



COMPUTER SCIENCE

UNDERGRADUATE SUBJECT BROCHURE 2019
EXETER CAMPUS



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My time at Exeter provided me with a solid platform for starting a career in software engineering. I learned the basics of Computer Science and began to develop a strong passion for coding and web development. It also introduced me to the importance of working as part of a team when building software during group projects – invaluable for anyone going into software development. Now I am a Front End Engineer at Facebook in Menlo Park, California. I am tasked with building user interfaces that perform at huge scale.

Gordon, Computer
Science graduate



COMPUTER SCIENCE

96% of Computer Science students in graduate-level employment or further study within six months of graduating¹

Industry experience available to all students through summer placements or year in industry

Excellent facilities spanning a wide range of machine types and software ecosystems

Teaching draws upon our particular research strengths in artificial intelligence and high performance computing

Comprehensive, relevant programmes inspired by the Computer Science development cycle: theory, design, develop, test and apply

Computer Science is a constantly evolving discipline for original thinkers. It is about solving multidimensional problems and revolutionising processes that apply to a whole range of sectors, including finance, marketing, engineering, sales, entertainment, social sciences, environmental and medicine.

Computer Science is more than coding, and experience of coding prior to studying this programme is not essential. Throughout your studies you will be taught languages including the C family and will have access to regular coding workshops.

You will belong to a small department with a strong identity and an active student community. Together, you can explore the topics such as artificial intelligence, nature inspired computation and machine learning.

You can study Computer Science as a single honours degree, or study Computer Science with Mathematics as a joint honours degree. Both of these subjects can be studied over three or four years, and offer opportunities for industrial experience. Exeter is one of the highest ranking universities to offer BSc Digital and Technology Solutions (Degree Apprenticeship). This innovative programme offers you an alternative student experience as you gain your degree whilst working in a relevant role. As a Degree Apprentice your tuition fees will be paid for by your employer and the government.

Studying Computer Science is challenging and rewarding; the skills you learn on this degree will give you the ability to solve complex problems, make sense of unintelligible data and recognise, understand and predict patterns. While these skills derive from Computer Science our graduates find work in a hugely varied selection of professions, with 96 per cent in graduate level employment or further study within six months of graduating¹.

ACCREDITATION



BSc Computer Science, both with and without an industrial placement, is accredited by the BCS (The Chartered Institute of IT) for the purposes of fully meeting the academic requirement for registration as a Chartered IT Professional, and (on behalf of the Science Council) for the purposes of partially meeting the academic requirement for registration as a Chartered Scientist. A programme of accredited further learning will be required to complete the educational base for CSci. (NB, CSci registration is not available through the BCS, but can be sought through other Professional Bodies depending on professional experience following graduation).



I chose Exeter because of its welcoming atmosphere, beautiful campus, and strong connections with industry. I've had a fantastic experience studying here and the lecturers are passionate about their subjects. Computer Science offers a wide range of modules, and lots of support is available outside of classes.

Emma, studying Computer Science

www.exeter.ac.uk/ug/computer-science

¹ Destination of Leavers from Higher Education Survey (DLHE) of 2015/16 undergraduates.

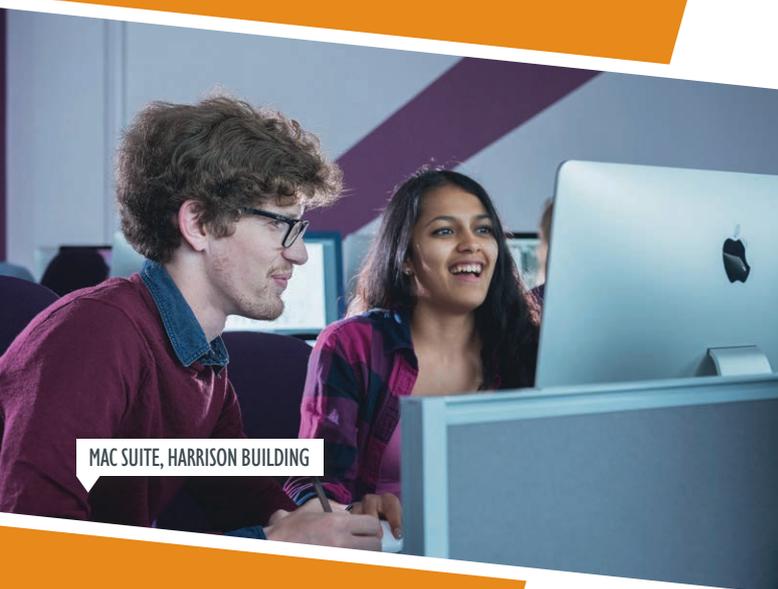
DEGREE PROGRAMMES

Our interdisciplinary programmes cover a range of skills within computer science from programming, basic science, discrete mathematics and logic, through to the latest developments in knowledge representation, pattern recognition, artificial intelligence and evolutionary computing.

