



**UNIVERSITY
OF LONDON**

Undergraduate programme in

Computer Science 2020

Your future is at your fingertips

Academic direction by

Goldsmiths
UNIVERSITY OF LONDON

Find your future at: london.ac.uk/computer-science



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Key dates

Applications open
20 May 2020

Applications close
7 September 2020

Registration closes
21 September 2020

Course starts
October 2020

A University of London degree from anywhere in the world

1 Career opportunities

Enhance your computing, analytical and problem-solving skills, using and developing emerging technology – focusing on your future.

2 Quality

Gain a world-class University of London degree. Choose from a suite of pioneering BSc Computer Science qualifications, which have been created by Goldsmiths, University of London, one of the UK's most innovative universities in the Computer Science field and a top 20 UK computing research institution.

3 Learn anywhere

We offer you the flexibility to fit your studies around your working life. If you need to travel, you can take your studies with you.

4 Tutor support

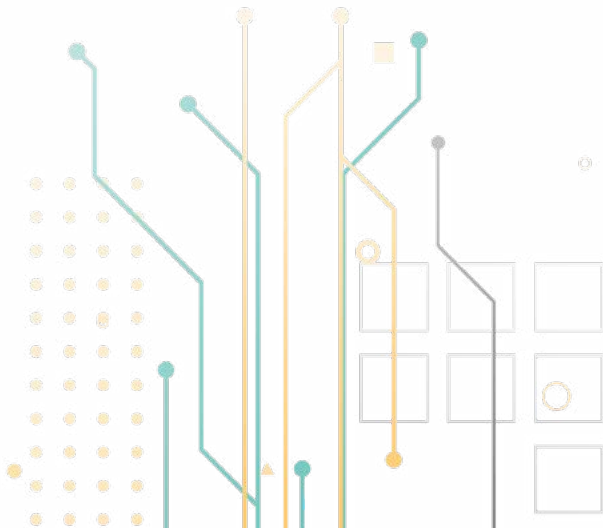
All students receive tutor guidance and feedback while studying for one of the BSc Computer Science degrees. If you register at one of our Recognised Teaching Centres you'll attend face-to-face classes and additional support; if you're an online learner, you'll join a virtual tutor group.

5 A mark of excellence

The University of London's distinguished history of distance learning dates back to 1858. You'll gain a prestigious qualification that is recognised worldwide.

6 Join the World Class

When you graduate, you become part of our global network of influential alumni, which includes leaders in industry and Nobel Prize winners.



Your future is at your fingertips

The BSc Computer Science from the University of London gives you the skills to achieve your career goals. Our degrees use creative interactive approaches to provide immersive learning experiences that will help you build the technical and transferable skills you need for a fulfilling career.

This distance learning degree is defined by emerging technology – it isn't bound by lecture theatres or computer labs. You will study interactively through the Coursera online learning platform, joining a global network of students. However, you will not be expected to learn on your own. You'll be part of a learning group supported by professional computing tutors, either at a recognised teaching centre or online.

You will learn from experts in computing. Their knowledge is drawn from real-life experience across a wide range of regions and industries.

A trusted name in global education

Founded in 1836, the University of London is one of the oldest and most prestigious universities in the UK. In 1858, we made our degrees available to study anywhere in the world. We now have 50,000 students in more than 180 countries.

Among our former students are seven Nobel Prize winners, including Nelson Mandela and Charles Kao, a pioneer in the development of fibre optics.

London as an academic base

London is home to some of the world's most innovative and entrepreneurial companies; over a third of all European billion-dollar start-ups are based in the UK. Many creative tech giants, including Facebook and Google, have offices in London.

This suite of BSc Computer Science degrees draws upon the city's creative and technological pedigree. You will be equipped with skills that are at the cutting edge of the industry, wherever you are in the world.

In your final year, you have the opportunity to transfer and study on campus at Goldsmiths, University of London.



50,000
students in over
180
countries

“Goldsmiths computing is about creativity. We are inspired by the fantastic art and music that surrounds us and we try to infuse this into our computing practice. Students of this course will not only be able to program and work logically to create solutions to problems – they will be able to try out their own ideas and express themselves creatively.”

Dr Sarah Wiseman

Co-author of the Web Development module



Goldsmiths, University of London

The academic content for the BSc Computer Science degrees has been developed by the Department of Computing at Goldsmiths, one of the UK's top creative universities.

Founded in 1891, Goldsmiths is world-renowned for teaching and research in creative, cultural and computational disciplines. Goldsmiths encourages students to explore ideas, challenge boundaries, investigate fresh ways of thinking, and stretch themselves intellectually and creatively. The Department of Computing at Goldsmiths is driven by a view of Computer Science that captures this spirit.

