

Course Information Sheet for entry in 2023-24: Health Data Science (EPSRC Centre for Doctoral Training)



About the course

The Oxford EPSRC CDT in Health Data Science offers opportunities for doctoral study in computational statistics, machine learning and data engineering within the context of ethically-responsible health research.

The Oxford EPSRC Centre for Doctoral Training (CDT) in Health Data Science offers a four-year doctoral programme, beginning with the training year, which consists of two terms of intensive training in core data science principles and techniques followed by a third term where students undertake two 8-week research placements in two of their chosen research areas. It is expected that one of these projects will become the basis of the student's doctoral research, carried out in the following three years. Taught modules and subsequent research supervision are provided by leading academics from the departments of Computer Science (the host department), Statistics, Engineering Science, the Nuffield Department of Medicine, and the Nuffield Department of Population Health.

The first year taught modules include:

- Data Governance
- Computational Statistics
- Modern Statistical Methods
- Machine Learning
- Medical Imaging
- Deep Learning
- Epidemiology and Clinical Trials
- Research Software Engineering
- Wearables
- Ethics of Health Data Science
- Data & Process Modelling
- Databases
- Infectious Disease Epidemiology
- Pathogen Evolution and Phylodynamics
- Translational Data Science
- Genetics
- Electronic Patient Records.

A typical weekly timetable contains morning lectures from 9am to 12pm, followed by an afternoon of practical computational exercises from 1pm until 4pm.

Each term of taught modules concludes with an extended, team-based two-week data challenge where the cohort uses an at-scale data set to address a current health research area. Our data science challenges involve engagement from industry and healthcare partners such as The British Heart Foundation, NVIDIA and exchange students from our partner institutions in Berlin.

The centre is based in the Oxford Big Data Institute. The institute is an analytical hub for multi-disciplinary working at Oxford, connecting world-leading expertise in statistics, computer science, and engineering to data-driven research in medicine and population health.

The institute houses internationally recognised research groups in genomic medicine, medical image analysis, mobile and sensor data, infectious diseases, large-scale clinical trials. It is also home to the Ethox Centre and the newly established Wellcome Centre for Ethics and Humanities.

Research groups in partner departments address related challenges in data science: machine learning, knowledge representation, healthcare economics and cyber security.

Supervision

The allocation of graduate supervision is the responsibility of the Centre for Doctoral Training and it is not always possible to accommodate the preferences of incoming graduate students to work with a particular member of staff. At the start of the second term students will select from a pool of projects; these projects are proposed by Oxford faculty but students may also contact faculty and jointly propose projects. While there are always more projects than students, and typically students get matched to at

least their first choice, the centre cannot guarantee that a student will be able to work with a particular desired faculty member. At the end of summer, the student selects one of the two projects to become the basis of their dissertation.

Each student will benefit from dual supervision for the duration of their research project, with at least one of the two supervisors having a strong background in core data science. Many students will wish to pursue a project in collaboration with a partner organisation: a technology company such as Elsevier, NVIDIA, Perspectum Diagnostics, or Zegami; one of our pharmaceutical partners such as GSK, UCB, or Novartis; other groups such as the NIHR Oxford Biomedical Research Centre or the Cancer Research UK Oxford Centre, as well as the research teams in the Medical Science Division provide unique collaboration opportunities.

Students are expected to meet with supervisors on a fortnightly basis, as agreed by both parties.

Assessment

Modules are assessed in different ways, though usually through project work set by the module leader. Data Challenges are assessed through group presentations on the final day of the Data Challenge. Both project placements are assessed with a written report after the eight-week duration. Health Data Ethics is a core part of the curriculum and the doctoral dissertation. During the first year ethics will be assessed by presentation and/or written report. Students will be asked to provide a short presentation of the ethical issues arising in each of their data challenges and third term project placements. After the two project placements are completed, students are expected to defend their DPhil viva proposal in front of the directorate.

