



UNIVERSITY
OF LONDON

2024

Undergraduate programmes in

Computer Science

With academic
direction from:

Goldsmiths
UNIVERSITY OF LONDON

london.ac.uk/computer-science

World class. Worldwide.

Join the World Class

1 Career opportunities

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

2 Quality of learning

Gain a world-class University of London degree. Choose from a suite of pioneering BSc Computer Science qualifications, created by Goldsmiths, University of London, one of the UK's most innovative universities in the Computer Science field.

3 Learn anywhere

We offer you the flexibility to fit your studies around your working life.

4 Tutor support

You'll 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 for additional support; if you're an online learner, you'll join a virtual tutor group.

5 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.



“In a fast changing environment of worldwide access to higher education, a University of London degree continues to offer a guarantee of quality, value and intellectual rigour.”

Professor Wendy Thomson
Vice-Chancellor,
University of London

Your prestigious University of London qualification

About your qualification

When you graduate with a degree, diploma or certificate from the University of London you will receive two important documents – your Final Diploma (the certificate you receive on graduation) and a Diploma Supplement.

The Final Diploma

- Indicates that you were registered with the University of London and awarded a University of London degree, diploma or certificate.
- Gives the name of Goldsmiths, University of London as the federation member that developed the syllabus, curriculum and provided assessment.
- Features the University of London crest and the Vice-Chancellor's signature.

The Diploma Supplement

- Describes the nature, level and content of the programme you successfully completed.
- Includes the transcript of courses taken, marks achieved and overall classification.
- States the role of Goldsmiths, University of London and the method of study.



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Key dates

Applications open:

11 June 2024

Applications close:

16 September 2024

Registration closes:

23 September 2024

Course starts:

October 2024

Your future is at your fingertips

The Computer Science degree 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.

A unique approach to learning

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 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 more than 40,000 students in more than 190 countries.

Among our former students are six 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 billion-dollar European 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.

You have the opportunity to transfer and study on campus at Goldsmiths, University of London when studying Level 5 and/or Level 6 of the programme. For more information, visit: bit.ly/CompSci-transfer



Professor Matthew Yee-King

Programme Director,
BSc Computer Science degrees

'Join our BSc Computer Science degree and dive into a world where our creative, hands-on teaching meets the hottest topics in technology. Adapt to the dynamic challenges and opportunities in AI, video games, data science and more. Thrive within our vibrant community, and prepare yourself for a future in the rapidly evolving tech labour market. Shape your tomorrow, today.'

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.

World-renowned teaching

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.

Interactive degrees

Goldsmiths believes that studying computer science is learning by doing and experimenting. The department uses a 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.



Mary-Brenda Akoda

BSc Computer Science graduate

'My fellow students came from all over the world and from diverse backgrounds. We supported one another and even developed an online learning hub for incoming and current students. It was a truly world-class cohort. Furthermore, with the knowledge gained from foundational modules such as Algorithms and Data Structures and Object-Oriented Programming, combined with project experiences and the resulting strong portfolio, I successfully secured my first software engineering internship at Microsoft.'

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 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
- and it 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.

In some countries, qualifications earned by distance and flexible learning may not be recognised by certain authorities or regulators for the purposes of public sector employment or further study. We advise you to explore the local recognition status before your register.

Collaboration with Coursera

An academic first

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 60 Massive Open Online Courses (MOOCs) on the Coursera platform, generating over 4 million Coursera learner enrolments.

Coursera has 142 million registered learners spread over 6,900 courses,

Professional Certificates and degrees. They've partnered with some of the world's top universities, which include NYU, Princeton, Stanford, Duke, National Taiwan University and Shanghai Jiao Tong.

