Postgraduate programmes in

Data Science

2020

Academic direction by

Goldsmiths

UNIVERSITY OF LONDON

london.ac.uk/data-science
A University of London degree from anywhere in the world

Apply your knowledge to real-world data

Goldsmiths, University of London

Online and flexible learning explained

Take your career to the next level

Degree structures

Entry requirements

Fees and further information

Key dates

April intake:

Applications open
4 November 2019

Applications close
2 March 2020

Registration closes
16 March 2020

A University of London degree from anywhere in the world
Gain the professional skills that are in demand by employers
Learn how to apply technology to real-world data science problems and gain an in-depth understanding of emerging technologies, statistical analysis and computational techniques. Acquire transferable skills that will help advance your career.

Choose from specialist pathways that fit your career aspirations
Students can choose to specialise in Artificial Intelligence or Financial Technology depending on their interests.

Flexible learning options
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.

Student support
All students will have access to the Virtual Learning Environment. If you register for support at one of our Recognised Teaching Centres, you will receive face-to-face classes and tutor support. If you’re a web-supported learner, you will join an online tutor group.

A mark of excellence
The University of London’s distinguished history of distance learning dates back to 1858. You’ll gain a prestigious qualification, respected by employers worldwide. The programme has been developed by Goldsmiths, University of London, one of the UK’s top institutions for innovation and creativity.

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.
Apply your knowledge to real-world data

Managing and analysing big data has become an essential part of modern finance, retail, marketing, social science, development and research, medicine and government.

This programme addresses the skills shortage of data scientists who can use data to drive improvements to organisational performance. Students will have the opportunity to build their professional portfolios through project work.

Gain highly valued skills

The MSc Data Science suite of programmes offers students skills which will help them not only in their current job but prepare them for their future career trajectory. This programme teaches the skills needed by data scientists to drive improvements to organisational performance. By combining the statistical and computational skills to generate insights, data can be used to enhance business delivery across a range of sectors. Students will learn the mathematical foundations of statistics, data mining and machine learning, and apply these to practical, real-world data.

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 of the creative tech giants, including Facebook and Google, have offices in London.

The MSc Data Science draws upon the city’s creative environment. You’ll be equipped with skills that will keep you up to date with the leading industry trends and innovations, wherever you are in the world.

The MSc Data Science has been developed by the University of London with academic direction by Goldsmiths, University of London, which offers a similar programme on campus.

The innovative online study method gives students the freedom, right from the start of their studies, to create their own software projects.

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 50,000 students in 180 countries.

Among our former students are seven Nobel Prize winners, including: Nelson Mandela, the eminent Caribbean writer, Derek Walcott and Charles Kao, a pioneer in the development of fibre optics.
The academic content for the postgraduate Data Science programmes 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.

The department uses a hands-on, project-based style of teaching for a range of topics, from data and computer science all the way through to art, music, the social sciences and journalism.

This ethos has created highly interactive degrees which make use of the latest technology within education. You will learn from experts in the field, whose experiences span many regions and industries.

Besides data 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.

'We are excited to be offering a unique Data Science degree that is specifically designed to address the challenges of the present and future workplace.

Data analytic techniques are evolving fast, new data is being produced at an unprecedented rate across the world and the tools we use to process it are becoming more intelligent. This programme will equip you with the necessary skills to become a leading data science specialist in our modern society. You will gain the theoretical and computational skills needed to extract insights from data and to conduct data analysis in a wide range of applications.'

Larisa Soldatova
Programme Director
Online and flexible learning explained

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

The MSc Data Science degree can be completed in up to five years or as soon as one year.* Each module is studied over 22 weeks and requires an average of five to seven study hours per week. You can study up to six new modules at a time (or four, 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
   – with a Recognised Teaching Centre (where available). You’ll be able to attend face-to-face classes and meet up with other students on your course.

*Subject to module availability.

A choice of pathways

You can register for the general Data Science pathway or choose from one of two specialist pathways in:

- Artificial Intelligence
- Financial Technology.

Guaranteed tutor support

All students receive tutor support and feedback while studying this programme. Tutors introduce the modules, respond to queries and provide guidance on the assessments. If you register as a web-supported learner, you will become a member of an online group, which is facilitated by a tutor who provides support via discussion groups and regular messages to keep you on track.
If you register for support at one of our Recognised Teaching Centres, you will be able to attend classes and benefit from tutor support.

