UNIVERSITY OF LIVERPOOL

MSc

Data Science and Analytics for Health

Study mode	Duration	
Full-time	12 months	Apply by: **11 September 2026**
Part-time	24 months	Starts on: **28 September 2026**

About this course

Step into the forefront of healthcare innovation with our MSc in Data Science and Analytics for Health. Data science is revolutionising healthcare by enabling data-driven decision-making to improve healthcare outcomes. We are able to use Machine learning models to analyse healthcare data to predict diseases before symptoms appear, as well as use AI tools to enhance medical images, allowing greater accuracy and speeding up disease identification. This programme will equip you with the technical and analytical skills to become a key contributor to the digital revolution in healthcare.

Introduction

Please note, this programme is currently undergoing revalidation as part of our Curriculum 2027 review and may be subject to changes.

Data science is transforming the healthcare sector where large amounts of health data has the potential to revolutionise health care interventions. With the rise of electronic health records, wearable technology and AI driven diagnostics, healthcare now generates vast amounts of data. Effectively analysing this data allows for earlier disease detection, personalised treatment plans and more efficient resource allocation.

Predictive analytics can help identify at risk populations, while machine learning models assist in the diagnosis of conditions with greater accuracy. Data Science also plays a crucial role in public health by tracking disease outbreaks, guiding policy decisions and improving global health interventions.

This programme blends core principles of computer science with advanced statistical analysis and data visualisation techniques to discover how health data science can enhance our understanding of disease and healthcare.

The structure of the MSc has significant flexibility allowing students to follow their personal interests and specialise in, for example, prediction modelling, artificial intelligence and machine learning, and clinical trials.

This MSc also has strong links to the Civic Health Innovation Labs (CHIL), an internationally recognised, multi and trans-disciplinary research centre based at The University of Liverpool. The centre brings together leading experts from academia, the NHS, local government, charities and industry to develop a new model for progressive data uses and responsible AI in civil society, fuelling innovations for health, society and economic advancement for the Liverpool city region.

CHIL provides dissertation research projects for students, focusing on areas such as healthcare data analytics, digital health solutions, public health informatics, and the application of technology in community health initiatives. These projects offer students the opportunity to work on cutting-edge research, contributing to meaningful advancements in global health.

The programme opens up a multitude of career opportunities globally, including in the health sector, industry, and academia. In the UK alone, demand for data scientists and data engineers has more than tripled over recent years, increasing by 231%, which translates to approximately 52,000 new jobs.

Who is this course for?

This master's programme is suitable for you if you hold a 2.2 degree from a UK University (or equivalent). Your first degree could be in any subject, as long as you are able to evidence previous experience of quantitative skills (for example, at least one module in your degree in statistics, computer science or mathematics).

This programme is also open to intercalating students on clinical programmes.

For students who do not have any previous experience or quantitative training, please see our MSc Data Science for Health (Conversion), which is specifically designed for students

who are wishing to move into the field of data science, irrespective of their background and previous training.

For students who have a particular interest in undertaking research, we also have an MRes in Data Science for Health. This programme is designed for students who prefer more intensive research training, with a major independent research project at its core, making it ideal for those considering future PhD study, academic careers, or those wanting to specialise in a specific research topic.

What you'll learn

- How to use health data to better understand disease and improve care.
- The benefits and challenges of applying data science to real-world health problems.
- Key statistical concepts, including variability, sampling and statistical inference.
- How to collect, analyse, interpret and present data.
- How to manipulate and evaluate health data sources.
- The use of databases in modern information systems.
- Fundamental concepts of computer science.
- Effective communication and teamwork skills.
- The role of digital technology in improving health care interventions.
- How to produce a significant piece of health data science research.

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Course content

Discover what you'll learn, what you'll study, and how you'll be taught and assessed.

Semester one

Please note, work towards the Dissertation module runs across the length of the programme. The dissertation itself is completed in semester three.

Modules

Compulsory modules	Credits
INTRODUCTION TO HEALTH DATA SCIENCE (DASC501)	15
COMPUTER PROGRAMMING FOR HEALTH RESEARCH (DASC509)	15

Optional modules	Credits
STATISTICS FOR HEALTH RESEARCH (DASC502)	15
USING ROUTINE DATA FOR PUBLIC HEALTH (DASC503)	15
AN INTRODUCTION TO QUALITATIVE RESEARCH (PUBH160)	15
PRACTICAL RESEARCH SKILLS (PSYC644)	30

Programme details and modules listed are illustrative only and subject to change.