At an appropriate stage (normally after six terms), students must pass the Transfer of Status, to ensure they have the potential to gain a doctorate, in line with the University's graduate student progression guidelines. This assessment will be made on the basis of a report and oral examination.

By the end of the third year, students must pass the Confirmation of Status, which is to ensure that they are on track to complete the thesis within a reasonable timeframe.

The degree is examined by thesis and oral examination by two examiners, one of whom is normally from Oxford and one from elsewhere.

Changes to courses

The University will seek to deliver this course in accordance with the description set out above. However, there may be situations in which it is desirable or necessary for the University to make changes in course provision, either before or after registration. These may include significant changes made necessary by a pandemic (including Covid-19), epidemic or local health emergency. For further information, please see the University's Terms and Conditions (<http://www.graduate.ox.ac.uk/terms>) and our page on changes to courses (<http://www.graduate.ox.ac.uk/coursechanges>).

Expected length of course

	Full Time Only
Expected length	4 years

Costs

Annual fees for entry in 2023-24

Fee status	Annual Course fees
Home	£8,960
Overseas	£29,700

Information about course fees

Course fees are payable each year, for the duration of your fee liability (your fee liability is the length of time for which you are required to pay course fees). For courses lasting longer than one year, please be aware that fees will usually increase annually. Information about how much fees and other costs may increase is set out in the University's Terms and Conditions (<http://www.graduate.ox.ac.uk/terms>).

Course fees cover your teaching as well as other academic services and facilities provided to support your studies. Unless specified in the additional cost information (below), course fees do not cover your accommodation, residential costs or other living costs. They also don't cover any additional costs and charges that are outlined in the additional cost information.

Graduate students who have reached the end of their standard period of fee liability may be required to pay a termly University and/or a college continuation charge.

The University continuation charge, per term for entry in 2023-24 is £572, please be aware that this will increase annually. For part-time students, the termly charge will be half of the termly rate payable by full-time students.

If a college continuation charge applies (not applicable for non-matriculated courses) it is likely to be in the region of £100 to £600 per term. Please contact your college for more details.

Additional cost information

There are no compulsory elements of this course that entail additional costs beyond fees (or, after fee liability ends, continuation charges) and living costs. However, please note that, depending on your choice of research topic and the research required to complete it, you may incur additional expenses, such as travel expenses, research expenses, and field trips. You will need to meet these additional costs, although you may be able to apply for small grants from your department and/or college to help you cover some of these expenses.

Living costs

In addition to your course fees, you will need to ensure that you have adequate funds to support your living costs for the duration of your course.

The likely living costs for 2023-24 are published below. These costs are based on a single, full-time graduate student, with no dependants, living in Oxford. We provide the cost per month so you can multiply up by the number of months you expect to live in Oxford.

Likely living costs for one month

	Lower range	Upper range
Food	£300	£470
Accommodation	£715	£860
Personal items	£180	£305
Social activities	£40	£90
Study costs	£35	£80
Other	£20	£35
Total	£1,290	£1,840

Likely living costs for nine months

	Lower range	Upper range
Food	£2,700	£4,230
Accommodation	£6,435	£7,740
Personal items	£1,620	£2,745
Social activities	£360	£810
Study costs	£315	£720
Other	£180	£315
Total	£11,610	£16,560

Likely living costs for twelve months

	Lower range	Upper range
Food	£3,600	£5,640
Accommodation	£8,580	£10,320
Personal items	£2,160	£3,660
Social activities	£480	£1,080
Study costs	£420	£960
Other	£240	£420
Total	£15,480	£22,080

When planning your finances for any future years of study at Oxford beyond 2023-24, it is suggested that you allow for potential increases in living expenses of 5% or more each year – although this rate may vary significantly depending on how the national economic situation develops.

More information about how these figures have been calculated is available at www.graduate.ox.ac.uk/livingcosts.

Document accessibility

If you require an accessible version of the document please contact Graduate Admissions and Recruitment by email (graduate.admissions@admin.ox.ac.uk) or via the online form (<http://www.graduate.ox.ac.uk/ask>).