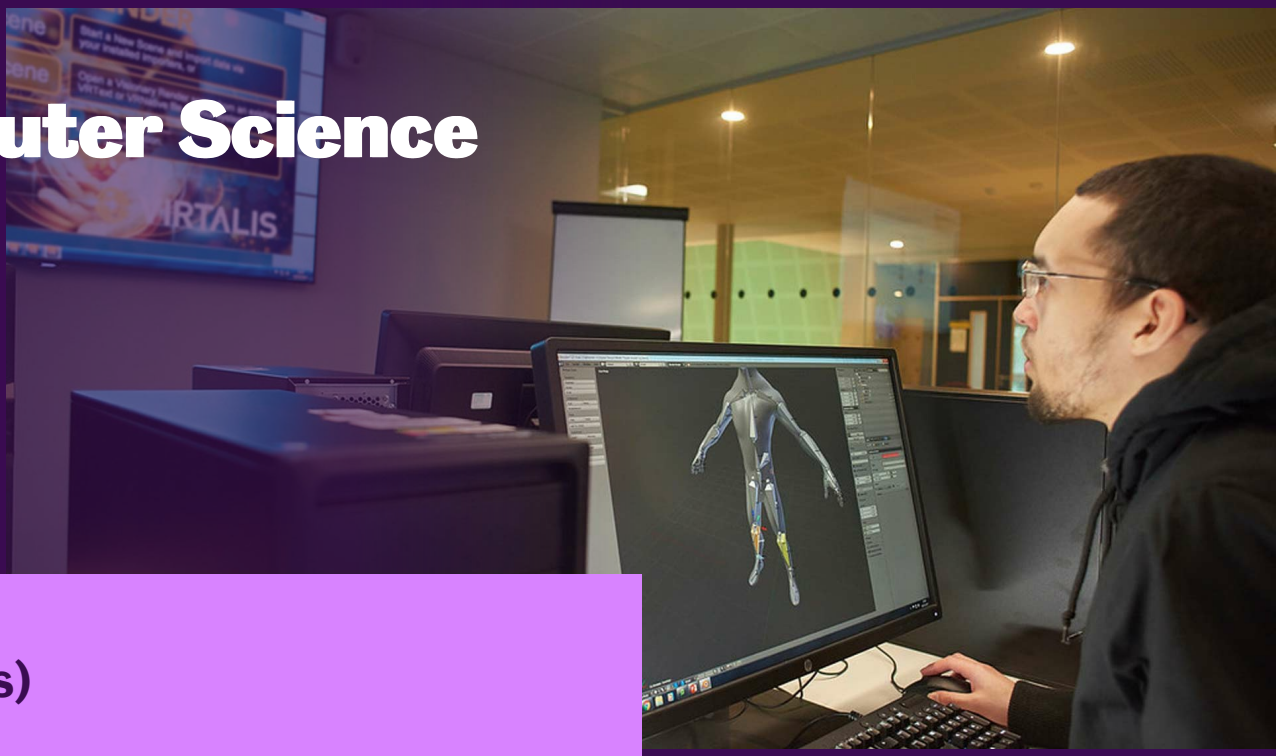
Edge Hill University

Computer Science



BSc (Hons)

UCAS code: CS12

Hardware. Software. Explore how it all works. Study new systems, new methodologies and new ways of thinking. Your creativity and originality could help drive technology forward on a degree awarded accreditation by BCS, The Chartered Institute for IT.

We are 2nd in the UK overall (Uni Compare 2027 – Computer Science).

- International students can apply
- Professional accreditation
- Sandwich year option available
- Studying abroad option available
- Work placement opportunity

bcs Accredited Degree

Key facts

Course length:	3 years full-time
Start dates:	September 2027
Example offers:	BBC-BBB (A Level) or DMM (BTEC)112-120 UCAS Tariff points
Department:	Computer Science
Faculty:	Arts and Sciences
Location:	Edge Hill University

Overview

Course overview

The computer chip in your phone has over 10,000 times the computational power of the one that took Neil Armstrong to the moon. With such advanced resources at our disposal, we have radically transformed our world for the better using a combination of software, innovative algorithms, and complex interconnected systems. You can be part of the next computing revolution with this computer science degree.

Develop essential skills for a career in computer science. Explore the bedrock of computation and mathematical theory and analysis. Discover which programming languages power global networks. Understand software development along with modern security issues and the importance of databases.