Semester two

Please note, work towards the dissertation module runs across the length of the programme. The dissertation itself is completed in semester three.

Modules

Optional modules	Credits
PREDICTION MODELLING & JOINT LONGITUDINAL AND SURVIVAL DATA ANALYSIS (DASC506)	15
MACHINE LEARNING AND BIOINSPIRED OPTIMISATION (COMP532)	15
HIGH-DIMENSIONAL DATA STRUCTURES AND LEARNING ALGORITHMS (DASC507)	15
ACTIONABLE HEALTHCARE DATA ANALYTICS (DASC505)	15
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING FOR HEALTH (DASC512)	15
APPLIED ARTIFICIAL INTELLIGENCE (COMP534)	15
COMPUTATIONAL INTELLIGENCE (COMP575)	15
DATA MINING AND VISUALISATION (COMP527)	15
EVALUATION OF HEALTHCARE INTERVENTIONS (DASC504)	15
STATISTICAL GENETICS AND PHARMACOGENOMICS (DASC508)	15

Programme details and modules listed are illustrative only and subject to change.

Final project

Please note, work towards the Dissertation module runs across the length of the programme. The dissertation itself is completed in semester three.

Modules

Compulsory modules	Credits
DISSERTATION (DASC500)	60

Programme details and modules listed are illustrative only and subject to change.

Teaching and assessment

How you'll learn

Each 15-credit module involves around 150 hours of study.

You can expect to spend 2-3 hours a week per module in taught study and 3-5 hours a week per module in self-managed independent study. The programme has a blended format with a mix of face-to-face lectures, workshops and practical sessions.

Full-time students will complete the programme in three semesters and part-time students will complete the programme in six semesters.

How you're assessed

You'll be assessed through a variety of written critiques and reports, software practical exercises and written exams. You'll also be asked to present your work in a variety of formats, from oral presentations to a conference poster. All modules have active learning embedded within them.

Liverpool Hallmarks

We have a distinctive approach to education, the Liverpool Curriculum Framework, which focuses on research-connected teaching, active learning, and authentic assessment to ensure our students graduate as digitally fluent and confident global citizens.

The Liverpool Curriculum framework sets out our distinctive approach to education. Our teaching staff support our students to develop academic knowledge, skills, and understanding alongside our **graduate attributes**:

- Digital fluency
- Confidence
- Global citizenship

Our curriculum is characterised by the three **Liverpool Hallmarks**:

- Research-connected teaching
- Active learning
- Authentic assessment

All this is underpinned by our core value of **inclusivity** and commitment to providing a curriculum that is accessible to all students.

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Careers and employability

Graduates in Data Science are in high demand worldwide. Whether you aspire to work as a data scientist in the NHS, develop AI-driven healthcare solutions or contribute to groundbreaking medical research, this programme provides the tools to help you succeed.

With the demand for data scientists and data engineers at an all time high, it is envisaged there is a need for approximately 52,000 new data science jobs in the UK alone.

The healthcare sector is the fastest growing employment sector around the world. This programme opens up a multitude of career opportunities for professionals with strong quantitative skills to evaluate health care interventions and information systems. Graduates are perfectly placed to enter roles in hospitals, government agencies, pharmaceutical companies or health tech startups, driving innovation and improving patient outcomes worldwide.

The health sector is a fast-growing employment sector around the world. There is an increasing need for professionals with strong quantitative skills to evaluate health care interventions and information systems.

The MSc Data Science and Analytics for Health is tailored to develop the statistical and computational skills needed to pursue a successful career as a data scientist working in academia, healthcare or biopharmaceutical sectors.

Career support from day one to graduation and beyond

Career planning

From education to employment

Networking events

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Fees and funding

Your tuition fees, funding your studies, and other costs to consider.

Tuition fees

UK fees (applies to Channel Islands, Isle of Man and Republic of Ireland)

Full-time place, per year - £14,000
Part-time place, per year - £7,000

International fees

Full-time place, per year - £32,000
Part-time place, per year - £16,000

Tuition fees are for the academic year 2026/27.

Tuition fees cover the cost of your teaching and assessment, operating facilities such as libraries, IT equipment, and access to academic and personal support.