For details about recognised centres, please visit: bit.ly/teaching-centres

Build up your qualifications

The flexible nature of the programme means that you can choose to study for an MSc, Postgraduate Diploma, or Postgraduate Certificate (for the general pathway only).

If you choose to register on the Postgraduate Certificate or one of the Postgraduate Diploma programmes, upon completion you may decide to progress to a higher award, a related Postgraduate Diploma or an MSc respectively.

Alternatively, if you register on an MSc, you can apply for a Postgraduate Certificate in Data Science or a related Postgraduate Diploma as you progress through your MSc studies and complete the required modules.

Assessment

For all programmes, each core, compulsory and optional module (apart from the Final Project) is summatively assessed by a coursework element (30 per cent) and a written examination element (70 per cent).

The Final Project is summatively assessed by a series of coursework submissions and an unseen final exam. Coursework accounts for 70 per cent of the final mark and the examination for 30 per cent of the final mark.

All coursework and projects are submitted through the Virtual Learning Environment (VLE), which can be accessed through the Student Portal. You can sit exams at any of our exam centres worldwide. For more details, see: bit.ly/UoL-ExamCentres

Celebrate your graduation

After successfully completing your degree, you will receive a University of London award and an invitation to the annual graduation ceremony in London. The event is usually headed by the University of London’s Vice-Chancellor or the 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. So, how will the MSc Data Science and its offer of focused specialisms help you to achieve your goals?

MSc Data Science

The MSc Data Science programme develops analytical and critical skills, providing students with the tools and competencies needed to intelligently interrogate numerical, textual and qualitative data. This includes extracting meaning from raw information and communicating the results of their investigations and their implications to stakeholders or other interested parties.

These skills can lead to a variety of careers with small and large technology firms, the biomedical research sector, the charitable and voluntary sector, and the public research sector.

Throughout the programme, you will learn the skills required to explain and critically assess machine learning and statistical data mining techniques, critically evaluate emerging data analysis technologies and analyse in depth how data analysis techniques can be applied to a range of interdisciplinary research areas, among other skills.

MSc Data Science and Artificial Intelligence

The MSc Data Science and Artificial Intelligence programme develops analytical and practical skills, providing successful students with the tools and competencies of intelligent data analysis for decision making and problem solving. This includes reporting results of their investigations and their implications to stakeholders or other interested parties. These skills lead to a variety of careers with leading technology firms, in robotics, the military, academia, and the public research sector.

MSc Data Science and Financial Technology

The MSc Data Science and Financial Technology programme develops analytical and practical skills, providing successful students with the tools and competencies needed to intelligently analyse financial data and modern financial markets; to evaluate and predict investment behaviour and investment decisions; and to communicate the results of their investigations and their implications to stakeholders or other interested parties. These skills lead to a variety of careers with employers from the financial sector, including financial planning, insurance, marketing and investment banking.

For further details on programme specifications and module outlines, please see: bit.ly/DataSci-modules
## Degree structures