We have a strong emphasis on the application of computer science to solving practical scientific, technological and business problems. Teaching relates directly to our active interdisciplinary research expertise, bringing the most up-to-date ideas and innovations into your degree programme.

We explore the fundamental aspects of system design; software development and deployment; multimedia systems incorporating graphics, animation and video; and the role of the internet. New techniques, including genetic algorithms and neural networks, are central to our teaching, as are approaches to dealing with the modern phenomenon of 'big data', through improved algorithms and architectures for data mining and processing.

You will not only develop a technical understanding of computing theory, software and hardware, but also enhance your ability to think clearly and logically, ultimately getting to the heart of a complex problem. Because of this, our graduates are highly regarded by prospective employers in a variety of sectors.



MAC SUITE, HARRISON BUILDING

SINGLE HONOURS

BSc/MSci Computer Science (EXETER)

BSc I400 3 yrs

MSci I402 4 yrs

AAA-ABB | IB: 36-32 | BTEC: DDD-DDM

Required subjects: GCE AL Maths⁺ grade B;
IB Maths HL5.

- Core first year allows you identify areas of interest that you can follow in later years
- Develop practical skills in specification, design and implementation of computer systems
- Switch between the BSc programme and MSci, or vice versa, any time during your first year

Year 1 Gain a solid foundation in computer science. This includes procedural and object-oriented programming, system architecture, computing for the web, professional issues of computing and exploring some of the boundaries of scientific knowledge in the field. Modules on vectors and matrices, and probability and discrete mathematics, provide the mathematical underpinning of later modules in computer science and artificial intelligence.

Year 2 Explore software development and engineering best practice, together with information systems. Optional modules span from artificial intelligence to teaching you how to design and develop applications for industry. You will also have the option to study the family of C languages in depth, and understand their history and applications.

Year 3 The project, in which you will develop a substantial software system for scientific application and/or business, forms the core of the final year and develops your skills and interests in computer science. The wide range of optional modules allows you to tailor your degree towards your specific interests.

Year 4 (MSci only) You will undertake two projects; a group development project, where you will develop a tool for an external 'customer' outside the discipline of computer science and an individual research project, where you will be supervised by an expert in your chosen research area.

⁺ See Entry Requirements box on page 5.

BSc Computer Science with Industrial Placement (EXETER)

I401 4 yrs

AAA-ABB | IB: 36-32 | BTEC: DDD-DDM

Required subjects: GCE AL Maths* grade B; IB Maths HL5.

- Spend your third year in relevant paid employment
- Dedicated academic tutor who will visit you throughout your placement year
- Professional experience year contributes to final year mark
- Experience professional employment, prior to applying to graduate market
- During your Industrial Placement year you will pay a reduced tuition fee

Years 1 and 2 Please see BSc/MSci Computer Science.

Year 3 Gain work experience in a business or commercial setting that will aid your development as an experienced computer scientist. You will apply the knowledge and skills you have learnt so far, to a professional environment. You will be encouraged to use imagination and creativity in problem solving and to develop communication, planning and time management, team-working skills.

Year 4 You will use what you have learnt to create a substantial piece of individual project work. It involves initial research and literature review, and specification and design of a software system, followed by implementation, testing, evaluation and demonstration of the system. Appropriate guidance and advice will be provided by a staff member. You will also study various optional modules, ranging from bioinformatics to enterprise computing.

BSc/MSci Computer Science and Mathematics

BSc Computer Science and Mathematics with Industrial Placement (EXETER)

BSc GG41 3 yrs

with Industrial Placement GG4C 4 yrs

MSci GG4D 4 yrs

A*AA-ABB | IB: 38-32 | BTEC: D*DD-DDM

Required subjects: GCE AL Maths* grade B; IB Maths HL5.