Through expert teaching, collaborative learning, and flexible resources, we have designed this course to help every learner to succeed. You'll study in our £13 million Tech Hub, equipped with modern and accessible computing labs and workspaces that support a variety of technologies including virtual reality, robotics, and high-performance computing. Whether you are new to programming or already have experience, you'll develop practical skills from the very beginning. You'll apply computer science to intelligent systems, data science and complex systems, and get hands-on experience with industry-standard tools. By the end of the course, you'll be well-equipped to take your skills and knowledge into a wide range of exciting industries and bring the future to life.

You'll also have the chance to gain hands-on industry experience through an optional placement year or study abroad, with past students working at organisations like Jaguar Land Rover, Barclays, and the NHS. The course is designed to prepare you for a wide range of careers in areas like software development, cybersecurity, data science, and artificial intelligence.

An accredited degree

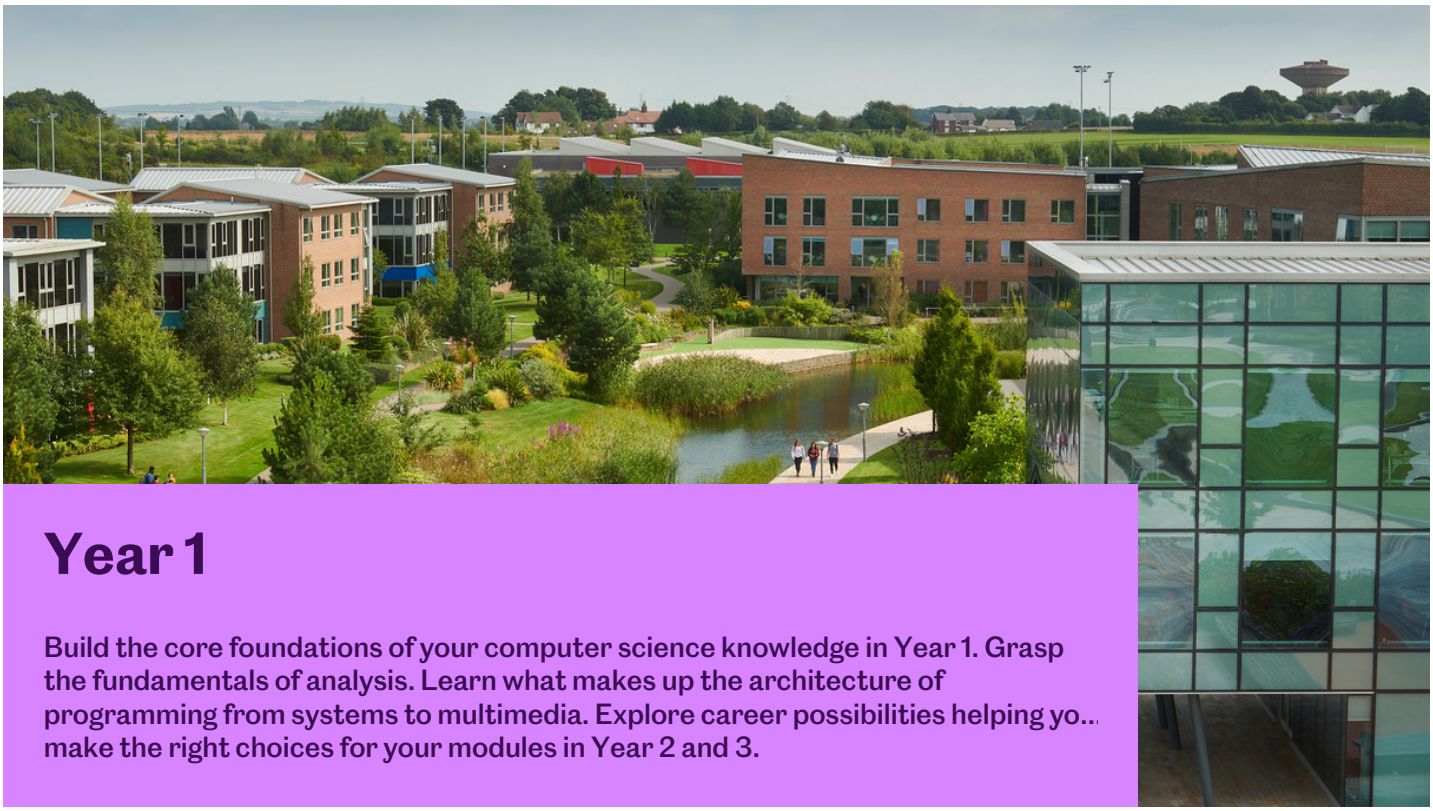
Our BSc (Hons) Computer Science is accredited by BCS, The Chartered Institute for IT, for the purposes of fully meeting the academic requirement for registration as a Chartered IT Professional. Successfully completing an accredited honours degree is the first step to full BCS membership and to being awarded chartered status, a qualification that's well respected across the tech sector.