### Data Science

#### MSc

<table>
<thead>
<tr>
<th>Four core modules:</th>
<th>Postgraduate Diploma</th>
<th>Postgraduate Certificate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics and Statistics for Data Science</td>
<td>Mathematics and Statistics for Data Science</td>
<td>Mathematics and Statistics for Data Science</td>
</tr>
<tr>
<td>Machine Learning</td>
<td>Machine Learning</td>
<td>Machine Learning</td>
</tr>
<tr>
<td>Data Programming in Python</td>
<td>Data Programming in Python</td>
<td>Data Programming in Python</td>
</tr>
<tr>
<td>Big Data Analysis</td>
<td>Big Data Analysis</td>
<td>Big Data Analysis</td>
</tr>
<tr>
<td><strong>Plus two compulsory modules:</strong></td>
<td><strong>Plus two compulsory modules:</strong></td>
<td><strong>Two core modules:</strong></td>
</tr>
<tr>
<td>Data Visualisation</td>
<td>Data Visualisation</td>
<td>Mathematics and Statistics for Data Science</td>
</tr>
<tr>
<td>Data Science Research Topics</td>
<td>Data Science Research Topics</td>
<td>Machine Learning</td>
</tr>
<tr>
<td><strong>Plus four optional modules from:</strong></td>
<td><strong>Plus two optional modules from:</strong></td>
<td>Data Programming in Python</td>
</tr>
<tr>
<td>Natural Language Processing</td>
<td>Natural Language Processing</td>
<td>Big Data Analysis</td>
</tr>
<tr>
<td>Social Networks and Graph Analysis</td>
<td>Social Networks and Graph Analysis</td>
<td><strong>Plus two optional modules from:</strong></td>
</tr>
<tr>
<td>Artificial Intelligence</td>
<td>Artificial Intelligence</td>
<td>Natural Language Processing</td>
</tr>
<tr>
<td>R for Data Science</td>
<td>R for Data Science</td>
<td>Social Networks and Graph Analysis</td>
</tr>
<tr>
<td>Neural Networks</td>
<td>Neural Networks</td>
<td>Artificial Intelligence</td>
</tr>
<tr>
<td>Blockchain Programming</td>
<td>Blockchain Programming</td>
<td>R for Data Science</td>
</tr>
<tr>
<td>Financial Data Modelling</td>
<td>Financial Data Modelling</td>
<td>Neural Networks</td>
</tr>
<tr>
<td><strong>Plus</strong></td>
<td><strong>Plus two optional modules from:</strong></td>
<td>Financial Data Modelling</td>
</tr>
<tr>
<td>Final Project in Data Science</td>
<td>Any core modules not already taken from the list above</td>
<td>Mathematics of Financial Markets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data Visualisation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data Science Research Topics</td>
</tr>
</tbody>
</table>

---

[london.ac.uk/data-science](http://london.ac.uk/data-science)
### Data Science and Artificial Intelligence

#### MSc

<table>
<thead>
<tr>
<th><strong>Four core modules:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics and Statistics for Data Science</td>
</tr>
<tr>
<td>Machine Learning</td>
</tr>
<tr>
<td>Data Programming in Python</td>
</tr>
<tr>
<td>Artificial Intelligence</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Plus three compulsory modules:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Big Data Analysis</td>
</tr>
<tr>
<td>Neural Networks</td>
</tr>
<tr>
<td>Data Science Research Topics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Plus three optional modules from:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Visualisation</td>
</tr>
<tr>
<td>Natural Language Processing</td>
</tr>
<tr>
<td>Social Networks and Graph Analysis</td>
</tr>
<tr>
<td>R for Data Science</td>
</tr>
<tr>
<td>Blockchain Programming</td>
</tr>
<tr>
<td>Financial Data Modelling</td>
</tr>
<tr>
<td>Mathematics of Financial Markets</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Plus</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Project in Data Science and Artificial Intelligence</td>
</tr>
</tbody>
</table>

#### Postgraduate Diploma

<table>
<thead>
<tr>
<th><strong>Four core modules:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics and Statistics for Data Science</td>
</tr>
<tr>
<td>Machine Learning</td>
</tr>
<tr>
<td>Data Programming in Python</td>
</tr>
<tr>
<td>Artificial Intelligence</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Plus three compulsory modules:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Big Data Analysis</td>
</tr>
<tr>
<td>Neural Networks</td>
</tr>
<tr>
<td>Data Science Research Topics</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Plus one optional module from:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Visualisation</td>
</tr>
<tr>
<td>Natural Language Processing</td>
</tr>
<tr>
<td>Social Networks and Graph Analysis</td>
</tr>
<tr>
<td>R for Data Science</td>
</tr>
<tr>
<td>Blockchain Programming</td>
</tr>
<tr>
<td>Financial Data Modelling</td>
</tr>
<tr>
<td>Mathematics of Financial Markets</td>
</tr>
</tbody>
</table>
# Data Science and Financial Technology

## MSc

**Four core modules:**
- Mathematics and Statistics for Data Science
- Machine Learning
- Data Programming in Python
- Financial Data Modelling

**Plus three compulsory modules:**
- Big Data Analysis
- Blockchain Programming
- Mathematics of Financial Markets

**Plus three optional modules from:**
- Data Science Research Topics
- Data Visualisation
- Natural Language Processing
- Social Networks and Graph Analysis
- Artificial Intelligence
- R for Data Science
- Neural Networks