- Study two complementary disciplines
- Graduates are attractive in job market as they are able to tackle problems from two perspectives
- Equal split of Mathematical and Computer Science modules
- Study over three (BEng) or four years (MEng)
- Project work undertaken in your third or fourth year will provide you with the experience in designing and developing a substantial piece of software

Years 1 Gain a firm foundation in mathematics and the fundamentals of programming and computer systems. You can study topics such as web development, the internet, data structures and vectors and matrices.

Year 2 From your second year, you'll have a choice of optional modules which allows you to tailor your degree towards your preferences in Mathematics and/or Computer Science. Core modules will consist of software development and engineering, along with differential equations and vector calculus and applications.

Year 3 Apply your learning to a substantial piece of individual project work. This involves initial research and literature review, and specification and design of a software system, followed by implementation, testing, evaluation and demonstration of the system. Appropriate guidance and advice will be provided by a staff member. You'll also have an extensive range of optional modules to choose from. These include computer graphics, nature inspired computation, number theory, cryptography and more.

The Industrial Placement version of this degree includes work experience in a business or commercial setting that is of direct relevance to your development as an experienced computer scientist. You will be encouraged to use your imagination and creativity in problem solving, to develop communication skills, planning and time management and team-working skills.

Year 4 (MSci only) The four-year MSci Computer Science and Mathematics programme covers more advanced material and offers a higher level qualification. The final year includes a substantial project involving elements of both Computer Science and Mathematics, as well as a range of advanced optional modules in the two subjects, such as computer vision, modelling the weather, machine learning and more.

FLEXIBLE COMBINED HONOURS

Computer Science may also be studied under our innovative Flexible Combined Honours scheme.

- Combine two subjects where there is currently no existing Combined Honours degree at the University. These subjects can fall across departments, creating a cross-college degree
- Study three subject areas if compulsory modules allow
- Take modules from a variety of departments by studying one of our thematic pathways

Further information and the full list of available subjects can be found at www.exeter.ac.uk/ug/flexible



DEGREE APPRENTICESHIP

BSc Digital Technology Solutions (EXETER)

4 yrs | AAB | IB: 34 | BTEC level 3 Extended Diploma DDD

- Study for a fully-funded Exeter degree, while earning a salary
- Gain relevant industry experience from day one of your studies
- Delivered through a mix of on-campus residentials, online learning and work-based projects
- Typical salaries ranging between £13,000 and £19,000
- Apply directly to specific vacancies alongside your UCAS choices

BSc Digital and Technology Solutions is a full Exeter degree, studied over four years through a mix of on-campus residentials, e-learning and real-world projects.

As an apprentice you will be a full salaried member of your organisation throughout your studies, typically earning between £13,000 and £19,000. Much of your learning will take place at work, either through projects linked to academic content or time set aside for distance learning.

Depending upon the vacancy you've applied for, you might be working for a small IT start-up or a multinational corporation. You will follow one of several occupational specialisms including; data analysis, cyber security, software engineering, business analysis or IT consultancy.

HOW TO APPLY

BSc Digital and Technology Solutions does not follow the standard UCAS application process. You can apply to this programme directly via the employer in addition to making applications to any institution through UCAS.

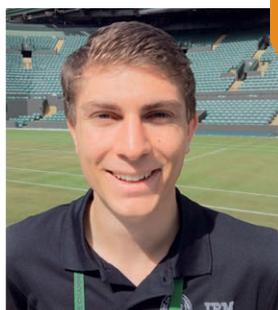
To gain a place you must apply directly to one of our partner employers' vacancies.

Vacancies are typically released on our website between January and April, although opportunities may arise outside this time depending upon a particular business's recruitment process. You can apply to more than one vacancy and it will not affect your UCAS application.

To be notified when vacancies are released, register your interest online – www.exeter.ac.uk/degreeapprentice

ENTRY REQUIREMENTS: MORE INFO

***Programme requirement** Candidates may offer GCE AL Maths, Pure Maths or Further Maths; IB Maths HL5; Applicants studying a BTEC Extended Diploma will also require GCE AL Maths grade B.



I chose Exeter University because it had one of the best Industrial Placement year schemes available. I spent a year working at IBM, and have now received an offer for a position with them once I graduate! The Computer Science course at Exeter is superb. The content is engaging and exciting and can cover everything from artificial intelligence to app development. Doing a placement year meant I could apply what I had learnt during the course to a business environment and gain some real, first-hand industrial experience.