Accreditations

bcs Accredited Degree

BCS, The Chartered Institute for IT

What you'll study



Year 1

Build the core foundations of your computer science knowledge in Year 1. Grasp the fundamentals of analysis. Learn what makes up the architecture of programming from systems to multimedia. Explore career possibilities helping yo... make the right choices for your modules in Year 2 and 3.

Compulsory modules:

Computer Systems Architecture and Networks

Computer Systems Architecture & Networks examines how the world is underpinned by information technology. Integrating theory and practice, the module will develop your understanding of the essential concepts in computer systems' architecture and networks. You will discover how current and modern computer architectures operate, analyse the technology on which they depend, and explore the basic principles of networks, including the interconnecting components and protocols used in enabling reliable communications. You will develop skills and knowledge in binary logic which forms the basis of electronic systems, as well as the application of operating systems to support the running of multiple software tools simultaneously. From a network perspective, you will look at network topologies, different types of networks, and the basic principles of protocol layers and models used in reliable data communications.

Coursework: 100%

Module code: CIS1701 Credits: 20

Differential Calculus

Differential Calculus provides a foundation in calculus, introducing the fundamental mathematical concepts which underpin mathematics at degree level. Calculus is one of the foremost branches of mathematics and its mathematical discipline has a unique legacy over the history of mathematics. This module enables you to use a mixture of numerical and analytical techniques to help achieve a deeper understanding of key concepts. It also embraces topics such as functions, limits, the fundamental theorem of calculus, differentiation from first principles, differentiating hyperbolic functions and inverse hyperbolic functions, improper integrals, numerical solutions, numerical differentiation, numerical integration and approximations to functions.

Coursework: 100%

Module code: MAT1001 Credits: 20

Foundations of Computer Science

Foundations of Computer Science introduces you to the theoretical and practical concepts of computer science. The module recognises that technology is in everyday life, from homes to the workplace, cars or portable or wearable devices. The true usefulness of this technology is in almost all cases enabled through software, and the amount of software that we interact with will continue to increase. You will explore the theoretical foundations of computer science to gain a deeper understanding of the problems and solutions outlined in lectures. The module will focus on the theories, methods and techniques in computer science as well as their applications and problems solving. You will learn strategies to split a problem into individual steps to solve, underpinned with the relevant mathematical knowledge and insights into the user environment.

Coursework: 100%

Module code: CIS1700 Credits: 20

Professional Practice 1

Professional Practice 1 introduces you to the computing profession and the professional practices of the industry. You will be introduced to the relevant regulatory requirements and accreditations governing the computing profession. You will also discover the role of professional bodies such as The Chartered Institute for IT (BCS), TIGA the network for games developers and digital publishers, and The National Cyber Security Centre (NCSC). Another key strand of the module is the development of key transferable skills. These include working independently and as part of a team, communicating effectively, and presenting information in a variety of formats including both written and oral. You will be encouraged to become a reflective and questioning learner and devise a personal development plan.

Practical: 20% Coursework: 80%

Module code: CIS1704 Credits: 20

Programming 1

Programming 1 provides a practical introduction to the fundamentals of computer programming. You will be introduced to computational thinking - a problem solving approach that underpins programming, the basics of algorithmic design and the analytical techniques and processes essential for specifying, designing and implementing simple software systems. The module will teach you how to tackle large problems by breaking them down into a sequence of smaller, more manageable issues. This is a foundation module for which no previous experience in programming is required.

Coursework: 100%

Module code: CIS1702 Credits: 20

Programming 2

Programming 2 provides a practical exploration of an object-oriented approach to software development. Programming is a key skill for analysts, software testers and software developers. You will be introduced to the analytical techniques and processes essential for specifying, designing and implementing basic object-orientated software systems. Through the lens of object-orientation, you will explore complex data structures and gain a better understanding of objects, object scope, object instantiation and their life cycle. The module will equip you with the skills needed to develop sophisticated object-orientated software systems consisting of multiple source code files and interacting objects, each with their own procedures.