**Plus**
- Final Project in Data Science and Financial Technology

## Postgraduate Diploma

**Four core modules:**
- Mathematics and Statistics for Data Science
- Machine Learning
- Data Programming in Python
- Financial Data Modelling

**Plus three compulsory modules:**
- Big Data Analysis
- Blockchain Programming
- Mathematics of Financial Markets

**Plus one optional module from:**
- Data Science Research Topics
- Data Visualisation
- Natural Language Processing
- Social Networks and Graph Analysis
- Artificial Intelligence
- R for Data Science
- Neural Networks

*London.ac.uk/data-science*
Postgraduate programmes in Data Science
Entry requirements

Entry routes

We offer two entry routes into these programmes, so, if you do not meet the academic requirements, you may still be eligible to apply through an alternative route.

Entry Route 1
To be eligible to register for any of the Data Science programmes, you must have the following:

• a bachelor’s degree (or an acceptable equivalent) in a relevant subject which is considered at least comparable to a UK second class honours degree, from an institution acceptable to the University.

Entry Route 2
If you do not meet the academic requirements for Entry Route 1, you can apply for the programme via Entry Route 2.

To be eligible to register, you must have the following:

• a bachelor’s degree (or an acceptable equivalent) in any subject which is considered at least comparable to a UK second class honours degree, from an institution acceptable to the University.

For Entry Route 2, you will also be required to complete an online preparatory course prior to registration. The online preparatory course, ‘Foundations of Data Science,’ requires approximately 30 hours of study.

This route helps you to develop the necessary skills to complete the full MSc programme successfully.

For more details on entry requirements and eligibility, please visit: bit.ly/DataSci-entry-reqs

Recognition of prior learning

Recognition of prior learning (RPL) is our acceptance of a qualification in place of one (or more) modules of the MSc, so you don’t need to take them as part of your degree. If your prior learning is recognised, you could complete the MSc more quickly by studying fewer modules. For this programme, the University of London may recognise your prior learning and award you credit towards the qualification up to the value of 120 UK credits.

How we recognise prior learning

We recognise qualifications automatically if we have already confirmed that they meet the learning outcomes of a particular module or set of modules. For qualifications we have not reviewed before, any recognition is classed as discretionary. If you believe a qualification you hold reflects similar learning outcomes to any particular MSc modules, you can apply for this to be recognised. For more information on RPL, visit: bit.ly/UoL-RPL

English language requirements

If your first language is not English, you will be required to show evidence of your English language skills. This can range from an IELTS test score as evidence that you have undertaken substantial education or work experience in English. Please see our website for more details: london.ac.uk/data-science

Computer requirements

You must have regular access to a computer with an internet connection to use the University of London website and Student Portal. The programme’s study resources are located on the VLE. Please see our website for more details: london.ac.uk/data-science

london.ac.uk/data-science
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 entry into assessments, but not the fee for sitting exams. All exam fees should be paid directly to your local exam centre. More details are available at: london.ac.uk/data-science

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 year-on-year 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.

Employer sponsorship

If you’re working and apply to study for this degree, your employer may be willing to help with the cost. Our online programmes are ideal for employers, because they keep you as an employee while they benefit from the additional skills you bring to the workplace.

Visit: london.ac.uk/employers for information about the University of London and the benefits of sponsorship.

About your qualification

When you graduate, you receive your Final Diploma and a Diploma Supplement.

The Final Diploma includes the following information:
- you were awarded a University of London degree, diploma or certificate
- Goldsmiths, University of London was your education provider.
- the University of London crest and the Vice-Chancellor’s signature.

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.

Distance and flexible learning qualifications are not always recognised by every country’s authorities or regulators when it comes to employment or further study. It is advisable to check the recognition status of this degree in your country of study before enrolling on the programme.
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

This material is available in alternative formats upon request. Please contact: special.arrangements@london.ac.uk

Follow us on:

london.ac.uk/facebook
london.ac.uk/flickr
london.ac.uk/instagram
london.ac.uk/issuu
london.ac.uk/linkedin
london.ac.uk/twitter
london.ac.uk/youtube

london.ac.uk/data-science