



**Northumbria  
University**  
NEWCASTLE

Newcastle  
London  
Amsterdam



## Data Science MSc

Postgraduate | 2 years full-time with Advanced Practice | Full Time

Computer and Information Sciences | City Campus, Northumbria University

Newcastle | Start September 2024

# Data Science MSc

## About this course

*We are currently reviewing modules which provide opportunities to work with industry to gain real experience. Modules will be updated in due course.*

**Designed in consultation with partners from industry, and the business sector, our highly practical Data Science Masters provides you with the relevant skills needed to analyse, synthesise and manage different types and sizes of data efficiently.**

Our Data Science MSc will provide you with the ability to explore data insights to ensure organisations are making the most out of their data. You will develop knowledge insight from a variety of structured and unstructured data, using a range of data analysis methods, processes, algorithms and systems.

The course provides a greater understanding of Big Data and Cloud computing and will equip you with skills needed to tackle realistic Big Data problems. You will use principal machine learning methods, advanced database technologies, data visualisation techniques and statistical approaches to apply modern, analytical and statistical techniques to business data - combining both theoretical and practical approaches. You will also become equipped with programming skills in Python and R for effective, efficient, statistical data analysis.

This course is suited to those who have an undergraduate degree in computing/information sciences, or mathematical and statistical disciplines with applied computing components. It is ideal for graduates who wish to advance their career by becoming a data scientist. Alternatively, those with a considerable computing background in an industrial / business setting are suitable applicants.

## Modules and Learning

**Our Data Science MSc has been designed in consultation with partners from industry, and has been strongly influenced by industry practice and employer's needs, as well as our research strengths.**

You will take six taught modules covering principles of data science, computational and statistical methods and techniques, programming in Python and R, advanced databases, Big Data in a cloud computing setting, machine learning, and transferable skills in project management and research.

Finally, you will undertake a major data science project, allowing you to specialise in a subject of interest to you (e.g Business Analytics, Health Analytics and Game Analytics). You will complete practical tasks based on real-life situations, accompanied by critical reflection, and will follow standard professional practice.

## Teaching Staff

**Our teaching staff include cutting-edge researchers,**

**whose areas of specialisms include topics covered on this course, helping ensure that teaching is right up-to-date. Specialisms include big data, data mining, machine learning, digital literacy, information behaviour, information retrieval systems, recommender systems, and the link between information science and cognitive psychology.**

Our eminent academics have written books that regularly appear on reading lists for information science courses at universities all over the world. They also work as external examiners and reviewers of courses and research at other UK and non-UK universities.

## Facilities

**Northumbria University uses a range of technologies to enhance your learning, with tools including web-based self-guided exercises, online tests with feedback, videos and tutorials. These tools support and extend the material that is delivered during lectures, and are available anywhere anytime. Group work and peer interaction feature prominently in our learning and teaching, this reflects the practices you are likely to encounter within the working environment.**

You will have 24/7 term-time access to Northumbria's library, which has over half a million print books as well as half a million electronic books available online.

The University Library has advanced search software and database tools that allow you to use a single search box to get fast results from across a wide and reliable range of academic resources.

Throughout the duration of your course you will have access to our state-of-the-art facilities including our new Computer and Information Sciences building, this gives you access to dedicated IT systems and is available evenings and weekends.

## Research-rich Learning

**Through the dissertation module, you will undertake a major individual project. This provides a platform to conduct a substantial piece of research and development into a topic at the forefront of the Data Science discipline. This will include the need to utilise appropriate research techniques, critical evaluation and synthesis.**

You are also invited to attend department research seminars and workshops organised by IoC (Institute of Coding). These provide another opportunity for exposure to research methods and contemporary research issues in computer and data sciences.

## Your Future

**Demand for those with specialist data science qualifications is high and this course can prepare you**

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for a range of careers in the modern digital world.

You will be well placed to take up a range of roles available in the IT based business world including, but not limited to, Information and Data Manager, Business Systems Analyst, Enterprise Data Analyst, Data Scientist, Data Engineer, and Data Specialist. These roles are in a variety of industries including investment management, healthcare and banking, amongst many others. There is currently high demand for data science specialists in the UK IT sector.