Josh, studying Computer Sciences

LEARNING AND TEACHING

We make use of a variety of teaching styles, including lectures, seminars, workshops and tutorials. Most modules involve two or three lectures per week, so you will typically have about 10 lectures each week. In addition, workshops and tutorials support and develop what you've learnt in lectures, enabling you to discuss the lecture material and coursework in more detail. You'll have over 15 hours of direct contact time per week with your tutors and you will be expected to supplement your lectures with independent study. You should expect your total workload to average about 40 hours per week during term time.

FACILITIES

As a Computer Science student, you will have access to numerous facilities. The Mac suite is dedicated solely for Computer Scientists, and all Macs are installed with various compilers and development software. In addition, we have a Linux suite with 30 Windows machines, all installed with Scientific Linux for all your Computer Science needs.

In addition to the suites, the university has several rooms collectively housing over 180 individual HP i7 machines, dedicated to students within the College of Engineering, Mathematics and Physical Science. These spaces are used for teaching, private study and project work.

ASSESSMENT

Assessment in all years is by coursework and exams. You must pass your first-year modules in order to proceed, but your performance at this level does not count towards your final degree classification.

TAKING MODULES OUTSIDE OF YOUR PROGRAMME

Depending on your programme you may take up to 30 credits in another subject (subject to academic approval and timetabling), for instance a language or business module, to develop career-related skills or widen your intellectual horizons. If you achieve at least 60 credits in a language via our Foreign Language Centre, you may be able to have the words 'with proficiency in' and the language added to your degree title. Further details about the FLC can be found at www.exeter.ac.uk/flc

COMPUTER SCIENCE SOCIETY

The Computer Science Society is a great way to socialise with fellow coursemates, or like-minded individuals. Aside from social events, the society holds numerous workshops, as coding and programming can be challenging for even the most advanced student. It is also a great society if you are interested in networking with people in the industry as they organise regular visits to conferences and shows where big names attend.



The Athena SWAN Charter recognises and celebrates good employment practice for women working in Science, Technology, Engineering, Mathematics and Medicine (STEMM) in higher education and research. We believe it is vitally important that women are adequately represented in what has traditionally been a male-dominated area, as we strive for equality. The University is proud to have held a Bronze institutional award since 2011, and we were awarded a Bronze award at departmental level in 2014. In 2016 the Computer Science and Mathematics departments achieved a Silver Athena SWAN award. Find out more at www.exeter.ac.uk/computer-science/about/swan



YOUR SUCCESSFUL CAREER

RECENT GRADUATES ARE NOW WORKING FOR[▲]:

- BBC
- Hitachi Data Systems
- Microsoft
- NHS
- The Met Office
- HSBC
- Renishaw Plc
- IBM

Computer Science at Exeter will shape you into an individual who possesses many skills.

RECENT GRADUATES ARE NOW WORKING AS[▲]:

- Games Programmer
- Software Engineer
- Software Developer
- Sales Professional

[▲] This information has been taken from the Destinations of Leavers from Higher Education (DLHE) Surveys 2014/15. Please note that, due to data protection, the job titles and organisations are listed independently and do not necessarily correspond.

CAREERS SERVICES

We have a dedicated, award-winning Careers Service, with offices at our Exeter and Penryn campuses, ensuring you have access to careers advisors, mentors and the tools you need to succeed in finding employment in your chosen field on graduation. We offer the Exeter Award and the Exeter Leaders Award, which include employability-related workshops, skills events, volunteering and employment which will contribute to your career decision-making skills and success in the employment market. Our graduates compete very successfully in the employment market, with many employers targeting the University when recruiting new graduates. For further information about our Careers Service please visit: www.exeter.ac.uk/careers

INDUSTRIAL PLACEMENT YEAR

Some of our degree programmes include an Industrial Placement year which allow you to gain work experience in a relevant business or commercial setting and contributes directly towards your degree classification[◆]. See page 3 for further details.

[◆] During your Industrial Placement year you will pay reduced tuition fees.

MODULES

KEY C = Core
● = Optional

For up-to-date details of all our programmes and modules, please check www.exeter.ac.uk/ug/computer-science
Please note that availability of all modules is subject to timetabling constraints and that not all modules are available every year.

