Course information

This document is intended to be read alongside your offer letter and the King's College London Terms & Conditions. It was written in August 2023 and applies to students entering the programme in 2024-25. If youare entering a different year, please contact the Admissions Office.

Programme Name:	Computer Science BSc
UCAS code	G400
Duration:	Three years
Academic year of entry:	2024
Study mode:	Full-time

Introduction

On our Computer Science BSc course, you will gain an in-depth understanding of computer-based information systems in the heart of a connected London. The first two years of the course focus on the foundations of computer science and will equip you with the skills to develop a software system as part of a team – something that will serve you well for your future career. The third year allows you to specialise your knowledge by selecting from a range of modules, and showcase your talents by completing an individual project.

The BSc in Computer Science will allow you to understand the underlying principles of a range of Computer Science dimensions, including:

- Software Engineering (e.g. programming skills and technologies, as well as planning, implementation, and maintenance of large software projects)

- Algorithms and Optimisation (e.g. analysis and benchmarking of software, algorithmic techniques)

- Cybersecurity (e.g. cryptography and Information security)

- Systems Engineering (e.g. real-time and embedded systems, communication protocols, and systems-level programming)

- Foundations of Computing (e.g. programming paradigms, and computational models)

- Fundamentals of Artificial Intelligence (e.g., formal logics, search techniques, machine learning)

It will also provide you with the background knowledge and skills required to become a successful professional able to work in a range of exciting roles (see Careers Prospects).

You will also have the opportunity to transfer to the study abroad pathway and spend your 3rd year at a partner institution before returning to King's for your final year. This depends on you reaching a certain grade average and being accepted by a Partner University.

Key benefits

Your degree offers a range of Knowledge, Attributes, Skills and Experiences that are valuable for your future.

- 7th in the UK for Computer Science (QS World Rankings)

- You'll interact with world-class experts in many exciting areas of Computer Science, including Algorithms and Data Analysis, Cybersecurity, Human-Centred Computing and Software Systems.

- Great employability following completion of your degree.

- You'll study a wide-range of innovative modules, covering both the theory and practice of modern

Computer Science.

- Excellent tutorial support and extensive course-specific interactive teaching

- Friendly and supportive learning environment, with students from across the globe.

- An inclusive learning environment for all students, actively promoting diversity.

- Our central London location is close to top, global companies, such as Google and Amazon, and gives unparalleled access to leading scientific societies, including the Chartered Institute for IT (BCS) and the Institution of Engineering and Technology (IET).

- This degree has been accredited by BCS, The Chartered Institute for IT. Accreditation is a mark of assurance that the degree meets the standards set by BCS. An accredited degree entitles you to professional membership of BCS, which is an important part of the criteria for achieving Chartered IT Professional (CITP) status through the Institute. Some employers recruit preferentially from accredited degrees, and an accredited degree is likely to be recognised by other countries that are signatories to international accords.

Course details

Course description
Our Computer Science BSc course will provide you with an in-depth understanding of the field of computer-based information systems offering you opportunities to develop analytical and practical transferable skills, as well as an understanding of the changing role of Computer Science in society and relevant social, legal, professional, and ethical responsibilities. All these are key knowledge areas and skills that will allow you to learn and adapt continuously and are important in both well-established and cutting-edge roles undertaken by Computer Science professionals (see Career Prospects).

In the first two years, you will study areas such as programming, computer systems, databases, software engineering and logic. In the third year, you will undertake a project that will offer you an opportunity to integrate the knowledge gained across different modules and to apply this in the context of a more complex development project (e.g., a project solving real challenges faced by the industry).

Outside of teaching, our student societies organise social and other activities such as hackathons and river cruises so there is lots to get involved with.

Teaching
We use lectures, seminars, and group tutorials to deliver most of the modules on the course. We often use a flipped classroom approach that creates opportunities for active learning engagement and interaction with world-class experts. You will also be expected to undertake a significant amount of independent study. Typically, one credit equates to 10 hours of work, e.g. ,150 hours work for a 15-credit module. These hours cover every aspect of the module, including independent study.

Assessment
Your performance will be assessed through a combination of coursework and written/practical examinations. Forms of assessment may typically include written and computer-based exams, coursework, oral presentations, in-class tests, and an individual project dissertation.

Regulating body
King's College London is regulated by the Office for Students.

Course structure

Courses are divided into modules. The BSc runs over the duration of three years. Students on this course take modules equivalent to 120 credits per year, totalling 360 credits.

