Course Information Sheet for entry in 2025-26: DPhil in Particle Physics

Course facts

Mode of study	Full Time Only
Expected length	3 to 4 years

About the course

The DPhil in Particle Physics is a research-based course of three to four years in duration. Particle physics is the study of basic constituents of matter and their interactions. This is accomplished either directly with accelerators that create the particles under study or by observing high-energy particles from outer space.

The course is hosted by the Particle Physics sub-department, one of six sub-departments of the Department of Physics. The sub-department is one of the largest in the UK and is well equipped to carry out research in a wide range of topics, from the study of new particles produced at high energy accelerators to neutrinos, dark matter and dark energy in the Universe. The work of this world-class sub-department is in experimental particle physics, particle astrophysics and accelerator physics.

As a DPhil student, you will join an existing research group which typically consists of academics, postdocs, fellows and current students. Your research work begins on day one and will be underpinned by a taught graduate course in the first year that runs in parallel. You will also have the opportunity to follow courses taught at other departments across the Maths, Physics and Life Sciences division.

Whilst working on your research project you will engage in a thorough skills training programme which includes a range of workshops and seminars in transferable skills, generic research skills and specific research techniques. There are also numerous seminars and lectures held in the department by local and visiting physicists, and you will be provided with opportunities to meet experts in various fields. There will also be opportunity for you to present your work at both formal and informal conferences, seminars and colloquia.

The world's biggest accelerator, the Large Hadron Collider (LHC) at CERN, is running and in 2012 the Higgs boson, a particle thought to give mass to all elementary particles, was discovered. The understanding of its properties is one of the main aims of the ATLAS experiment. The Oxford group is also focused on the search of new particles predicted in Supersymmetry and others beyond the Standard Model theories. Elucidation of CP violation, one of the mysteries of particle physics, is the aim of the sub-department’s other LHC experiment, LHCb. Both experiments will require you to obtain and analyse data from the highest-energy machine in the world.

The sub-department is also involved in the study of neutrino oscillations and neutrino properties at the T2K experiment in Japan, MicroBooNe and DUNE in the USA, and at the Sudbury Neutrino Observatory (SNO+) in Canada.

The sub-department has participated in direct searches for dark matter for many years and studentships are now available associated to the LZ project. Recently it has begun a programme in collaboration with the sub-department of astrophysics to elucidate the nature of dark energy with the Legacy Survey of Space and Time (LSST) of the Vera C Rubin Observatory.

The future of particle physics relies on the development of new instruments for detecting particles and novel ideas in accelerator physics. The sub-department is heavily involved in the development of these areas. It has outstanding facilities to build the new silicon detectors needed for the luminosity upgrade of the LHC and other applications.

The sub-department is playing a major role in the ProtoDune experimental program at CERN, which is designed to test and validate the Liquid Argon Time Projection Chamber technologies for the construction of the DUNE Far Detector at the Sanford Underground Research Facility (SURF).

Attendance

The course is full-time and requires attendance in Oxford. Full-time students are subject to the University's Residence requirements.

Provision exists for students on some courses to undertake their research in a ‘well-founded laboratory’ outside of the University. This may require travel to and attendance at a site that is not located in Oxford. Where known, existing collaborations will be outlined on this page. Please read the course information carefully, including the additional information about course fees and costs.

The sub-department’s experiments are carried out at facilities around the world, including Switzerland, Japan, the USA and Canada. Depending on the project, you will often be able to spend significant amounts of time away at the experimental site for your research. Laboratories in Oxford and experiments at overseas facilities provide access to a high-tech environment

and excellent research training, directly applicable to a broad range of fields. If appropriate, you will spend your second year on-site at your experiment.

Resources to support your study

As a graduate student, you will have access to the University's wide range of world-class resources including libraries, museums, galleries, digital resources and IT services.

The Bodleian Libraries is the largest library system in the UK. It includes the main Bodleian Library and libraries across Oxford, including major research libraries and faculty, department and institute libraries. Together, the Libraries hold more than 13 million printed items, provide access to e-journals, and contain outstanding special collections including rare books and manuscripts, classical papyri, maps, music, art and printed ephemera.

The University's IT Services is available to all students to support with core university IT systems and tools, as well as many other services and facilities. IT Services also offers a range of IT learning courses for students, to support with learning and research.

You will usually be allocated your own desk in a shared office or laboratory. As a DPhil student, you will be provided with appropriate computing support to conduct your research. You will be given accounts on central Linux and Windows servers and, once you arrive at Oxford, you will be able to select the machine and operating system which works the best in your research group. Additionally, if you are working on a computationally intensive project, you will have appropriate access to the departmental cluster computers and national facilities.

During time spent away at the experimental site (if applicable for your project), a similar level of provision will be available.

Supervision

The allocation of graduate supervision for this course is the responsibility of the Department of Physics and it is not always possible to accommodate the preferences of incoming graduate students to work with a particular member of staff. Under exceptional circumstances a supervisor may be found outside the Department of Physics.

You will be allocated at least one supervisor who you will have the opportunity to meet with. They should be your primary contact for guidance throughout your research degree. Meetings can take place in person, via email, or video conferencing.

Assessment

All students will be initially admitted to the status of Probationer Research Student (PRS). Within a maximum of six terms as a PRS student and normally by the fourth term you will be expected to apply for transfer of status from Probationer Research Student to DPhil status.

A successful transfer of status from PRS to DPhil status will require satisfactory attendance and completion of problem sets during your first two terms, and submission of a report and thesis outline. Submission on a report and thesis outline. Students who are successful at transfer will also be expected to apply for and gain confirmation of DPhil status within nine terms of admission, to show that your work continues to be on track.

Both milestones normally involve an interview with two or more assessors other than your supervisor and therefore provide important experience for the final oral examination (ie the viva).

The actual DPhil viva requires you to submit a substantial and original thesis not exceeding 250 pages after three or at most four years from the date of admission. To be successfully awarded a DPhil in particle physics you will need to defend your thesis orally (*viva voce*) in front of two appointed examiners.

Changes to this course

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 you commence your course. These might include significant changes made necessary by any pandemic, 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).

Costs

Annual fees for entry in 2025-26

Fee status	Annual Course fees
Home	£10,070
Overseas	£33,370

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 2025-26 is £672, 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. Please contact your college for more details, including information about whether your college's continuation charge is applied at a different rate for part-time study.

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 and any additional course-specific costs, 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 the 2025-26 academic year 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	£330	£515
Accommodation	£790	£955
Personal items	£200	£335
Social activities	£45	£100
Study costs	£40	£90
Other	£20	£40
Total	£1,425	£2,035

Likely living costs for nine months

	Lower range	Upper range
Food	£2,970	£4,635
Accommodation	£7,110	£8,595
Personal items	£1,800	£3,015
Social activities	£405	£900
Study costs	£360	£810
Other	£180	£360
Total	£12,825	£18,315

Likely living costs for twelve months

	Lower range	Upper range
Food	£3,960	£6,180
Accommodation	£9,480	£11,460
Personal items	£2,400	£4,020
Social activities	£540	£1,200
Study costs	£480	£1,080
Other	£240	£480
Total	£17,100	£24,420

When planning your finances for any future years of study at Oxford beyond the 2025-26 academic year, it is suggested that you allow for potential increases in living expenses of 4% each year – although this rate may vary depending on the national economic situation.

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

Document accessibility

If you require a more accessible version of this 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/form).