Year 1 Modules

Module Name	MSci/BSc Computer Science	MSci/BSc Computer Science and Mathematics	BSc Digital and Technology Solutions
Business Organisation			C
Computational Mathematics	C		
Computers and the Internet	C	C	
Data Structures and Algorithms	C	●	
Discrete Mathematics for Computer Science	C		
Foundations		C	
Information and Data			C
Interpersonal and Foundation Skills			C
Methods		C	
Object-Oriented Programming	C	C	
Programming	C	C	
Reflective Practice 1			C
Social and Professional Issues of the Information Age	C		
Structures		C	
System Development I			C
Web Development	C	●	

Year 2 Modules

Module Name	MSci/BSc Computer Science	MSci/BSc Computer Science and Mathematics	BSc Digital and Technology Solutions
Algebra		●	
Ambassadors for Science		●	
Analysis		●	
Artificial Intelligence and Applications	●	●	
Computer Languages and Representations	C	●	
Cryptography		●	
Database Theory and Design	C	●	
Differential Equations		●	
Digital Technology Infrastructure			C
Information Security			C
IT Project Management			C
Mathematics Theory of Weather and Climate			
Mobile and Ubiquitous Computing	●	●	
Modelling: Theory and Practice		●	
Network and Computer Security	C	●	
Outside the Box: Computer Science Research and Applications	C	●	
Probability, Statistics and Data		●	
Reflective Practice 2			C
Software Development	C	C	
Software Engineering	C	C	
Systems Development 2			C
The C Family	●	●	
Vector Calculus and Applications		●	

Year 3 Modules (Year 4 for Industrial Placement students)

Module Name	MSci/BSc Computer Science	MSci/BSc Computer Science and Mathematics	BSc Digital and Technology Solutions
Algorithms that Changed the World	●	●	
Bioinformatics and Systems Biology		●	
Commercial and Industrial Experience	●	●	
Computability and Complexity	●	●	
Computer Graphics	●	●	
Enterprise Computing	●	●	
Fluid Dynamics		●	
High-Performance Computing and Distributed Systems	●	●	
Individual Literature Review and Project	C	C	
Individual Project	C		
Information Systems			C
IT Law and Ethics			C
Learning from Data	●	●	
Mathematics Modules		●	
Nature-Inspired Computation	●	●	
Partial Differential Equations		●	
Reflective Practice 3			C
Stochastic Processes		●	

Year 4 Modules

Module Name	MSci Computer Science	MSci Computer Science and Mathematics	BSc Digital and Technology Solutions
Algebraic Curves		●	
Algebra Number Theory		●	
Computer Modelling and Simulation	●	●	
Computer Vision	●	●	
Dynamical Systems and Chaos		●	
Dynamics and Evolution of Biological Systems		●	
Evolutionary Computation and Optimisation	●	●	
Fluid Dynamics of Atmospheres and Oceans		●	
Group Development Project	C		
Intelligent Image Understanding		●	
Logic and Philosophy of Mathematics	●		
Logic, Ontology and Knowledge Representation	●		
Machine Learning	●	●	
Magnetic Fields and Fluid Flows		●	
Mathematical Analysis of Biological Systems		●	
Mathematical Modelling in Biology and Medicine		●	
Modelling the Weather and Climate		●	
Nature-Inspired Computation	●	●	
Research Methodology		●	
Research Project	C	C	
Synoptic Project			C
The Climate System		●	
Waves, Instabilities and Turbulence		●	

MODULES CONTINUED

Please note that availability of all modules is subject to timetabling constraints and that not all modules may be available every year. For up-to-date details of all our programmes and modules, please check the undergraduate section of our website at www.exeter.ac.uk/ug/computer-science