Year 1 – Required Modules

You are required to take:

- Introduction to Professional Practice (0 credits)
- Programming Practice & Applications (30 credits)
- Computer Systems (15 credits)
- Foundations of Computing 1 (15 credits)
- Data Structures (15 credits)
- Database Systems (15 credits)
- Introduction to Software Engineering (15 credits)
- Elementary Logic with Applications (15 credits)

Year 2 – Required Modules

You are required to take:

- Practical Experiences of Programming (15 credits)
- Introduction to Artificial Intelligence (15 credits)
- Foundations of Computing 2 (15 credits)
- Operating Systems & Concurrency (15 credits)
- Software Engineering Group Project (30 credits)

Year 2 – Optional Modules

In addition, you are required to take 30 credits from a range of optional modules, which may typically include:

One 15 credit module from:

- Internet Systems (15 credits)
- Introduction to Robotics (15 credits)

One 15 credit module from:

- Programming Language Design Paradigms (15 credits)
- Signals and Systems (15 credits)

Year 3 – Required Modules

You are required to take:

- Individual Project (30 credits)

Year 3 – Optional Modules
In addition, you are required to take 90 credits from a range of optional modules that may typically include: • Cryptography (15 credits) • Formal Verification (15 credits) • Computational Models (15 credits) • Software Architecture & Design (15 credits) • Information Security (15 credits) • Optimization Methods (15 credits) • Compilers & Formal Languages (15 credits) • Human-Computer Interaction (15 credits) • Model-Driven Engineering (15 credits) • Machine Learning (15 credits) • Data Science (15 credits) • Distributed Systems (15 credits) • Software Measurement and Testing (15 credits) The following specialised award title is available for students, subject to the combination of modules taken in the final year: • Software Engineering

Year 3 – Computer Science with a Year Abroad
Students who have transferred to the year abroad programme will spend it studying at one of our partner institutions before returning to King's to complete their studies. They will then take the modules listed above for year 3 in their fourth year.
King's College London reviews the modules offered on a regular basis to provide up-to-date, innovative and relevant programmes of study. Therefore, modules offered may change. We suggest you keep an eye on the course finder on our website for updates.

Location

We will use a delivery method that will ensure students have a rich, exciting experience from the start. Face to face teaching will be complemented and supported with innovative technology so that students also experience elements of digital learning and assessment. The majority of learning for this degree takes place at the King's College London Strand Campus, with occasional lectures and practical sessions taking place at the Waterloo Campus. Please note that locations are determined by where each module is taught and may vary depending on the optional modules you select.

Career Prospects

Completing a Computer Science degree opens the door to a wide range of job opportunities for our graduates. Typical profiles include software engineer, software architect, programming-language-specific developer, security engineer, and database engineer. A suggestion of the core skills required for such roles (that our Computer Science programmes address) are below:

Software Architect

- Make high-level decisions about the structure and organisation of software.
- A working knowledge of modern libraries, frameworks, and coding standards.
- Work closely with and lead a team of developers to see through planning, implementation, and maintenance of large software projects.

Algorithms and Optimisation

- Analysis and benchmarking the performance of software.
- Proficient in a range of programming languages, programming paradigms, and front-end technologies.
- Be familiar with commonly used algorithms and the main algorithmic techniques for optimisation of code with respect to time and resource use.

Security Engineer

- Critically assess security needs and capabilities.
- Design and implementation of security policies.
- Knowledge of key security protocols for encryption, key-establishment, and cipher use.

Systems Engineer

- Designing and analysing modern hardware, real-time systems, and embedded systems.
- Understanding of protocols and languages used in systems communication.
- Capable of systems-level programming.

Data Engineer

- Data analysis of complex and big data.
- Use of languages, tool, and frameworks for storing, preparing, and managing data.
- Presenting and visualising data.
- Understanding of bias and ethical issues around data use.

Theory and Logic

- Use logics for modelling and reasoning.
- Formal software validation and verification.
- Computational models and complexity

The Careers Service run tailored sessions for Informatics students and a careers programme which includes skills sessions and visits from top employers. Our graduates go on to successful careers in a wide range of organisations including banking, finance, management, and the major software houses, where they work mainly on analysis, design, implementation and maintenance of software applications and systems. Alternatively, many of our graduates choose further study.

Fees and Funding

Full time tuition fees
The tuition fees for the 2043-25 academic year are available on the course web page.
Please note that the tuition fees for subsequent years of study may be subject to increases in line with King's terms and conditions.

Additional costs/expenses
If you choose the study abroad option with one of King's partner universities, you will not be charged tuition fees by the host university (although some partners do charge a small administration fee for applying). Please see the Study Abroad webpages for details of the relevant partner universities.

King's will continue to invoice for a proportion of King's tuition fees. At present these are as follows:
- Home students studying for a semester abroad will receive an invoice for £6,000 for King's tuition fees for the year.
- Overseas students studying for a semester abroad will receive an invoice for two thirds of the King's tuition fees for the year.

The OFS cap for compulsory or optional year abroad it is £1385

NB: EU students will be liable for the same study abroad tuition fees as overseas students in 2024/25

You should also budget to pay for the associated subsistence costs, such as travel, visas, accommodation and food as well as any vaccination/immunisation required by the country to which you are travelling. In addition to tuition fees, you can also expect to pay for:

- books if you choose to buy your own copies
- clothing for optional course related events and competitions
- library fees and fines
- personal photocopies
- printing course handouts
- society membership fees
- stationery
- graduation costs
- travel costs around London and between campuses

Disclaimer

Although this PDF was up-to-date at the time it was produced, please make sure you check our website or contact us directly for the very latest information before you commit yourself to any of our courses: kcl.ac.uk/study.

Contact us

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