Goldsmiths believes that studying Computer Science is learning by doing and experimenting. The Department uses a hands-on, project-based style of teaching for a range of topics from computer and data science all the way through to art, music, social science and journalism.

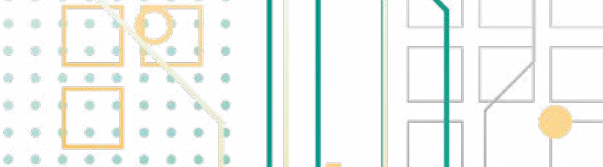
This ethos has created highly interactive degrees that make use of the latest technology and education. You will learn from experts in computing, whose experience spans many regions and industries.

Besides Computer Science, Goldsmiths' Department of Computing research and teaching also covers an array of topics including computational art, virtual reality, computer music, digital sociology and education technology.

Founded in

1891





“We are excited to be offering an entirely new Computer Science degree that is specifically designed to address the challenges of the present and future workplace. Our approach is to encourage creative thinking and novel applications in the hot areas of computing such as machine learning and artificial intelligence, games and virtual reality and data science.”

Dr Matthew Yee-King

Programme Director,
BSc Computer Science degrees



Collaboration with Coursera

We are extremely proud to be the first university chosen by Coursera as it embarks on a collaboration to offer a suite of undergraduate degrees through online distance learning

The University of London has more than 40 Massive Open Online Courses (MOOCs) on the Coursera platform, generating over 1.3 million Coursera learner enrolments.

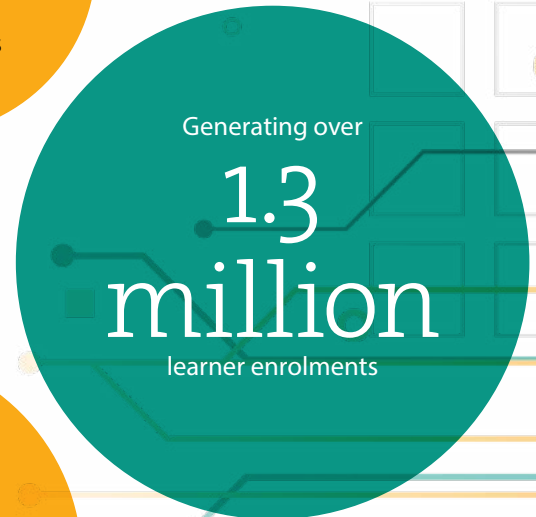
Coursera has 31 million registered learners spread over 2,600 courses and 236 specialisations. They've partnered up with some of the world's top universities, which include NYU, Princeton, Stanford, Duke, National Taiwan University and Shanghai Jiao Tong.

Coursera's courses are used by leading brands like Tata, InfoSys, L'Oreal to train and update their staff. You can read more about Coursera at: about.coursera.org

Are you affected by US-imposed restrictions?

United States export control regulations prevent Coursera from offering services and content to users in certain countries or regions. More information about which countries or regions are affected can be found at: bit.ly/intl-restrictions

Coursera must enforce this restriction in order to remain in compliance with US law and, for that reason, we advise that all learners check this information before applying to the programme.



"Welcome to Coursera's first Bachelor's degree, a unique collaboration between the University of London, the world's oldest provider of distance learning, Goldsmiths, University of London and Coursera, the world's largest online learning platform.

In 2011, an experiment at Stanford University took three courses and made them available online, enabling anyone, anywhere to learn this unique content. When hundreds of thousands of learners signed up, it demonstrated the critical need for people to have access to a truly high-quality education.

As it happens, all three of these courses were in computer science; this is not surprising, since the demand for qualified computer science professionals is enormous. A computer science education opens multiple opportunities for its graduates, across many diverse areas. Like Coursera's earliest courses, we would like anyone, anywhere to have access to these opportunities.

This new degree, an online Computer Science Bachelor's degree offered by Goldsmiths and the University of London is designed to equip students with in-demand computing skills and abilities to solve complex problems, all while nurturing their innovation and creativity. This degree will transform lives around the world. Please join us in taking this journey."

Daphne Koller
Co-founder, Coursera



Online and flexible learning explained

You can choose to start the degree in either April or October

The BSc Computer Science degrees can be completed in three to six years. Each module is studied over 22 weeks and requires an average of five to six study hours per week. Modules run up to twice each year (subject to demand). You can study up to four new modules at a time (or two plus your Final Project).