YEAR I

Programming	To use computers to solve new complex problems, and as a tool to create, we must be able to program them. This module introduces you to programming and problem solving with a computer. You will learn how to formulate an algorithm to solve a problem, and you will acquire the skills to write, test and debug programs.	Computational Mathematics	Computer Science draws from a wide range of essential mathematical techniques. You will cover linear algebra and vector spaces, statistics and probabilities and numerical optimisation. During this module, you will learn to apply theoretical knowledge in concrete programming tasks.
Social and Professional Issues of the Information Age	Gain the tools to reflect upon your role in the interface between digital technologies and society, and on the moral and ethical use of information and information systems. You will cover ethical theories, computer law and professional codes of conduct, and will address the ways in which broader areas of law (eg, defamation, contracts, privacy and freedom of information legislation) impact upon technology users and IT professionals.	Web Development	Learn about the techniques and technologies that are used to develop usable, accessible, efficient, robust and secure websites. These techniques and technologies will be demonstrated by writing programs (eg, browsers) for both web clients and web servers. In both cases, the need for portability imposes constraints not found when writing programs for a single operating system.
Object-Oriented Programming	This module will introduce you to object-oriented problem-solving methods and provide you with object-oriented (OO) techniques for the analysis, design and implementation of solutions. By the end of this module, you will be able to apply these skills to design and implement small applications.	Computers and the Internet	This module is designed to equip you with the foundational information you need to understand and work in business and technical fields requiring the use of computers and networking technologies. Computing technology has a diversity of applications, so this module is suitable both for computer science students and for those pursuing other study disciplines. On this module, you will acquire useful knowledge of computer systems, computer networks and information systems analysis and design.
Computers and the Internet	Establish a solid understanding of how business and other technical fields use computers and networking technologies. By the end of the module, you should be well placed to make use of an extensive range of hardware and software. In addition, you will have gained the knowledge and skills to enable you to analyse existing computer-based information systems, and to design and develop web-based applications from informal specifications.	Structures	A key success of mathematics throughout its history has been its ability to unify and generalise disparate situations exhibiting similar mathematical properties through the use of abstract algebraic structures. In this module, you will explore key developments along that journey, including the theory of groups and vector spaces, and you will learn how to develop proofs and present your reasoning clearly.
Data Structures and Algorithms	The aim of this module is to introduce you to the fundamental role played by data structures and algorithms in computer science. You will have already acquired some practical understanding of data structures and how they work from the programming module; now it is time to put this understanding on a more formal and theoretically-grounded footing by introducing a systematic framework for the description and manipulation of data structures.	Methods	This module will introduce you to key mathematical tools and techniques essential to your further studies. This will include differential and integral calculus, computing limits and convergence of sequences and series, geometry and the fundamentals of vectors and matrix algebra.
Discrete Mathematics for Computer Science	Discrete mathematics is concerned with quantities which vary minutely. The skills and knowledge you will learn on this module will form an essential element of your education and career as a computer scientist or computer expert whose work includes computer-based data manipulations.		

System Development 1

The purpose of this module is to introduce you to programming in Python. You will be exposed to the key processes related to building functioning applications for business. You will learn and apply the basic concepts of programming and programming logic. You will also be introduced to software engineering practice at an overview level.

Reflective Practice 1

This module represents the work that you do for your employer. It provides an opportunity for you to apply what you have learned during the apprenticeship in your day-to-day work and to develop useful workplace skills and behaviours. The aim is to allow integration and internalisation of skills and knowledge.

YEAR 2**Software Development**

An introduction to software design and development concepts and methods. Alongside this you will explore intermediate and advanced constructs and concepts in the Java programming language, and the programming paradigms these relate to. This includes generic programming (and Java generics), concurrent programming (via Java threads), design patterns, networked programs and nested inner classes.

Software Engineering

Study aspects of software engineering that relate to the requirements, analysis and production of large systems; by the application of object-orientated programming techniques to a large and complex project in a team-working environment.

Computer Languages and Representations

You will be introduced to some approaches to computation that are, in various ways, radically different from the imperative and object-oriented approaches you will be familiar with from working with languages such as Python and Java. We will introduce you to two distinct programming language paradigms: functional programming (represented by the language Haskell) and logic programming (represented by Prolog).

Database Theory and Design

Gain an insight into the theoretical and technical issues underlying current and future database management systems. You will acquire practical and theoretical competence in database modelling and design, as well as gaining familiarity with modern database technology.

Network and Computer Security

Network and computer security is now widely recognised as a vital aspect in the design, development, and implementation of today's computer systems. This module will provide a solid understanding of the main issues related to security in modern computer systems and networks.

The C Family

The family of C languages includes some of the most widely-used programming languages in science and commerce today. From embedded systems to scientific modelling and from mobile apps to web services, many of the systems around us have been developed in a C family language. In this module you will be introduced to a number of the C family languages, their history, and the computer systems that they are most commonly used to develop.