## Entry Requirements 2023/24

### Standard Entry

Applicants should normally have:

A minimum of a 2:2 honours degree (or equivalent) in a quantitative subject such as computer / information science, engineering, maths, statistics, or a related discipline (e.g. IT, software engineering). Other subject qualifications, equivalent professional qualifications and/or relevant work experience will be considered on an individual basis.

### International qualifications:

If you have studied a non UK qualification, you can see how your qualifications compare to the standard entry criteria, by selecting the country that you received the qualification in, from our country pages. Visit [www.northumbria.ac.uk/yourcountry](http://www.northumbria.ac.uk/yourcountry)

### English language requirements:

International applicants are required to have a minimum overall IELTS (Academic) score of 6.5 with 5.5 in each component (or approved equivalent\*).

\*The university accepts a large number of UK and International Qualifications in place of IELTS. You can find details of acceptable tests and the required grades you will need in our English Language section. Visit [www.northumbria.ac.uk/englishqualifications](http://www.northumbria.ac.uk/englishqualifications)

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# Data Science MSc

## Module Overview

Year 1	
KF7028	Research Methods and Project Management
KF7032	Big Data and Cloud Computing
KL7010	Principles of Data Science
KL7011	Advanced Databases
KL7012	Statistical Programming
KV7006	Machine Learning
KV7001	Academic Language Skills for Computer and Information Sciences
Year 2	
KF7029	MSc Computer Science & Digital Technologies Project
KV7007	Advanced Practice Semester

## Finance

### Tuition Fees (UK students)

2024 entry: Full Fee £13,460

Please note that the tuition fee amount you will pay may increase slightly year on year in line with inflation and subject to government regulations.

### Tuition Fees (EU students)

2024 entry: Full Fee £22,750

Please note that the tuition fee amount you will pay may increase slightly year on year in line with inflation and subject to government regulations.

### Tuition Fees (International students)

2024 entry: Full Fee £22,750

Please note that the tuition fee amount you will pay may increase slightly year on year in line with inflation and subject to government regulations.

### Additional Costs (All Students)

2024 entry: There are no Additional Costs

## Financial Support

Northumbria University is committed to supporting our students. We offer scholarship packages for students depending on their abilities.

You can find out more information on our individual packages at [www.northumbria.ac.uk/study-at-northumbria/fees-funding/pg-fees-funding](http://www.northumbria.ac.uk/study-at-northumbria/fees-funding/pg-fees-funding)

Financial support opportunities have associated eligibility conditions, therefore it is essential applicants consider all requirements and observe the application process and deadlines.

## Other Additional Costs

### Accommodation Costs

Many students find that staying in University accommodation enhances their student experience, and Northumbria has a fantastic selection available for you. Visit our [accommodation pages](#) to investigate your options for living and studying in Newcastle. All costs incurred are optional and students should select the most appropriate accommodation for their needs.

### Disability Support

In order to access disability or dyslexia support, students may be required to provide evidence of their disability. This evidence is often provided by an external body (for example, by a medical specialist or GP) and these external bodies may charge for providing this evidence. Also, if a disabled student is eligible for DSA funding for computer equipment, depending on their funding body, the student may be required to make a contribution of £200 towards the cost of any computer equipment. For more information about how to access disability support, contact [Student Life and Wellbeing](#).

### Healthcare Costs

Students, depending on their circumstances, may incur some charges for accessing healthcare or medication from the National Health Service. These include charges for prescriptions, charges for dental checks and treatment, and charges for other services, such as providing vaccinations or for certain types of medical evidence (for example, evidence to support a Personal Extenuating Circumstances/PEC claim at the University, if required). These charges are set and charged by NHS services, rather than by the University, and will be subject to change.

International students from particular countries may be required to pay to have a Tuberculosis (TB) test.

We also strongly recommend that all EU and international students take out their own insurance policy to cover costs which are not met by the National Health Service. It is your responsibility to ensure you pay for adequate insurance cover for the duration of your stay in the UK.

For more information about healthcare-related charges in

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the UK, please visit the [UKCISA](#) webpage.

## Immigration Health Surcharge

The **Immigration Health Surcharge (IHS)** is a fee international students need to pay as part of their visa application.