More than 7,000 campuses, businesses, and governments have come to Coursera to access world-class learning – anytime, anywhere. Coursera's courses are used by leading brands like Tata, InfoSys, and L'Oréal to train and update their staff. You can read more about Coursera at: about.coursera.org

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

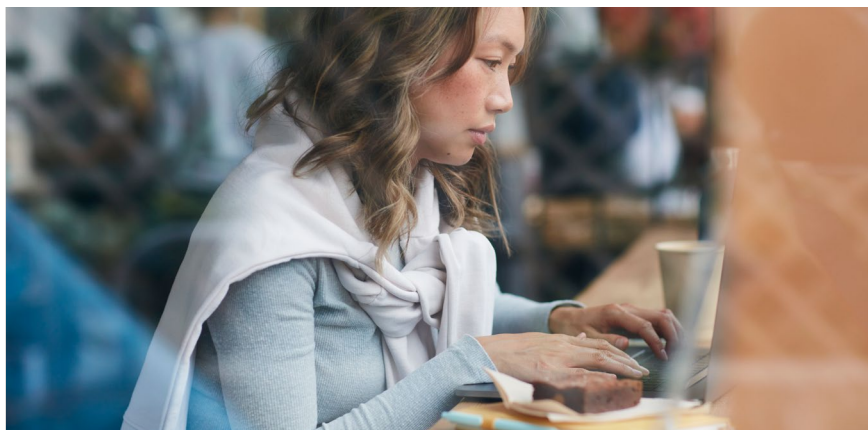
oldest provider of distance learning, Goldsmiths, University of London and Coursera, the world's largest online learning platform. In 2011, an experiment at Stanford University took three courses and made

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 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



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).

You can start the degree in either April or October and can choose whether you want to enrol:

- as a web-supported learner **OR**
- with a Recognised Teaching Centre (where available).

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

For further information on module outlines, visit: bit.ly/Computer-Sci-Modules

Assessment

The format and mode of assessment for this programme may change due to events or circumstances beyond our control. Students will be informed of their assessment arrangements via their Virtual Learning Environment (VLE), once confirmed. For the latest information on examinations, please visit: 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.

Computer Science programmes

Degree programmes

Our suite of online BSc Computer Science degrees prepares you for technology jobs of the future. We offer seven specialisms to build on your interests and develop the skills you need for a fulfilling career.

You can choose to register on a specialist award if you want to focus your studies on a particular area of computer science. To specialise, you must take five compulsory specialist modules and an elective from any specialism. You will be asked to select your preferred specialism when you register.

To gain a BSc Computer Science degree, you must complete eight compulsory modules at Level 4; eight compulsory modules at Level 5; six elective modules from Level 6 and complete a Final Project.

Once you begin a module it is generally expected that you will complete it in the six-month session. Each module presents about 150 hours of study. For each module, a full-time student would be expected to study five to six hours a week. At this pace of study, the BSc could be completed within a minimum period of three years. You have up to six years to complete so could choose to study up to four new modules a year.

Graduate Diplomas in Computer Science

These programmes are designed to give you a strong foundation in computer science and specialist knowledge in areas including: artificial intelligence, user experience, virtual reality and web development. They are highly valued by those who want to acquire university level education to enhance their employment prospects or to proceed to a postgraduate degree or other advanced qualification.

For the Graduate Diploma, you will undertake a substantial practical project which will help you gain technical skills while building up your potential as a creative problem solver.

The Graduate Diploma is made up of six 15-credit modules in addition to a 30-credit final project module. For each module, a full-time student would be expected to study 10-12 hours a week. At this pace of study, the Graduate Diploma could be completed within a minimum period of one year. You have up to five years to complete so could choose to study only one or two modules a year.

For more information, visit: **london.ac.uk/graddips-computer-science**

Graduate Certificates in Computer Science

These programmes are bite-sized credentials designed to help you quickly upskill, enabling you to 'deep dive' into a new and emerging area of computer science and equipping you with skills and knowledge for emerging job roles in this area.

The Graduate Certificate is made up of four 15-credit modules. For each module, a full-time student would be expected to study 10-12 hours a week. At this pace of study, the Graduate Certificate could be completed within a minimum period of six months. You have up to five years to complete so could choose to study only one or two modules a year.