Outside the Box: Computer Science Research and Applications

This module gives you a chance explore the breadth and depth of Computer Science beyond the core technical content of the main syllabus to give you a view of some of the current research in Computer Science and ways in which Computer Science is used to solve problems in other areas.

Digital Technology Infrastructure

This module provides an introduction to basic computer system organisation and network infrastructure with an overall focus on the services and capabilities that network infrastructure solutions enable in an organisational context. You will gain the knowledge and skills that they need for the planning, design, implementation and management of computer networks and understanding of the network infrastructure capabilities and limitations.

Information Security

This module provides you with an introduction to the fundamental principles of Information Technology Security and Risk Management at the organisational level. You will learn critical information and cyber security principles and management.

IT Project Management

This module introduces the processes, methods, techniques and tools that organisations use to manage their IT projects. You will learn how to apply a systematic methodology for initiating, planning, executing, controlling, and closing projects.

Systems Development 2

The purpose of this module is to extend your understanding of the fundamental concepts of systems development through programming in languages such as Java and C#, computational thinking and data structures. You will analyse models of application development so that you can understand the key processes related to building functioning applications and appreciate the complexity of application development.

Reflective Practice 2

This module represents the work that you do for your employer. It provides a further opportunity for you to apply what you have learned during the apprenticeship in your day-to-day work and to enhance your workplace skills and behaviours. The aim is to further the integration and internalisation of skills and knowledge.

YEAR 3

Individual Literature Review and Project

Everything you have learnt in your Computer Science studies comes together in a substantial piece of individual project work; involving initial research and literature review, specification and design of a software system, followed by implementation, testing, evaluation and demonstration of the system.

Individual Project

You will make use of the knowledge and skills acquired in the first two years in the specification, design, implementation, testing and evaluation of a substantial piece of software. This is an individual project, meaning that you will be working on your own, with the guidance of an academic staff supervisor. You will be expected to follow the principles of software development which you have learnt in the second year modules Software Development and Software Engineering.

Enterprise Computing

The vast majority of businesses now rely upon well-designed, functional, efficient and secure IT systems to carry out their day-to-day operations and to guide their business strategy. This module introduces you to the techniques required to enable the development of systems that can operate across multiple sites, perhaps even multiple countries, in a secure and efficient manner.

Computability and Complexity

This module will introduce you to the Turing Machine model of computation which underpins the fundamental theories of computability (concerned with what can be computed at all) and complexity (concerned with how efficiently things which can be computed can be computed).

Commercial and Industrial Experience

This module will provide you with an opportunity to undertake practical work experience in a business, commercial or public sector setting that is of direct relevance to your development as an experienced professional. You will apply the knowledge and skills from taught modules to authentic problem solving in the work place which will give you important insights into your potential job role once you graduate from university.

YEAR 4

Group Development Project

Undertake a software development project for an external 'customer' from outside of the Discipline of Computer Science. The project will be large enough that you will have to work in teams and varied enough for you to develop separate pieces of the project according to your interests and abilities.

Individual Research Project

This is an independent piece of work, which includes several aspects of research, implementation and analysis of the results achieved. Throughout your project you will be supervised by an expert from the relevant sub-discipline.

Computer Vision

Computer Vision plays an important part in how AI technology responds to its environment. This module covers the fundamentals of Computer Vision, covering the essential challenges and key algorithms for solving a variety of vision problems. You will study practical applications and cover a broad range of problems, from low-level image processing to object recognition, tracking and 3D vision.

Logic, Ontology, and Knowledge Representation

The study of knowledge representation is particularly fascinating as it combines technical issues concerning the digital representation and manipulation of knowledge with ontological issues concerned with the nature and structure of human knowledge and understanding of the world. This module will provide an introduction to all these aspects, building on an assumed prior acquaintance with computer data structures and elementary formal logic.

Computer Modelling and Simulation

This module is designed to equip you with foundational knowledge and useful skills in computer modelling and simulation. Numerous architectures, protocols and algorithms have been proposed for contemporary computer and communication systems. Analytical modelling and simulation play an increasingly important role in computer science and modern engineering, particularly in the design, performance prediction, evaluation, and optimisation of computer and communication systems.



