Fees and Funding Opportunities

The course is full-time for one year. Fees for the programme are:

UK and EU students: £7,390 (GBP)
Non-EU students: £18,100 (GBP).

For the October 2016 intake four ‘North West Connected Health Cities’ studentships are available to support building of research capacity in Health Informatics. Fees for successful candidates will be reduced to:

UK and EU students: £3,640 (GBP)
Non-EU students: £14,350 (GBP).

All Data Science applicants who are interested in following the Health pathway should express interest in their application:. More information on available funding and also the student loan scheme is available: Funding Opportunities

Applications and Enquiries

The MSc in Data Science begins in October each year. Applications and enquiries are welcome at any time, however, those seeking any available funding should, ideally, apply early in the year.

Applications are made on-line. The form can be accessed via the link: Apply Here

Enquiries about the Health Pathway should be made in the first instance to the Statistical Inference Programme Director: Dr Deborah Costain: d.costain@lancaster.ac.uk. More general enquiries about the Data Science masters programme should be made the Data Science Director: Dr Chris Edwards: c.edwards@lancaster.ac.uk

The Future of Healthcare

Healthcare is being revolutionised through the innovative use of information. The Government, the NHS and Industry have come to appreciate the value of using data to improve both healthcare provision and to drive research into personalised treatments.

Within the NHS there is a growing appreciation of potential presented by the massive quantities of patient and service data available. Senior NHS Leaders are convinced of the advantages to be gained through the application of Data Science techniques and that specialist skills are required in this area. A revolution is starting in the way the NHS handles data and data-literate leaders are required to drive this transformation.

Within industry an understanding has grown of the need for scientists who are able to draw insight from ever-larger and more complex sources of data in order to develop targeted medicines.

New career opportunities are opening up for skilled data scientists who are ready to tackle the problems faced in the management of healthcare provision and disease research. These opportunities will enable data scientists to make a real difference to people’s lives from the earliest stages of their career. From deriving fresh insight from cancer trial data, to improving response times in A&E, and to optimising the positioning of response centres and unlocking patterns in service use, data scientists hold the key to shaping the response to 21st health challenges.

“Data Scientists are vital for the future of the NHS.”

Emma Birchall, Deputy Chief Information Officer, Salford Royal NHS Foundation Trust

www.lancaster.ac.uk/dsi/education
Data scientists are needed to transform data into meaningful insights: informing clinical decision making and driving the research that leads to the development of effective treatments and which translates into improvements in public health.

The Health Data Scientist Role

- Are you looking for a career where you can make a real difference to people’s lives?
- Can you provide the insight that allows the specialists to see patterns in disease data?
- Can you help the NHS make the best use of its resources?

An unprecedented amount of health information is now available, but organisations have struggled to use this data for the benefit of patients. Pharmaceutical companies have shared clinical trial datasets in an attempt to improve treatment; the NHS has attempted to consolidate information sources to enable greater understanding of patients’ condition. Through these efforts healthcare organisations have come to appreciate that the analytical skills needed to exploit this data are both scarce and valuable.

Data scientists are needed to enable the advantages presented by health data to be realised. Opportunities have arisen for data scientists to analyse healthcare data to enable organisations to make better decisions in research, resource management and treatment. Lancaster University has partnered with organisations, including AstraZeneca and the NHS, to provide students with the skills and experience needed to excel in this area. The Health Pathway within our Data Science masters’ programme combines computing, statistical and data analytic skills formalised with a substantive, placement-based, research project and providing graduates with the potential to transform data in to meaningful, strategic, insights into health and healthcare provision.

Course Structure

The Data Science masters course at Lancaster University consists of two terms of taught material, followed by a 12-week placement project.

In term one, all students are taught the fundamental principles of obtaining, integrating, cleaning and exploring data, building statistical models, programming in R and Java, data mining and statistical inference. Having gained competence in the fundamentals of data science, students on the Health pathway choose from a range of specialist health modules including clinical trials, epidemiology, survival analysis and genomics. More details of the course and modules offered are available in the courses web page: [Course Details](#).

<table>
<thead>
<tr>
<th>Core Modules</th>
<th>Pathway Elective Modules</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Science Fundamentals</td>
<td>Clinical Trials</td>
</tr>
<tr>
<td>Programming for Data Science</td>
<td>Principles of Epidemiology</td>
</tr>
<tr>
<td>Data Mining</td>
<td>Genomics: Technologies</td>
</tr>
<tr>
<td>Generalised Linear Models</td>
<td>and Data Analyses</td>
</tr>
<tr>
<td>Likelihood Inference</td>
<td>Environmental Epidemiology</td>
</tr>
<tr>
<td></td>
<td>Survival Analysis</td>
</tr>
<tr>
<td></td>
<td>Longitudinal Data Analysis</td>
</tr>
</tbody>
</table>

Placement Opportunities

Health pathway students will have the opportunity to complete a suitable placement project. The NHS, AstraZeneca and our other Lancaster University healthcare partners will offer a range of placement opportunities. In previous year’s projects have been undertaken to:

- Analyse cancer trial data
- Analyse clinical outcomes in A&E
- Optimise ambulance response time.

Placement projects generally attract a stipend of £3,000 and provide the experience that enables our graduates to stand out from the crowd.

Students undertaking these placements are well-placed to apply for permanent positions. Informal enquiries about placement opportunities and Lancaster University Data Science Partners can be made to Dr Simon Tomlinson: [s.tomlinson2@lancaster.ac.uk](mailto:s.tomlinson2@lancaster.ac.uk)

Career Opportunities

Health Data Scientists are in great demand in both public and private sector organisations. Lancaster’s Data Science masters’ programme interfaces computing and technology, advanced statistical methods and applied research methodology; a combination which leaves our graduates well-positioned to succeed in their chosen career: [Careers and Employability](#).

“There is a revolution taking place in the Development of Informatics services in the NHS, we need to become more savvy about how we use information and data. The post of Data Scientist is key to that”.

Rachel Dunscombe, Chief Information Officer, Salford Royal NHS Foundation Trust

“There are huge opportunities in Data Science in the NHS. We are pleased that Lancaster University is taking such an active approach.”

Chris Reynolds, Associate Director of Business Intelligence, Lancaster Teaching Hospitals