

MSc

# Data Science and AI for Health Innovation (Conversion)

**Study mode**

Full-time

Part-time

**Duration**

12 months

24 months

Apply by: **17 September 2027**Starts on: **27 September 2027**

## About this course

Build confidence in statistics, programming and responsible AI for healthcare innovation. Our MSc Data Science and AI for Health Innovation (Conversion) is designed for students from a wide range of academic and professional backgrounds who want to transition into the rapidly growing field of health data science and artificial intelligence. This programme provides a supportive introduction to statistics, programming, machine learning and health data analysis, helping you develop both technical expertise and confidence in applying data science approaches to real-world healthcare challenges.

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## Introduction

Healthcare is increasingly shaped by data science, artificial intelligence and digital technologies. From electronic health records and wearable devices to AI-assisted diagnostics and public health monitoring, healthcare systems now generate vast amounts of data with enormous potential to improve patient care and health outcomes.

As the use of healthcare data and AI continues to expand, there is growing demand for professionals who can analyse, interpret and communicate complex information responsibly and effectively.

This programme is specifically designed for students who may not have previous quantitative training but are motivated to develop expertise in health data science and artificial intelligence. Through a supportive and carefully structured learning experience, students progressively build confidence in statistics, coding, computational methods and data analysis.

The programme combines core foundations in statistics, programming and health data science with opportunities to explore specialist areas including machine learning, artificial intelligence, prediction modelling and healthcare evaluation.

Designed around flexibility and student support, the programme allows students to tailor their studies around their own interests and future career ambitions while developing highly valued analytical, computational and professional skills.

The programme also has strong links with the [Civic Health Innovation Labs \(CHIL\)](#), an internationally recognised multidisciplinary research centre based at the University of Liverpool. CHIL brings together experts from academia, the NHS, local government, charities and industry to develop responsible approaches to data use and AI for health and society.

Graduates from the programme are well placed for careers across healthcare, digital health, public health, research and healthcare innovation, with opportunities continuing to grow rapidly both within the UK and internationally.

## Why study this programme?

### **Build confidence in a supportive learning environment**

This programme is designed specifically for students transitioning into health data science from a wide range of backgrounds. Teaching is carefully structured to help students progressively develop confidence in statistics, programming and analytical thinking.

You will learn within a welcoming and collaborative academic environment where curiosity, professional development and student support are actively encouraged.

### **Tailor your learning to your ambitions**

As your confidence and experience develop, optional modules allow you to explore areas aligned with your own interests and career ambitions, including applied statistics, machine learning, healthcare evaluation and artificial intelligence.

This flexibility helps students develop distinctive profiles suited to careers across healthcare, industry and research.

## Learn from experts who care

You will study alongside approachable staff with expertise across statistics, health data science, artificial intelligence and healthcare research.

Teaching is enriched by guest lecturers and research collaborations connected to organisations including the NHS, industry and the Civic Health Innovation Labs (CHIL), helping students connect learning to real-world healthcare challenges and innovation.

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## Who is this course for?

This programme is designed for students who are interested in health data science and artificial intelligence but do not have previous quantitative or technical training.

Applicants may come from a wide range of backgrounds including:

- Health sciences
- Psychology
- Life sciences
- Social sciences
- Business
- Humanities
- Education
- Healthcare professions.

The programme is ideal for applicants looking to:

- Transition into health data science or AI-related careers
- Build confidence in statistics and programming
- Develop analytical and computational skills
- Apply data science approaches to healthcare challenges
- Prepare for future postgraduate research or specialist training.

No prior experience in programming or advanced statistics is required.

Specifically, 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 this programme will train you in basic statistical and computing skills.

Our postgraduate Health Data Science portfolio also includes specialist pathways tailored to different backgrounds and career ambitions.

Applicants with previous quantitative training may be interested in the [MSc Data Science and AI for Health Innovation](#), which provides a more advanced pathway for students wishing to further develop expertise in statistics, machine learning, artificial intelligence and healthcare analytics.

For applicants seeking a more research-intensive experience, the [MRes Data Science and AI for Health Innovation](#) combines advanced methodological training with a substantial independent research project, making it excellent preparation for PhD study and research-focused careers.

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## What you'll learn

The curriculum combines accessible foundations in health data science with opportunities to explore specialist areas in statistics, machine learning and artificial intelligence.

Students develop expertise in:

- Understanding how health data can improve healthcare and patient outcomes
- Applying data science approaches to real-world healthcare challenges
- Building confidence in statistics, programming and computational methods
- Collecting, managing, analysing and interpreting healthcare data
- Machine learning and artificial intelligence for healthcare innovation
- Responsible and ethical approaches to AI and healthcare data use
- Communicating analytical findings effectively to different audiences
- Collaborative and interdisciplinary working
- Designing and completing an independent health data science research project.

