic Regulations and Academic Procedures and Processes with the following permitted exception due to the requirements of the BCS The Chartered Institute for IT.

To meet BCS criteria the maximum period for completion is six years to ensure currency within the Computer Science industry. this is an exception to the University Academic regulations which state the maximum registration period for a Batchelor Degree is 7 years.

External and Internal Benchmarks

- QAA Benchmark Statement: Computing (2022)
- BCS Accreditation Guidelines
- UoC Academic Regulations and Academic Procedures and Processes
- UoC Strategic Plan
- UoC Learning, Teaching and Assessment Strategy
- UoC Institutional Business Plans
- UoC Academic Regulations and Academic Procedures and Processes

Disclaimer

This programme has been approved (validated) by the University of Cumbria as suitable for a range of delivery modes, delivery patterns, and delivery sites. This level of potential flexibility does not reflect a commitment on behalf of the University to offer the programme by all modes/patterns and at all locations in every academic cycle. The details of the programme offered for a particular intake year will be as detailed on the programme webpage: https://www.cumbria.ac.uk/study/courses/undergraduate/bsc-hons-computer-science/

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Date Programme Specification was last updated	June 2026