Coursework: 100%

Module code: CIS1703 Credits: 20

Where your course includes optional modules, these are to provide an element of choice within the course curriculum. The availability of optional modules may vary from year to year and will be subject to minimum student numbers being achieved. This means that the availability of specific optional modules cannot be guaranteed. Optional module selection may also be affected by timetabling requirements. Some restrictions on optional module choice or combinations of optional modules may apply.



Year 2

Develop specialist skills and make yourself more employable in Year 2. Discover databases, security and artificial intelligence. Use statistical techniques and test-structures. We'll also test your progress and teamwork in a business environmen... solving real-world issues or making real products. At the end of Year 2, you can choose a 12-month industry placement or year abroad before starting your final year.

Compulsory modules:

Database Systems

Database Systems introduces you to the fundamental concepts in database design. Designing and implementing databases is a key skill in the computing industry where businesses of all sizes depend upon database management systems to gain a competitive advantage. Databases also play a central role in many information systems and are an integral part of e-commerce. This module will develop your practical skills in database modelling, development and design. You will discover the techniques for appropriate and efficient conceptual, logical and physical database design and learn how to create, handle, manipulate and manage database systems and resources.

Coursework: 60% Exams: 40%

Module code: CIS2700 Credits: 20

Introduction to Security

Introduction to Security outlines the basic concepts and areas of cyber security. Security is a crucial part of computer systems as it plays an essential role in preventing data breaches and helping achieving business continuity and compliance with data protection regulations. The module will introduce you to the basic concepts of security, how to identify security threats and vulnerabilities, and basic attacks and defence approaches. Security is a complex topic and the module will equip you with an understanding of security issues that apply in the use of networked computer systems in relation to personal data protection and information security.

Coursework: 100%

Module code: CIS2718 Credits: 20

Object-Orientated Programming

Object-Orientated Programming immerses you in object-orientated approaches to software development. Many programming languages, such as C++, C#, Java, Python, Ruby, Scala and VB.NET have been built with object-orientation in mind, while other historically procedural languages, from Cobol, Fortran and Pascal to Perl, PHP and Visual Basic, have been adapted to accommodate it. IT professionals with object-orientated programming skills are in high demand. This module presents the concepts underpinning object-orientated programming and explores how it's used to model and implement modern software systems. You will gain an in-depth understanding of the object-oriented modelling processes, learn how to translate a model into a software design, and discover how to implement that design in a modern object-oriented programming language. This will give you experience of the full software development life-cycle, from design to implementation. You will build your expertise from writing simple single source code file solutions, to complex, well designed systems organised into packages using the appropriate features of an object-orientated high-level programming language.

Coursework: 60% Exams: 40%

Module code: CIS2702 Credits: 20

Professional Practice II

Professional Practice II introduces you to the importance of teamwork and reflective practice. You will work as part of a team to complete a project by a deadline. This will enable you to focus on the design, production and commercial requirements of the project, as well as the associated risk management, budgetary constraints, and any ethical issues. You will reflect on your learning through the production of an e-portfolio.

Coursework: 100%

Module code: CIS2712 Credits: 20

Two of:

Data Analytics - CIS2705

Data Analytics immerses you in the explosion of digital data that is revolutionising business. Data analytics is used in many industries to enable companies and organisations to make better business decisions and, in the sciences, to verify or disprove existing models or theories. Organisations of every type are now expecting their business decisions to be based upon robust data analytics to support intuition and experience. Decision-making is expected to be close to real-time and deeply embedded into day-to-day processes. On this module, you will discover different data sources and data types and be introduced to a wide range of data analysis methods and tools. Working as part of a team, you will apply these methods and tools to a large real-world data-set. This will enable you to undertake the role of a data analyst, from the initial processing of a raw data set to the final visualisation and recommendations derived from the data analysis.

Coursework: 100%

Module code: CIS2705 Credits: 20

Foundations of Robotics & Artificial Intelligence - CIS2719

Foundations of Robotics & Artificial Intelligence recognises that the fields of artificial intelligence (AI) and robotics are expanding rapidly with exciting innovations being built to automate our world. The foundations of robotics and AI have roots in the work of Alan Turing investigating the boundary between human intelligence and computers. This module examines how AI techniques and principles from biological systems can be applied to robots to control behaviour and sense environments. You will develop an understanding of the theoretical problems, such as behaviour and the basics of learning techniques, inherent in robotics and use pre-built robots to design, implement and test different control and perceptual systems. Gaining expertise in various aspects of robotic programming, you will use multi-sensors to collect environmental measurements, design control strategies and make smart decisions by finding optimal solutions.