- 1 Decide when you want to enrol, either in April or October.
- 2 Then choose whether you want to enrol:
as a web-supported learner – this means you'll join an online group, where your tutor will provide support via discussion groups
or
with a Recognised Teaching Centre (where available). You'll be able to attend face-to-face classes and interact with other students on your course.

Guaranteed tutor support

All students receive tutor support and feedback while studying for one of our BSc Computer Science degrees. Tutors introduce the modules, respond to queries and provide guidance on the assessments. If you register for support at one of our Recognised Teaching Centres, you'll attend face-to-face classes and receive tutor support.

If you register as a web-supported learner, your tutor will provide support through the Coursera

platform, where you'll have access to peer discussion forums and learning activities.

For details about Recognised Teaching Centres please visit: bit.ly/recognised-centres

Assessment

The degree is assessed through coursework, portfolios and written examinations. Your final grade for each module is based on a mixture of these assessments (e.g. 50 per cent coursework, 50 per cent examination). For further information on module outlines, visit: bit.ly/Computer-Sci-Modules

While you're studying each module, you'll receive feedback from the University of London about your assessments and achievements so you can see how you're progressing. You'll also be given a record of your successes to keep you on track. You can sit your examinations at any of our approved centres worldwide. For more details, see: london.ac.uk/exams

Celebrate your graduation

After completing your degree, you'll get a University of London diploma and an invitation to the annual graduation ceremony in London. The event is usually headed by the University of London's Vice-Chancellor or its Chancellor, HRH the Princess Royal.



Take your career to the next level

We know it's important to consider your future career before you embark on a degree. The BSc Computer Science degree allows you to focus on industry specialisms that help you to achieve your career goal. You can choose from the following specialisms:

BSc Computer Science

The BSc Computer Science will allow you to develop a wide and practical skillset in computing with strong programming and mathematics skills, as well as softer skills in project management, presentation and teamwork. You will also have a portfolio of work that you can present to potential employers. Depending on the specialisms you choose in the final stage of the degree, you can direct your learning towards particular areas of interest such as machine learning, web development, data science and video games.

With the BSc Computer Science, you will be qualified for a range of computational and mathematical jobs in the creative industries, business, finance, education, medicine engineering and science. Typical job titles include application programmer, software engineer, creative coder, video game developer and systems analyst.

BSc Computer Science (Data Science)

Data science is a significant subfield in computer science that has seen rapid growth in recent years as companies and institutions have begun to gather data at scale across many sectors. Data science has many applications ranging from medicine to climate science and business analytics.

With the BSc Computer Science (Data Science), you'll be able to apply for a range of data-intensive technical jobs in sectors such as business, finance, medicine, education, engineering and science as well as in the creative industries. Typical job titles include data scientist, data visualisation engineer, business data analyst, data manager and data engineer.

BSc Computer Science (Games Development)

Video games are a critical application area for computer science, and the games industry forms a significant part of the creative economy. It is a complicated subject, drawing on other areas such as computer graphics, interaction design and artificial intelligence.

With the BSc Computer Science (Games Development), you will be able to apply for a range of jobs in the creative industries, especially in the video games industry. Typical job titles include game designer, video game tester and video game programmer.

BSc Computer Science (Machine Learning and Artificial Intelligence)

Machine learning (ML) provides a means for computer systems to extract useful information from data. These techniques are widely used in the technology industry for a variety of applications, for example recommending music and products to people, identifying faces in photos and predicting trends in financial markets.

With the BSc Computer Science (Machine Learning and Artificial Intelligence), you will be able to apply for a range of technical, problem-solving jobs in a rapidly growing area. Companies and institutions are applying ML and AI (artificial intelligence) to a wide range of problems in business, finance, medicine, education, video games, engineering and science as well as new application areas such as music and other creative work. A typical job title is machine learning engineer.

BSc Computer Science (Physical Computing and the Internet of Things)

Physical computing involves the creation of hardware devices that can sense and act in the real world. Physical computing techniques underpin a wide range of contemporary technology trends such as the Internet of Things, the quantified self and smart homes. There are many applications for physical computing, for example in creative arts, museums, ubiquitous and embedded computing, scientific sensing, robotics and engineering control systems.

With the BSc Computer Science (Physical Computing and the Internet of Things), you'll be able to apply for jobs in a rapidly growing and exciting area, which is finding applications across different sectors. Typical job titles include Internet of Things engineer, creative technologist and embedded software engineer.

BSc Computer Science (User Experience)

User experience design or UX has grown out of the field of Human-Computer Interaction (HCI), which is about how to design computer systems for use by people. HCI is a major subfield of computer science, and it informs the visual design and workflow of computer systems we use every day. HCI draws on a range of hard and soft skills and is a naturally cross-disciplinary subject.

