

The Department of Statistics

The Department of Statistics at LSE is one of the oldest and most distinguished in the UK. It has a rich research portfolio covering core areas of statistical inference and real applications, particularly in the economic, financial, actuarial, social and industrial arenas. The close collaboration between departments, its London location and strong international partnerships are reflected in the research life of the Department of Statistics through the members of staff, PhD students, postdoctoral research fellows and the thriving visitor and seminar programmes.



Entry Requirements

Entry requirements to the MSc Data Science are a good BSc degree (at least upper second class honours) in a relevant discipline, including a substantial amount of mathematics. Well-qualified applicants who do not meet this requirement will be considered on merit.

Overseas students should consult the section on equivalence of non-UK qualifications at the Graduate Admissions website below.

How to Apply

You should apply online here:

lse.ac.uk/study/graduate/home.aspx

You will need to click on the Apply Online icon and follow the instructions.

You will also be given access to the Graduate Application Tracker via LSE for You, which will reflect the personal details held in the School's database and the up-to-date status on your application.

How to contact us:

For further general information about the MSc programmes please contact the MSc Administrator at the Department of Statistics or visit the Departmental website:

lse.ac.uk/statistics/home.aspx



Statistics

Statistical learning methods and
computation for data science



MSc Data Science

The MSc Data Science provides training in data science methods, with a focus on statistical perspectives. You will receive a thorough grounding in theory, much of it at a high mathematical level, as well as gain practical skills of applied data science, enabling you to apply advanced methods of data science and statistics to investigate real world questions.

Your core courses will provide you with comprehensive coverage of some fundamental aspects of data science, computational techniques and statistical analysis. You will then choose courses from a range of optional modules ranging from Distributed Computing for Big Data and Statistical Computing, to Financial Statistics and Probabilistic Methods in Risk Management & Insurance. The programme will combine traditional lectures with computer lab sessions, in which you will work with data to complete hands-on exercises using programming tools.

The capstone project or dissertation will assess your ability to take on large-scale data-based problem solving, providing a realistic example of the challenges faced in data science settings by the kinds of organisations for which the MSc programme provides natural training.

Winton Prizes

The Department of Statistics has joined forces with Winton to award two annual £500 prizes to recognise academic excellence on the MSc Data Science programme. The first is awarded to the student who attains the highest overall mark in their exams. The second is awarded to the student who produces the best dissertation.



Degree Structure

Our taught postgraduate courses are based around lectures, with problem classes and computer workshops. Most courses are assessed by a two-hour exam in the summer term although some contain an element of course work. A small number of courses are assessed by an exam during Week 0 of Lent Term. Please see the course guides on our website for more information.

i. **Five compulsory** courses to the value of **three full units**:

- MY470 Computer Programming (H)*
- ST445/MY473: Managing and Visualising Data (H)
- ST447 Data Analysis and Statistical Methods (H)**
- ST443 Machine Learning and Data Mining (H)
- ST498 Dissertation/Capstone Project (F)

ii. **Optional** courses to the value of **two full units** from the following:

- ST446 Distributed Computing for Big Data (H)
- ST444 Statistical Computing (H)
- ST405 Multivariate Methods (H)
- ST411 Generalised Linear Modelling and Survival Analysis (H)
- ST422 Time Series (H)
- ST436 Financial Statistics (H)
- ST429 Probabilistic Methods in Risk Management and Insurance (H)
- MY459 Quantitative Text Analysis (H)
- MA407 Algorithms and Computation (H)
- MA424 Modelling in Operations Research (H)

H = Half Unit, F = Full Unit

*Students who can demonstrate equivalent prior knowledge of MY470, via transcripts of prior qualifications, may skip this course and take a further half unit of options from the list above

**Students who can demonstrate equivalent prior knowledge of ST4bb via transcripts of prior qualifications, may skip this course and take a further half unit of options from the list above

Courses are also available in the Department of Mathematics.

Graduate Careers

Data scientists are much in demand across industry, including a variety of Internet online service companies, marketers, banks, investment management, and other financial companies.

Data scientist positions involve a wide range of responsibilities; such as conducting exploratory data analysis, applying statistical methodologies, deriving business insights from data, partnering with company executives, product and engineering teams to solve problems, identify trends and opportunities, inform, influence, support, and execute product decisions and launches.

The core requirements for data science positions include a thorough understanding of applied statistics, statistical data modelling and statistical learning methodologies, experience in working with statistical packages and fluency in programming languages (e.g. Python, R), experience in working with large scale data and distributed computing platforms (e.g. Hadoop, Hive, Spark), and ability to communicate complex analysis and results to any audience.

The MSc in Data Science aims to prepare candidates for a wide range of data science positions by equipping them with strong foundations in statistical modeling and inference methodologies, hands-on experience in working with state-of-the-art computation tools and platforms, and experience in solving real-world data science questions.