Coursework: 100%

Module code: CIS2719 Credits: 20

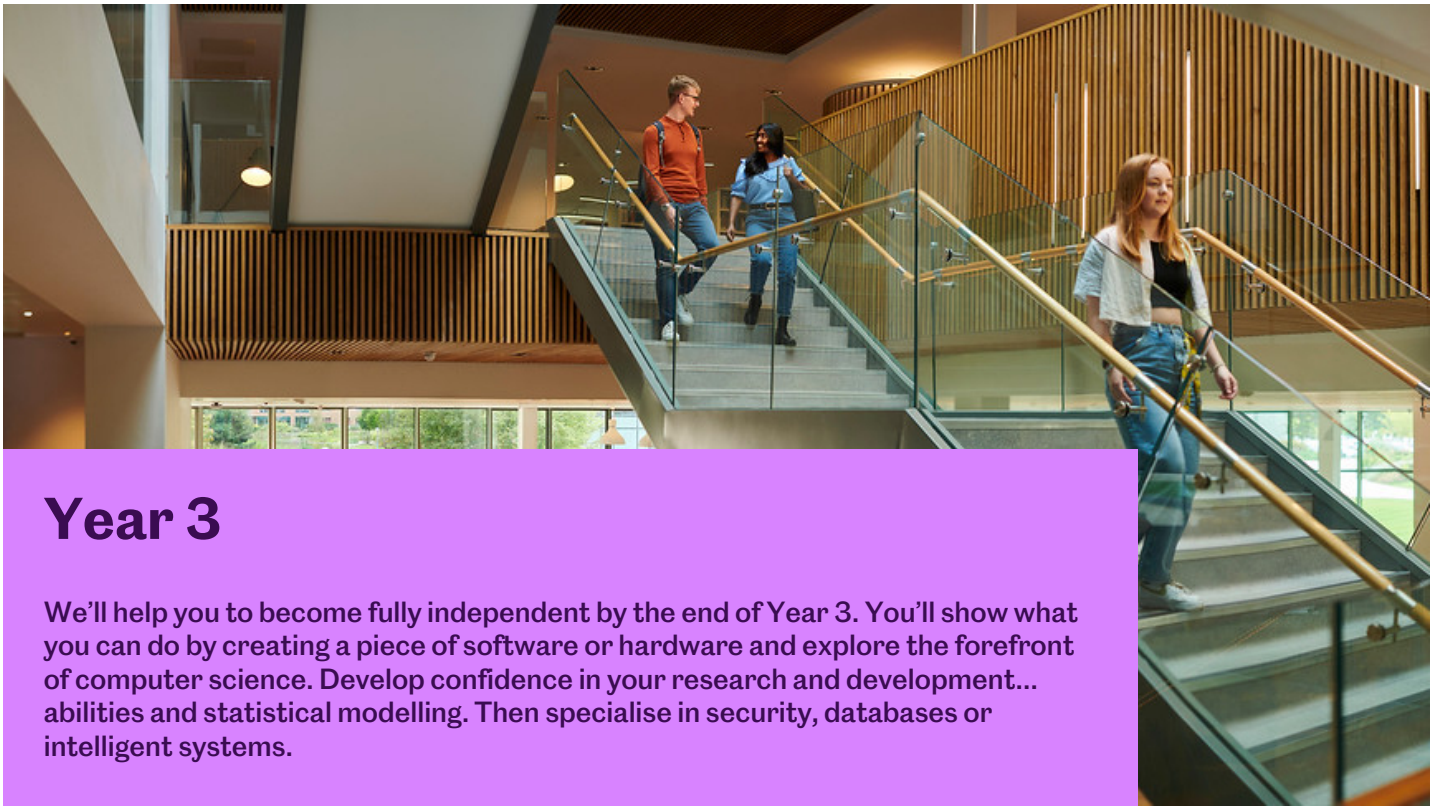
Introduction to Artificial Intelligence and Machine Learning - CIS2717

Introduction to Artificial Intelligence and Machine Learning outlines various techniques for creating artificial intelligence. Recent advances in computing has led to the proliferation of affordable ICT devices capable of collecting and processing massive amount of information in the form of digital data. This large amount of data can no longer be analysed using traditional model-based techniques. This has prompted researchers to develop data-based techniques that can learn patterns and relationships directly from the data itself. These methods are known as machine learning or data mining algorithms. This module will build your skills in developing algorithms in machine learning, artificial intelligence, deep learning, and natural language processing. You will also develop various programming skills in various languages, such as Python and Java, and platforms such as Pytorch and Tensorflow.