My degree definitely left me very well prepared for my current role. The computer science aspect of it gave me some hard skills and understandings of the underlying technology I work with day-to-day, and the management aspects give me a different point of view and attitude when it comes to decision making and collaboration. Exeter is a lovely place, and I wouldn't be where I am now without my degree. One of my favourite things about the uni is how easy it was to get to know people and meet your friends randomly on the streets or on campus.

Nik, Computer Science graduate

KEY INFORMATION AT A GLANCE

	UCAS CODE	TYPICAL OFFER
Single Honours		
MSci Computer Science	I402	AAA-ABB; IB: 36-32; BTEC: DDD-DDM
MSci Computer Science and Mathematics	GG4D	A*AA-ABB; IB: 38-32; BTEC: D*DD-DDM
BSc Computer Science	I400	AAA-ABB; IB: 36-32; BTEC: DDD-DDM
BSc Computer Science with Industrial Placement	I401	AAA-ABB; IB: 36-32; BTEC: DDD-DDM
BSc Computer Science and Mathematics	GG41	A*AA-ABB; IB: 38-32; BTEC: D*DD-DDM
BSc Computer Science and Mathematics with Industrial Placement	GG4C	A*AA-ABB; IB: 38-32; BTEC: D*DD-DDM
BSc Digital and Technology Solutions (Degree Apprenticeship)	N/A*	AAB; IB: 34; BTEC Level 3 Extended Diploma DDD
BA/BSc Flexible Combined Honours		
Flexible Combined Honours/ with Study Abroad [▲] / with UK Work Experience/ with Work Abroad	Y004/ Y006/ Y007/ Y008	A*AA-AAB; IB: 38-34; BTEC: D*DD-DDD

* BSc Digital and Technology Solutions does not follow the standard UCAS application process. To gain a place you must apply directly to one of our partner employers' vacancies. You can apply to this programme in addition to making applications to any institution through UCAS.

The full and most up-to-date information about Computer Science is on the undergraduate website at www.exeter.ac.uk/ug/computer-science and we strongly advise that you check this before attending an Open Day or making your application. Some programmes require prior study of specific subjects and may also have minimum grade requirements at GCSE or equivalent, particularly in English Language and/or Mathematics.

We make every effort to ensure that the entry requirements are as up-to-date as possible in our printed literature. However, since this is printed well in advance of the start of the admissions cycle, in some cases our entry requirements and offers will change.

International students

If you are an international student you should consult our general and subject-specific entry requirements information, for A levels and the International Baccalaureate, but the University also recognises a wide range of international qualifications. You can find further information about academic and English language entry requirements at www.exeter.ac.uk/ug/international

For full and up-to-date information on applying and entry requirements, including requirements for other types of qualification, please see www.exeter.ac.uk/ug/applications

STREATHAM CAMPUS, EXETER

Website: www.exeter.ac.uk/ug/computer-science
www.exeter.ac.uk/enquiry
Phone: +44 (0)1392 724061

[▲] For details about Study Abroad please see www.exeter.ac.uk/ug/computer-science

THE UNIVERSITY OF EXETER



Teaching Excellence
Framework assessment 2017



5 star rated from QS



22,000 students from
178 countries



98% of our research rated of
international quality¹

RUSSELL
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fastest rising research university²

FIND OUT MORE

Come to one of our open days. Visit us at our campuses
in Exeter and Cornwall: www.exeter.ac.uk/ug/visiting

For further information please visit
www.exeter.ac.uk/ug/computer-science

Accuracy of subject brochure information

The information in this subject brochure forms part of the undergraduate prospectus 2019 and is aimed at prospective undergraduate students wishing to apply for a place at the University of Exeter (the University) and start a course with us in autumn 2019. The prospectus and subject brochures describe in outline the courses and services offered by the University and we make every effort to ensure that the information provided is accurate and up-to-date at the time of going to print (undergraduate prospectus is printed January 2018 and subject brochures are printed in May 2018).

However, it may be necessary for the University to make some changes to the information presented in the prospectus following publication – for example, where it is necessary to reflect changes in practice or theory in an academic subject as a result of emerging research; or if an accrediting body requires certain course content to be added or removed. More information about our terms and conditions can be found at: www.exeter.ac.uk/undergraduate/applications/terms

¹ 98% of our research was rated as 2*,3* or 4* in the Research Assessment Exercise 2014.

² Between 2006/07 – 2015/16, the University of Exeter saw the greatest rise in research income, compared to all other Russell Group universities.