For more information, visit: **london.ac.uk/gradcerts-computer-science**

Programme specialisms



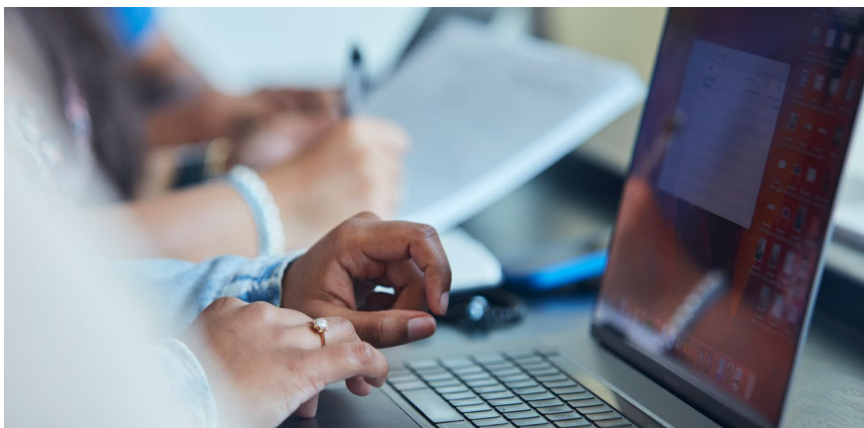
We know it's important to consider your future career before you embark on a degree. The BSc Computer Science programmes allow you to focus on industry specialisms that help you to achieve your career goal.

For the BSc degree, Graduate Diploma and Graduate Certificate, 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 modules 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 (AI).

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 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 (UX) design 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.

A Graduate Certificate and Graduate Diploma are available in Mobile Development or Web Development. For further information visit: london.ac.uk/gradcerts-computer-science and london.ac.uk/graddips-computer-science

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 the 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.



Dr Darpan Triboan

Lecturer in Computing,
Goldsmiths, University of London

'The computer science industry, in general, is fast-moving and this BSc Computer Science programme offers the most relevant and up-to-date knowledge, skills and diverse expertise. The material provided for teaching and learning is tailored to diverse learners and creates a strong foundation for the student's future careers. Students are introduced to broad-ranging state-of-the-art computer science concepts and technologies, allowing them to explore and specialise in the future.'

Degree structure

Level 4

Eight compulsory modules

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

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
Professional Practice for Computer Scientists [‡]

Level 6

Six modules plus 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

[‡] Last available to study in the October 2024 session. From April 2025 this module will be replaced by Professional Practice for Computer Scientists.

[†] From October 2025 this module will be changed to Cyber Security.

[‡] Available from April 2025.

* Core modules.

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

A Graduate Certificate and Graduate Diploma are available in Mobile Development or Web Development. For further information visit: london.ac.uk/graddips-computer-science and london.ac.uk/gradcerts-computer-science

*Core modules



Simon Horton

BSc Computer Science,
specialism in machine learning
and artificial intelligence

‘My favourite thing about the programme was the graphics programming module and the diverse set of languages that we learned. I also enjoyed having access to the library for much deeper and further studies on subjects.

The Slack platform was very engaging, there’s a very active community of students on there that are extremely helpful, helping anyone with queries and questions.’

Entry requirements and further information

Entry requirements

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

The University of London welcomes qualifications from across the world, which are equivalent to UK GCSEs and A levels. Certain minimum standards are needed in mathematics and English language; for further information visit: london.ac.uk/computer-science

The BSc 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. For more information visit: bit.ly/CompSci_Admissions

Accessibility

We welcome applications from disabled students and/or those who have access requirements. Due to the interactivity 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 meet certain requirements. These can be found in the 'Programme Specification' section at: london.ac.uk/computer-science

Fees

The degree fee varies depending on:

- 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.

The total fee payable to the University of London for 2024–2025 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.

Funding

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

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.



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For further information on the range of programmes we offer, please visit our website (london.ac.uk) or contact us at:

The Student Advice Centre

University of London
Senate House, Malet Street
London WC1E 7HU
United Kingdom

Online enquiries: sid.london.ac.uk



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