Coursework: 100%

Module code: CIS2717 Credits: 20

Where your course includes optional modules, these are to provide an element of choice within the course curriculum. The availability of optional modules may vary from year to year and will be subject to minimum student numbers being achieved. This means that the availability of specific optional modules cannot be guaranteed. Optional module selection may also be affected by timetabling requirements. Some restrictions on optional module choice or combinations of optional modules may apply.



Year 3

We'll help you to become fully independent by the end of Year 3. You'll show what you can do by creating a piece of software or hardware and explore the forefront of computer science. Develop confidence in your research and development... abilities and statistical modelling. Then specialise in security, databases or intelligent systems.

Compulsory modules:

Research and Development Project

Research and Development Project gives you the opportunity to show individual creativity and originality, apply your knowledge and skills, and demonstrate the ability to undertake an individual project through investigative research, problem-solving, effective communication and management. The project will be executed independently under the guidance of a supervisor. In exceptional circumstances group projects may be permitted as long as individual deliverables are clearly identified and this has been agreed with the Module Leader and Supervisor. You will conduct in-depth work on a substantial issue, including researching and analysing the problem and finding and realising a solution.

Practical: 80% Coursework: 20%

Module code: CIS3425 Credits: 40

Secure Complex Systems

Secure Complex Systems introduces you to a range of complex systems and their inherent security issues. The IT industry is constantly changing as advances in hardware, software and methodologies results in new systems being constantly developed and new application areas being discovered. Being at the forefront of these technologies is key to businesses wishing to obtain or keep their competitive advantage. These advancements in technology, while beneficial, are also pushing the boundaries of security technology and practices. This module will expose you to cutting-edge IT developments and other next generation technologies as they emerge along with the structures and technologies to keep them secure. You will have the exciting opportunity to contribute to these developments by identifying potential enhancements and providing recommendations for the future direction of the use of IT advances in complex systems. A key focus of the module will be on developing your critical thinking skills to evaluate current developments and identify the best option from a variety of choices.

Coursework: 100%

Module code: CIS3414 Credits: 20

Statistical Modelling

Statistical Modelling develops and extends the use of statistics in more complex problem solving and research design. The focus on mathematical structure in the module serves a dual purpose. First, you will gain understanding of, and confidence in, the procedures that you are using. Second, the module will prepare you for the demands of statistics as an ever-growing subject area. Embracing important statistical topics such as multiple regression analysis, Markov Chains and Estimators, you will select and execute tests for averages based upon parametric and non-parametric data, analyse and calculate estimators, use probability models to solve problems, and access and make appropriate use of computer software in data analysis.

Coursework: 100%

Module code: MAT3000 Credits: 20

Two of:

Advanced Databases - CIS3401

Advanced Databases develops your knowledge of databases and modelling tools through the practical application of appropriate database languages. Databases are an essential element of most small to large computer systems, so it's important that you have the skills to work with complex relational databases as well as more advanced NoSQL (Not Only SQL) database systems. The module will enhance your understanding of RDBMS database systems. These are a type of database management system (DBMS) that stores data in a row-based table structure which connects related data elements. An RDBMS includes functions that maintain the security, accuracy, integrity and consistency of the data. You will also have the opportunity to explore alternative non-tabular database systems that scale easily to handle large amounts of data and high numbers of users.

Coursework: 100%

Module code: CIS3401 Credits: 20

Distributed Systems - CIS3415

Distributed Systems evaluates the structure of parallel and distributed computer systems and applications. Parallel computing enables multiple processors to execute tasks simultaneously while distributed computing divides a single task between multiple computers to achieve a common goal. Advances in communication technology and increased user demands for sophisticated applications have pushed distributed computing models ahead of the centralised approach. Distributed programming frameworks have become enablers of big data analytics and other applications driven by artificial intelligence. On this module you will evaluate the structure of parallel and distributed systems and identify their respective strengths and weaknesses. You will gain a critical understanding of centralised and distributed models of communication technology through a range of modern and representative case studies. The module will culminate with practical, hands-on experience of the planning, design, implementation and evaluation of a small distributed system or application in response to a distributed computing problem.

