



Data Science MSc

Postgraduate | 16 Months Full-Time or 2 Years with Advanced Practice | Full Time | Computer and Information Sciences City Campus, Northumbria University | Newcastle | Start January 2021

Data Science MSc

About this course

PLEASE NOTE: Applications for January 2021 intake have now closed. Please visit our Postgraduate Study webpage to see all options for September 2021 entry.

Designed through our own research and through consultation with Northumbria's Institute of Coding (IoC), which is funded by Office for Students (OfS), and through discussion with data scientists from the industry, our Data Science MSc provides relevant skills needed to analyse, synthesise and manage different types and sizes of data efficiently.

This master's covers the entire breadth and depth of the data science discipline. It 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 data science and 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 develop 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. Alternatively, those with a considerable computing background in an industrial / business setting are suitable applicants. It is an ideal course for graduates who wish to advance their career by becoming a data scientist as demand for those with specialist data science qualifications is high and this course can prepare you 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 a high demand for data science specialists worldwide (e.g. 12,481 current job positions available in the UK; 162,524 in the US; 2,545 in France; 4,773 in Germany; 2,056 in Netherlands; 1,141 in Ireland; 5,963 in China; 18,119 in India; 1,151 in Belgium).

This programme is available as; 12 months, 16 months and 2 years with Advanced Practice.

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

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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 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 2020/21

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

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

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Module Overview

Year 1	
KF7028	Research Methods and Project Management
KF7029	MSc Computer Science & Digital Technologies Project
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

Finance

Tuition Fees (UK students)

2021 entry: Full Fee £8,400

2020 entry: Full Fee £7,170

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)

2021 entry: Full Fee £16,000

2020 entry: Full Fee £7,170

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)

2021 entry: Full Fee £16,000

2020 entry: Full Fee £15,500

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)

2021 entry: There are no Additional Costs

2020 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

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 Support and Well-being](#).

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.

Certain applicants who apply for a UK visa will pay an Immigration Health Surcharge. International students from particular countries may also 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.

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For more information about healthcare-related charges in the UK, you can speak to the [Welfare, Immigration and Funding team](#) based in Student Support and Well-being.

Congregation Costs

When you graduate you will be invited to attend your graduation ceremony. Congregation ceremonies have associated costs, for instance **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 2018/19, the price of an additional guest ticket was £12.50. Please 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 will be sent world-wide to Northumbria students who are studying part-time, by distance learning or are work based learners. Students who are 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 either University Library campus.

Overdue charges apply to all library loans to encourage you to return items on time when they have been recalled for use by another reader. Loan renewal is automatic for up to four months or until another reader requests that item. Charges are entirely avoidable by returning items on time, but where incurred will vary according to loan status and the length of time an item is overdue. Overdue charges exist to ensure the Library Collection benefits the whole student community.

Library books which have been lost or damaged beyond repair will be charged at the replacement cost of the item and a non-refundable handling charge.

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 2019/20 and

2020/21*. This will provide 1,000 pages of A4 single-sided black and white printing. Any additional printing is paid for by the student.

*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 2020/21.

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](#).

Useful Links

Facilities

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/facilities/

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/pfna-accordions/

Tutor Profiles

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/tutor-profiles/

Alumni Profiles

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/alumni-profiles/

Student Profiles

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/student-profiles/

Course Guides

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/course-guides/

FAQs

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/faqs/

Study and Travel Abroad

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/study-and-travel-abroad/

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/

[science-msc-dtfdsj6/book-an-open-day/](http://www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/book-an-open-day/)

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/facilities-images/

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/facilities-pods/

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/general-links-folder/

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/links/

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/main-images/

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/mim-pod/

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/research-imagery/

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/research-pods/

www.northumbria.ac.uk/study-at-northumbria/courses/data-science-msc-dtfdsj6/videos/