With the BSc Computer Science (User Experience), you'll be able to apply for jobs that involve a flair for design and engagement with end users in a range of sectors, wherever there is a need for effective user interface design. Typical job titles include UX engineer, UX designer and user interface designer.

BSc Computer Science (Web and Mobile Development)

Web and mobile development are critical application areas for computer science. Many of the largest technology companies maintain large-scale web applications, providing services such as social media, search, advertising and video and audio streaming. Mobile application development has become a major part of the software industry over the last decade, with established, as well as new, companies developing thousands of mobile games and utilities.

With the BSc Computer Science (Web and Mobile Development), you will be qualified for jobs involving the development of web and mobile technology such as websites and applications for smartphones and tablets. Typical job titles include mobile application developer, mobile software engineer, front-end engineer, full stack developer and back-end developer.

BSc Computer Science (Virtual Reality)

Virtual reality (VR) involves the creation of immersive, simulated environments using computer systems. Recent technology advances have made it possible to create high fidelity, high immersion virtual realities, which people can access with consumer hardware. VR has many application areas, including entertainment, education and military.

With the BSc Computer Science (Virtual Reality), you'll be qualified for exciting jobs in an emerging area that spans sectors such as the creative industries, video games and education and training. Typical job titles are VR developer, environment artist, VR architect and augmented reality engineer.

“From game-based learning environments which teach code fundamentals to street magic demos which illustrate maths concepts – in creating this degree we’ve brought together the most innovative aspects of our teaching at Goldsmiths. We’ve distilled our many years of experience in computing pedagogy into this new and exciting online format.”

Dr Simon Katan

Co-author of the Introduction to Programming I and II modules



Degree structure

Level 4

Eight Compulsory Modules

Introduction to Programming I*
Introduction to Programming II
Numerical Mathematics
Discrete Mathematics
Fundamentals of Computer Science
How Computers Work
Algorithms and Data Structures I
Web Development

* Core Module

Level 5

Eight Compulsory Modules

Object-oriented Programming
Software Design and Development
Programming with Data
Agile Software Projects
Computer Security
Graphics Programming
Algorithms and Data Structures II
Databases, Networks and the Web

▶ For further details on programme specifications and module outlines, please see: bit.ly/Computer-Sci-Modules

Level

6

Six Modules +
The Final Project

BSc Computer Science

Six Elective Modules from any of
the specialisms

The Final Project

BSc Computer Science (Data Science)

Data Science*

Databases and Advanced
Data Techniques*

Machine Learning and
Neural Networks*

Advanced Web Development*

Natural Language Processing*

One elective from any
other specialism

The Final Project

BSc Computer Science (Games Development)

Artificial Intelligence*

Virtual Reality*

Games Development*

3D Graphics and Animation*

Interaction Design*

One elective from any
other specialism

The Final Project

BSc Computer Science (Machine Learning and Artificial Intelligence)

Databases and Advanced
Data Techniques*

Machine Learning and
Neural Networks*

Artificial Intelligence*

Intelligent Signal Processing*

Natural Language Processing*

One elective from any
other specialism

The Final Project

BSc Computer Science (Physical Computing and the Internet of Things)

Databases and Advanced
Data Techniques*

Advanced Web Development*

Physical Computing and the
Internet of Things*

Interaction Design*

Intelligent Signal Processing*

One elective from any
other specialism

The Final Project

BSc Computer Science (User Experience)

Virtual Reality*

Advanced Web Development*

Physical Computing and the
Internet of Things*

Mobile Development*

Interaction Design*

One elective from any
other specialism

The Final Project

BSc Computer Science (Virtual Reality)

Virtual Reality*

Games Development*

3D Graphics and Animation*

Mobile Development*

Interaction Design*

One elective from any
other specialism

The Final Project

BSc Computer Science (Web and Mobile Development)

Databases and Advanced Data
Techniques*

Advanced Web Development*

3D Graphics and Animation*

Mobile Development*

Interaction Design*

One elective from any
other specialism

The Final Project

* Core Modules

Entry requirements

An accessible programme for Computer Scientists

To register for one of the suite of BSc Computer Science degrees, you will need to satisfy our entry requirements.