- You can pay your tuition fees in instalments.
- All or part of your tuition fees can be funded by external sponsorship.
- International applicants who accept an offer of a place will need to pay a tuition fee deposit.

If you're a UK national, or have settled status in the UK, you may be eligible to apply for a Postgraduate Loan worth up to £12,167 to help with course fees and living costs. **Learn more about paying for your studies**.

Additional costs

We understand that budgeting for your time at university is important, and we want to make sure you understand any course-related costs that are not covered by your tuition fee. This could include buying a laptop, books, or stationery.

Find out more about the additional study costs that may apply to this course.

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Entry requirements

The qualifications and exam results you'll need to apply for this course.

Postgraduate entry requirements

We accept a 2:2 honours degree from a UK university, or an equivalent academic qualification from a similar non-UK institution.

Applicants can hold a degree in any subject area but should be able to demonstrate evidence of previous experience of quantitative analysis in statistics and/or computer science (for example, as part of an undergraduate module or relevant work experience).

This programme is also open to intercalating students on clinical programmes.

For overseas students an acceptable English Language qualification is required of IELTS 6.5 or equivalent, with no individual band less than 6.0.

For students who do not hold a first degree in a relevant subject area, please see our MSc Data Science for Health (Conversion). This programme is specifically designed for students wishing to move into the field of data science, irrespective of their background and previous training.

For students who have a particular interest in undertaking research, we also have an MRes in Data Science for Health. This programme is designed for students who prefer more intensive research training, with a major independent research project at its core, making it ideal for those considering future PhD study, academic careers, or those wanting to specialise in a specific research topic.

International qualifications

Select your country or region to view specific entry requirements.

Many countries have a different education system to that of the UK, meaning your qualifications may not meet our entry requirements. Completing your Foundation Certificate, such as that offered by the University of Liverpool International College, means you're guaranteed a place on your chosen course.

English language requirements

You'll need to demonstrate competence in the use of English language, unless you're from a majority English speaking country.

We accept a variety of international language tests and country-specific qualifications.

International applicants who do not meet the minimum required standard of English language can complete one of our Pre-Sessional English courses to achieve the required level.

IELTS

6.5 overall, with no component below 6.0

TOEFL iBT

If you took a TOEFL test on or before 20 January 2026, you'll need 88 overall, with minimum scores of listening 19, writing 19, reading 19 and speaking 20. If you took a TOEFL test from 21 January 2026 onwards, when a new scoring system was introduced, you'll need 4.5 overall, with 4 or above in all components. TOEFL Home Edition not accepted.

Duolingo English Test

125 overall, with writing not less than 125, speaking and reading not less than 115, and listening not below 110. For academic year 2025/26 only, we will also accept the production, literacy, comprehension and conversation score set: 120 overall, with no component below 105.

Pearson PTE Academic

61 overall, with no component below 59

LanguageCert Academic

70 overall, with no skill below 65

PSI Skills for English

B2 Pass with Merit in all bands

INDIA Standard XII

National Curriculum (CBSE/ISC) - 75% and above in English. Accepted State Boards - 80% and above in English.

WAEC

C6 or above

Pre-sessional English

Do you need to complete a Pre-sessional English course to meet the English language requirements for this course?

The length of Pre-sessional English course you'll need to take depends on your current level of English language ability.

Pre-sessional English in detail

If you don't meet our English language requirements, we can use your most recent IELTS score, or the equivalent score in selected other English language tests, to determine the length of Pre-sessional English course you require.

Use the table below to check the course length you're likely to require for your current English language ability and see whether the course is available on campus or online.

Your most recent IELTS score	Pre-sessional English course length	On campus or online
6.0 overall, with writing at 6.0 and no component below 5.5	6 weeks	On campus or online
5.5 overall, with writing at 5.5 and no component below 5.0	10 weeks	On campus or online
5.5 overall, with no more than one component at 5.0	12 weeks	Online

Your most recent IELTS score	Pre-sessional English course length	On campus or online
5.5 overall, with no component below 5.0	20 weeks	On campus
5.0 overall, with no more than one component at 4.5	30 weeks	On campus
4.5 overall, with no more than one component at 4.0	40 weeks	On campus

If you've completed an alternative English language test to IELTS, we may be able to use this to assess your English language ability and determine the Pre-sessional English course length you require.

Please see our guide to Pre-sessional English entry requirements for IELTS 6.5 overall, with no component below 6.0, for further details.

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