Coursework: 60% Exams: 40%

Module code: CIS3415 Credits: 20

Embedded Systems - CIS3421

Embedded Systems today form the largest percentage of computer systems in service. They are greater in number than all other types of computer systems put together. Almost all moderately intelligent devices we use or rely upon, from domestic appliances to mobile telephones, motor vehicles, most automated consumer products, dispensers and toys, contain one or more microcontroller devices. These embedded systems are mostly not seen, tucked away in often unreachable and environmentally unfriendly locations. They are often expected to function for long periods of time, for example many years, without fault, attention or maintenance. As a result, they demand some unique engineering requirements. This module explores the principles of embedded systems as essential tools for enabling many other advanced technologies which can be seen or experienced every day. You will be introduced to the basics of the hardware and software unique to microcontrollers as core components of embedded systems. You will program a microcontroller and apply this skill to communicate with or control external devices.

Coursework: 100%

Module code: CIS3421 Credits: 20

Interface Programming - CIS3404

Interface Programming immerses you in the design and implementation of user interfaces. A key factor in whether a computer system is successful is whether or not the organisation for whom it is designed is able to use it. A poor fit for an organisation may mean that a system or service is ignored, rarely used, or used incorrectly. Human computer interaction is a field that looks towards applying information about human behaviour, abilities and activities in the design and evaluation of systems for productive, comfortable and effective human use. The development of new technologies offers richer functionality to interface developers and the opportunity to explore different mechanisms for the creation of user interfaces. You will develop a critical understanding of these mechanisms on this module. Exploring the relationship between the end user, interface designer and software developer, you will gain an insight into the human factors that guide decisions through the development process.

Coursework: 100%

Module code: CIS3404 Credits: 20

IT Management - CIS3402

IT Management prepares you for roles where you will oversee the acquisition and ongoing management of systems and services. The management of information technology within an organisation may be the responsibility of one person or several. IT Management is an incredibly diverse field, one which includes everything technological. Since almost every organisation now has some use for IT, it is a field of expertise that is continually growing and evolving and offers great career development opportunities. The module explores the key activities undertaken in IT management roles. You will gain an insight into the operational and strategic steps needed to develop an IT strategy. This will include developing your awareness of the need for a tactical and operational view of IT systems and the services of internal and external stakeholders. The module will cover everything from the selection and implementation of IT systems to relevant legal, ethical and security considerations which all feed into an effective IT strategy.

Coursework: 100%

Module code: CIS3402 Credits: 20

Where your course includes optional modules, these are to provide an element of choice within the course curriculum. The availability of optional modules may vary from year to year and will be subject to minimum student numbers being achieved. This means that the availability of specific optional modules cannot be guaranteed. Optional module selection may also be affected by timetabling requirements. Some restrictions on optional module choice or combinations of optional modules may apply.

"I chose to study Computer Science at Edge Hill after attending an Open Day and enjoying one of the coding sessions. The course content immediately appealed to me, and the campus stood out as somewhere I could see myself studying. "

BSc (Hons) Computer Science



How you'll study

We will ensure you gain relevant experience and use industry standard equipment. Computing involves considerable practical activity and many classes are based in computer workshops, focusing on student activity as a means of learning. We introduce theoretical concepts by building on concrete practical activity.

To enhance your employability you will be given opportunities to work together and develop the essential people skills to complement your technical ability, as well undertake a work placement to enable you to relate theory to practice and build your transferable skills.

Timetables for your first week are normally available at the end of August prior to enrolment in September. You can expect to receive your timetable for the rest of the academic year during your first week. Please note that while we make every effort to ensure that timetables are as student-friendly as possible, scheduled teaching can take place on any day of the week. Wednesday afternoons are normally reserved for sports and cultural activities.

How you'll be assessed

You will be assessed through a combination of practical exercises, reports, essays and examinations. We want you to develop the ability to work effectively both independently and as part of a team, therefore assessment includes both of these forms, though the emphasis is strongly on individual work.

Who will be teaching you

You will be taught by staff who are passionate about student learning and development. The programme team includes specialists in computing and active researchers in areas including data science, web information architecture, visualisation and intelligent systems. Academic staff are regular contributors to academic conferences and journals.

Facilities



Facilities introduction

The Department of Computer Science is based in the state-of-the-art £13million Tech Hub. This purpose-built development offers highly contemporary suites of outstanding facilities for Computer Science and Engineering students. Our modern computing and engineering laboratories are equipped with comprehensive test and measurement equipment, high-specification computers, high-resolution screens and the latest hardware and software. There are also specialist laboratories for networking and games programming, in addition to a specialist research laboratory, open access laboratory and a Harvard style lecture theatre.