We welcome qualifications from across the world, which are equivalent to UK GCSEs and A levels. Certain minimum requirements are needed in mathematics and English language, for further information visit: london.ac.uk/computer-science

Performance-based admission

This degree is also open to those with non-traditional qualifications. If you successfully complete two specified Level 4 modules, you can automatically progress with the credit obtained onto the full BSc degree. Further details are available at: london.ac.uk/computer-science

Recognition of prior learning

If you hold professional or academic qualifications that compare closely with the BSc Computer Science modules, we may be able to accredit them as prior learning, so you do not have to study those module(s) to complete the degree.

Accessibility

The University of London welcomes applications from disabled students and/or those who have access requirements. Due to the highly interactive and interoperability of this programme, some students may find some activities challenging.

If you're disabled and/or have access requirements, we will make every reasonable effort to meet your needs. This may include making access arrangements for examinations such as a separate room or special aids. If you would like to tell us about your disability and/or request access arrangements, please complete the relevant section of the application form or contact the Inclusive Practice Manager at: special.arrangements@london.ac.uk

Computer requirements

To get the most out of this degree, your computer needs to reach certain requirements. These can be found in the 'Programme Specification' section at: london.ac.uk/computer-science

Fees and funding

Gain a prestigious University of London qualification at outstanding value

The degree fee varies depending on a number of factors, which include:

- where you live
- whether you receive online or face-to-face tutor support.

Our module fees include access to study materials and all coursework submissions. However, you will be required to pay an additional fee directly to your local examination centre when sitting written examinations.

The total fee payable to the University of London for 2020–2021 will be published on our website once confirmed. On average, fees incur a five per cent yearly increase. For the latest information on programme fees, please visit: london.ac.uk/fees

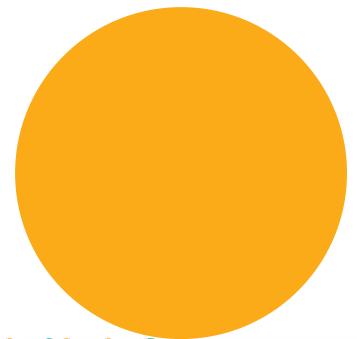
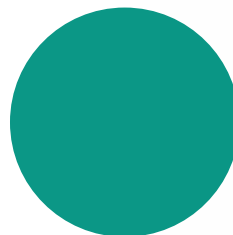
Please note: student fees shown on our website are net of any local VAT, Goods and Services Tax (GST) or any other sales tax payable by the student in their country of residence. Where the University is required to add VAT, GST or any other sales tax at the local statutory rate, this will be added to the fees shown during the payment process. For students resident in the UK, our fees are exempt from VAT.

Undergraduate loans

Information regarding undergraduate loans can be obtained at: london.ac.uk/computer-science

Employer sponsorship

If you are already in employment and apply to do this degree, your employer may be willing to help with the cost. Visit: london.ac.uk/employers for information about the University of London and the benefits of sponsorship.



Your University of London qualification

A University of London degree

Undergraduate degrees of the University of London are awarded with Honours. The award certificate will indicate the level of the academic performance (Honours) achieved by classifying the award. The classification of the degree will be based on the ratified marks from the completed assessments. The standard classification system for bachelor's degrees with Honours is:

- First Class
- Upper Second Class
- Lower Second Class
- Third Class

A Pass Degree or Ordinary Degree is a degree without Honours. Specific rules for the classification of awards are given in the Programme Regulations, under Scheme of Award.

About your qualification

When you graduate you will receive your Final Diploma and a Diploma Supplement. The Final Diploma states that:

- you were awarded a University of London degree, diploma or certificate
- Goldsmiths, University of London, was your education provider
- it also includes the University of London crest and the Vice-Chancellor's signature.

If for any reason you're unable to finish your BSc degree, you may be eligible for an exit award. If you have at least 120 credits, you'll be awarded a Certificate of Higher Education in Computer Science. Alternatively, if you achieve 240 credits or more, with a minimum of 90 credits at Level 5, you'll be awarded a Diploma of Higher Education in Computer Science.

The Diploma Supplement includes the following information:

- The award you successfully completed.
- Your transcript of modules taken, marks achieved and overall classification.
- The role of Goldsmiths, University of London.

Although our qualifications are recognised across the globe, some country authorities and regulators may not recognise them. We advise that you check on the recognition status in your country before enrolling.



The information contained in this leaflet was correct at the date of publication but may be subject to change. The University does not intend by publication or distribution of this leaflet to create any contractual or other legal relation with applicants, registered students, their advisers or any other persons. For the most up-to-date information, please visit our website.

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For further information on the range of programmes we offer, please visit our website or contact us at:

The Student Advice Centre
University of London
Senate House
Malet Street
London WC1E 7HU
United Kingdom

Telephone +44 (0)20 7862 8360
sid.london.ac.uk



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