The National Health Service (NHS) is a UK healthcare system paid for through taxes. As an international student, paying the IHS allows you to use the NHS in the same way as UK nationals and residents. Whether you need to pay depends on the immigration status you're applying for.

You usually need to pay the healthcare surcharge if you're applying for a visa or immigration application:

- for more than 6 months, if you're applying outside the UK
- for any length of time, if you're applying inside the UK

You do not need to pay if you're applying for a visitor visa or to remain in the UK permanently.

- More information on [Who Needs to Pay](#)
- Calculate your [Immigration Health Surcharge](#)
- More information on [How to Pay](#)

## Congregation Costs

When you graduate you will be invited to attend your graduation ceremony. Free tickets will be provided to the Graduate and two guests. Congregation ceremonies also have associated costs. To take part you will be required to hire a graduation gown and cap\* You may also wish to purchase a professional photograph or additional guest tickets. To give you an approximation of costs, for students graduating in 2023/24, the price of an additional guest ticket was £15.00. Please note, these are subject to availability. Please also be aware that the associated costs of graduation ceremonies are subject to review each year. *\*Gown hire and photography are purchased from external providers, therefore the University cannot demonstrate prices.*

## Library Costs

Your University Library provides a postal service for books and journal articles which can be sent world-wide to Northumbria students who are studying part-time or by distance learning. Students who are on placement for more than six weeks are eligible to use the service whilst on placement.

There is no charge for posting books out, but you will be required to pay the cost of any return postage. We recommend that items are returned by recorded delivery. You can of course, return books in person to the University Library.

We no longer charge for items which become overdue but any Library books which have been lost or damaged beyond repair will be charged at a standard cost of £25 - reviewed annually. Alternatively you may choose to provide a replacement copy in discussion with the Library.

Where books borrowed from other libraries are lost or damaged we are obliged to adhere to the replacement policies of the lending institution.

If you lose your University smart card there is a replacement charge of £10 to obtain a new one. This cost is waived if your smart card has been stolen and you can provide a police crime reference number.

## Placement Costs

Placements in industry are a core element of many of Northumbria's courses. Whilst many of these placements are optional, some are mandatory. They offer you a great opportunity to gain hands-on experience, giving you a distinct edge in the job market. To undertake a placement, you will need to budget for any accommodation and travel charges.

## Printing & Photocopying Costs

Students will receive a printing credit of £10 in 2023/24 and 2024/25\*. This will provide 1,000 pages of A4 single-sided black and white printing. Any additional printing is paid for by the student.

**High Quality HP Printers (available for Students in the Faculty of Arts, Design and Social Sciences only)**

High Quality Printing is available in:

- Charges for High Quality Printing
- 30p: Single sided A3 print. 120gsm colotech+ paper
- 15p: Single sided A4 print. 120gsm colotech+ paper

You can top up your Print Credits Online, whenever you like. Click the Print Balance > Buy Credits button in this Student Portal or logon at [www.northumbria.ac.uk/payforprinting](http://www.northumbria.ac.uk/payforprinting). Print credits will show on your account in 5-10 minutes.

To print to these printers:

Use the Student Desktop PCs and Apple Macs in Squires Workshop and City Campus East School of Design to print to these printers:

- Select the 'Print Queue' - When picking the printer to use, look for the colour devices on NINGWOOD
  - a) HP E85055 HQ Col Printer A3 on Ningwood
  - b) HP E85055 HQ Col Printer A4 on Ningwood

Send your work to the printer and use your University Smartcard to swipe release your print.

*\*Newcastle and London campus only. Amsterdam endeavours to be a paperless campus and printing of submission is not required. Costs at Newcastle Campus may be subject to change for 2024/25.*

## Visa Costs

International students will be required to pay visa application fees, and associated fees as required - such as the Immigration Healthcare Surcharge, Tuberculosis tests, fees to renew or extend a visa, and fees associated with appealing a visa/immigration decision. These fees are set

and charged by the UK government, rather than by the University, and are subject to change. More information about these fees can be found on the [UK Government's website](#), and information about applying for a visa to study at Northumbria can be found on our [here](#).