Learning resources

Learning resources include robots and a robotics simulator, wired and wireless networking hardware, graphics software, web development tools, software development environments, big data servers, eye trackers, giant 3D interactive teaching screens, and other specialist software required for studying forensics and internet security techniques.

Entry criteria

Entry requirements

Typical offer 112-120 UCAS Tariff points, for which no specific subjects are required, plus GCSE Mathematics at Grade C or Grade 4 or above (or equivalent).

Please note, for all programmes in the Department of Computer Science, a level 2 numeracy qualification is not considered as equivalent to GCSE Grade C or Grade 4 in Mathematics.

Example offers

A Level	BBC-BBB.
UCAS Tariff points	112-120 points.
BTEC Extended Diploma (or combination of BTEC QCF qualifications)	Distinction, Merit, Merit (DMM).
T Level	Overall grade of Merit.
International Baccalaureate (IB)	We are happy to accept IB qualifications which achieve the required number of UCAS Tariff points.
Access to Higher Education Diploma	45 credits at Level 3, for example 15 credits at Distinction and 30 credits at Merit or 24 credits at Distinction and 21 credits at Merit. The required total can be attained from various credit combinations.

English language requirements

International students require IELTS 6.0, with a score no lower than 5.5 in each individual component, or an equivalent English language qualification.

If your current level of English is half a band or one band lower, either overall or in one or two elements, you may want to consider our Pre-Sessional English course.

Please note, the above examples may differ from actual offers made. A combination of A Level and BTEC awards may also be accepted. If you have a minimum of two A Levels (or equivalent), there is no maximum number of qualifications that we will accept UCAS points from. This includes additional qualifications such as Extended Project Qualification (EPQ), AS Levels that haven't been continued to A Level, and General Studies AS or A Level awards.

Financial support

2027/2028

Tuition fees

UK Full-Time	International
£10,050	**£15,000**
a year	a year

For the academic year 2027/28, the UK Full-Time tuition fee is currently set to £10,050. Please note this is subject to Parliamentary approval and is likely to be increased in line with inflation (RPIX). There may be further inflationary increases in your subsequent years of study.

EU/EEA and Swiss students who have settled or pre-settled status under the EU Settlement Scheme, as well as Irish nationals, may be eligible for the UK tuition fee rate.

Financial support

Subject to eligibility, UK students joining this course can apply for a Tuition Fee Loan from the Government to cover the full cost of tuition fees. UK students enrolling on the course may also be eligible to apply for additional funding to help with living costs.

Scholarships

We offer a range of scholarships, which celebrate the determination, commitment and achievement of our students. Many of our scholarships are awarded automatically. There are some however, where you will need to be involved in an application or nomination process. To find out more about our scholarships and check your eligibility, please visit our dedicated scholarships pages.

Money Matters

Please view the relevant Money Matters guide for comprehensive information about the financial support available to eligible UK students.

Money Matters

https://www.edgehill.ac.uk/study/fees-and-funding

EU/EEA and Swiss students who have settled or pre-settled status under the EU Settlement Scheme may be eligible to apply for financial support. Irish nationals can ordinarily apply to Student Universal Support Ireland (SUSI). If you are an EU student who does not have settled or pre-settled status, or are an international student from a non-EU country, please see our international student finance pages.

Your future career



Career prospects

A computer science degree opens the door to careers in a wide range of industries around the world. You could work in games development, health technology, banking, media, telecoms, and broadcasting. Almost every industry needs your skills in some way.

Computer science gives you the chance to work for exciting new start-ups or global big hitters. Our graduates have landed jobs with many prestigious companies around the world. We are proud to have alumni at Apple, Samsung, Jaguar Land Rover, Barclays, Very Group, and the NHS.

You could become an app developer or analyst, information or system analyst, or computer programmer. Job titles you could apply for include:

- Research Engineer
- Machine Learning Developer
- Software Developer
- Software Testing Engineer
- Java Developer
- Computer Science Teacher
- Test Analyst

Apply



ehu.ac.uk/CS12

or scan the QR code.

How to apply

Apply Full-Time

Read our guide to applying through UCAS to find out more about the application process.

International

This course is now closed to international applicants for January 2027 entry.

Should you accept an offer of a place to study with us and formally enrol as a student, you will be subject to the provisions of the regulations, rules, codes, conditions and policies which apply to our students. These are available at www.edgehill.ac.uk/studentterms.

Notes

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