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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

### Modules

| Compulsory modules                                                  | Credits |
|---------------------------------------------------------------------|---------|
| INTRODUCTION TO DATA SCIENCE AND AI FOR HEALTH INNOVATION (DASC501) | 15      |
| STATISTICS AND AI FOR HEALTH INNOVATION RESEARCH (DASC502)          | 15      |
| COMPUTER PROGRAMMING FOR HEALTH RESEARCH (DASC509)                  | 15      |
| PRACTICAL AND RESPONSIBLE AI FOR HEALTH INNOVATION (DASC513)        | 15      |

Programme details and modules listed are illustrative only and subject to change. As part of our commitment to continuous improvement, we are currently reviewing all of our programmes. This may include refining study pathways, strengthening links with employers, integrating generative AI, developing students' research skills, and enhancing alignment with our research strengths. The course content currently shown on this page reflects the programme as it ran for students beginning in September 2026. This page will be updated for students beginning in September 2027 by Friday 30th April 2027 at the latest.

## Semester two

### Modules

| Optional modules                                                               | Credits |
|--------------------------------------------------------------------------------|---------|
| PREDICTION MODELLING & JOINT LONGITUDINAL AND SURVIVAL DATA ANALYSIS (DASC506) | 15      |
| MACHINE LEARNING AI FOR HEALTH INNOVATION (DASC507)                            | 15      |
| STATISTICAL GENETICS AND PHARMACOGENOMICS (DASC508)                            | 15      |
| DEEP LEARNING AI FOR HEALTH INNOVATION (DASC512)                               | 15      |
| CAUSAL INFERENCE FOR HEALTH INNOVATION RESEARCH (DASC514)                      | 15      |
| EVALUATION OF HEALTHCARE INTERVENTIONS AND LEARNING HEALTH SYSTEMS (DASC516)   | 15      |

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## Final project

## Modules

| Compulsory modules     | Credits |
|------------------------|---------|
| DISSERTATION (DASC500) | 60      |

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## **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 reports, software practical exercises and critical appraisals. 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 Learning Framework**

At Liverpool, we take a distinctive approach to education through the Liverpool Learning Framework. This means teaching that is engaging, inclusive and designed to help you succeed during your studies and beyond.

You'll develop specialist subject knowledge alongside the skills employers value most, including:

- Digital fluency
- Confidence
- Global citizenship

Our curriculum is characterised by the three Liverpool Hallmarks:

- Research-connected teaching – learning informed by the latest ideas and discoveries
- Active learning – taking part, applying knowledge and learning by doing
- Authentic assessment – assessments designed around real-world tasks and challenges

We also embed key priorities across our curriculum, including AI literacy, employability, and sustainability, helping you prepare for the future and make a positive impact in the world.

We're committed to creating a supportive and inclusive learning environment where every student can thrive.

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## Careers and employability

Graduates from the MSc Data Science and AI for Health Innovation (Conversion) develop the statistical, computational and analytical skills needed to move into one of the fastest-growing and most in-demand areas across healthcare, industry and research.

Healthcare is one of the fastest-growing sectors globally, with rapidly increasing demand for professionals who can apply data science, machine learning and artificial intelligence to improve healthcare services, patient outcomes and public health decision-making. In the UK alone, demand for data scientists and data engineers has risen significantly in recent years, creating exciting opportunities across a wide range of sectors.

This programme prepares graduates for careers including:

- Healthcare analytics
- NHS data science
- Pharmaceutical and biotechnology industries
- Clinical trials and health research
- Public health and epidemiology
- Digital health innovation
- AI-driven healthcare technologies
- Healthcare evaluation and policy
- Academic and methodological research.

Graduates may go on to work within hospitals, government agencies, research organisations, pharmaceutical companies, healthcare technology companies and innovation-focused startups, contributing to evidence-based healthcare improvement and responsible AI innovation.

Alongside technical development, the programme also builds highly valued transferable skills in communication, critical thinking, problem-solving and interdisciplinary collaboration, enabling graduates to thrive in complex real-world environments and multidisciplinary teams.

The programme also provides excellent preparation for further postgraduate study, including doctoral research in health data science, statistics and artificial intelligence.

## Join a future-focused health data science community

The demand for professionals with expertise in health data science and responsible AI continues to grow rapidly across healthcare, industry and academia.

At the University of Liverpool, you will develop the skills, confidence and experience needed to contribute to the future of healthcare innovation within a supportive and inclusive academic community.

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## Career support from day one to graduation and beyond

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### Career planning

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### From education to employment

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### 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 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 £13,206 to help with course fees and living costs. **Learn more about paying for your studies**.

## Additional costs

We don't anticipate additional compulsory costs to students outside of general study costs.

You can find information on the general and subject-specific costs you could expect to incur on our study costs webpage.

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# Entry requirements

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

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## Postgraduate entry requirements

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 this programme will train you in basic statistical and computing skills.

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

If you have previous experience or quantitative training (for example a first degree in computer science or mathematics), please see our [MSc Data Science & AI for Health Innovation MSc](#).

For students who have a particular interest in undertaking research, we also have our [MRes Data Science & AI for Health Innovation](#). 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.

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## International qualifications

[Select your country or region to view specific entry requirements.](#)

Applicants with any academic background will be considered, as students will be trained on basic statistical and computing skills. As such, there is no minimum entry requirement for this programme, but an acceptable English language qualification (IELTS 6.5 or equivalent, with no band less than 6.0) is required to ensure students can access the programme material which is all delivered in English.

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## 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.

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## **IELTS**

6.5 overall, with no component below 6.0

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## **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.

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## **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.

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## **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              |
| 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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