

## Physics and Philosophy Information Sheet for entry in 2021

This course combines the most rigorous and fundamental subjects in the sciences and the arts. Physics is concerned with unravelling the complexities of the universe from the smallest to the largest scale. Philosophy deals with foundational questions of the most general kind: what there is, what we know and how we came to know it, and how we ought to act and structure our lives. Central to both subjects is the development and application of clear and precise thinking to foundational problems, the questioning of received wisdom and the critical articulation of ideas which aim for an understanding of how things are, in the broadest possible terms.

Physics and Philosophy are historically intertwined and each continues to contribute to developments in the other. Philosophy played a crucial role in the two revolutions of 20th-century physics – namely, relativity and quantum mechanics – and continues to contribute both to foundational research in theoretical physics and to the articulation and critique of scientific method. Conversely, discoveries in physics provide profound implications for philosophical inquiry, such as the nature of space and time and the behaviour of matter at the quantum realm. Students on this course can expect to investigate not only central developments in both subjects, but also this interplay.

Oxford has one of the largest physics departments in the UK, with over 100 academics leading research that spans the breadth of physics. This expertise ensures the curriculum is updated in the light of developments in research. The Philosophy Faculty is the largest in the UK, with more than 70 full-time members; it admits around 450 undergraduates annually to read the various degrees involving Philosophy.

The Oxford research group in Philosophy of Physics is the largest in the world, with interests ranging from classical space-time theories and foundations of classical statistical mechanics, to quantum mechanics, quantum field theory and quantum gravity.

Philosophy of Physics runs through the first three years of the course. In the first year students delve into 18th-century investigations into matter and motion; in Years 2 and 3, they investigate the philosophical foundations of relativity and quantum mechanics. The fourth-year MPhysPhil options bring you to the threshold of current research. In this year, students may specialise in either Physics or Philosophy, or continue with a combination, including advanced study in the Philosophy of Physics. Alternatively, students may complete the course in three years, leaving with a BA.

### A typical week

Your work will be divided between independent study, tutorials, two or three classes and about ten lectures each week. Independent study (reading for and writing essays, completing problem sets) will take up the majority of your working time. Tutorials typically take the form of 2-4 students discussing themes arising from essays or problem sets with a tutor in the students' college. Lectures and classes are typically held in either the Department of Physics or Faculty of Philosophy.



Tutorials are usually 2-4 students and a tutor. Class sizes may vary depending on the options you choose. There would usually be no more than around 10 students though classes for some of the more popular papers may be up to 20 students. Most tutorials, classes, and lectures are delivered by staff who are tutors in their subject. Many are world-leading experts with years of experience in teaching and research. Some teaching may also be delivered by postgraduate students who are usually studying at doctorate level.

To find out more about how our teaching year is structured, visit our [Academic Year](#) page.

**Course structure**

YEAR 1	
<p><b>COURSES</b></p> <p>Physics:</p> <ul style="list-style-type: none"> <li>• Classical mechanics and special relativity</li> <li>• Mathematical methods</li> <li>• Differential equations and waves</li> </ul> <p>Philosophy:</p> <ul style="list-style-type: none"> <li>• Elements of deductive logic</li> <li>• General philosophy</li> <li>• Introductory philosophy of physics</li> </ul>	<p><b>ASSESSMENT</b></p> <p>First University examinations: three written papers in Physics; two written papers in Philosophy</p>
YEAR 2	
<p><b>COURSES</b></p> <p>Physics:</p> <ul style="list-style-type: none"> <li>• Thermal physics</li> <li>• Electromagnetism</li> <li>• Quantum physics</li> <li>• Mathematical methods</li> <li>• Physics practicals</li> </ul> <p>Philosophy:</p> <ul style="list-style-type: none"> <li>• Early modern philosophy <i>or</i> Knowledge and reality</li> <li>• Philosophy of special relativity</li> </ul>	<p><b>ASSESSMENT</b></p> <p>Final University examinations, Part A: three papers in Physics; satisfactory lab work</p>
YEAR 3	
<p><b>COURSES</b></p> <p>Core topics:</p> <ul style="list-style-type: none"> <li>• Physics - choose two of the following:                             <ul style="list-style-type: none"> <li>○ Symmetry and relativity</li> <li>○ General relativity</li> <li>○ Classical mechanics</li> </ul> </li> </ul>	<p><b>ASSESSMENT</b></p> <p>Final University examinations, Part B: three or four written papers in Philosophy; two or four subjects in Physics</p>

<ul style="list-style-type: none"> <li>• Philosophy - compulsory topics:             <ul style="list-style-type: none"> <li>○ Philosophy of science</li> <li>○ Philosophy of quantum mechanics</li> </ul> </li> </ul> <p>Extra subjects, choose:</p> <ul style="list-style-type: none"> <li>• <i>Either</i> two Physics papers and/or projects from:             <ul style="list-style-type: none"> <li>○ The remaining core subject not chosen</li> <li>○ Atomic and laser physics</li> <li>○ Computational and experimental projects</li> <li>○ Condensed matter physics</li> <li>○ Fluids</li> <li>○ Nuclear and particle physics</li> </ul> </li> <li>• <i>Or</i> one Philosophy paper from a range of options</li> </ul>	
<b>YEAR 4</b>	
<p><b>COURSES</b></p> <p>Three units chosen in any combination from the lists for Physics and Philosophy, including an advanced philosophy of physics option.</p>	<p><b>ASSESSMENT</b></p> <p>Final University examinations, Part C: a mix of three written papers and essays, or thesis (in Philosophy), or project (in Physics)</p>

### MMathPhys YEAR 4

The Physics and Mathematics Departments jointly offer an integrated master’s level course in Mathematical and Theoretical Physics. Physics and Philosophy students are able to apply for transfer to a fourth year studying entirely mathematical and theoretical physics, completing their degree with an MMathPhys. The course offers research-level training in: Particle physics, Condensed matter physics, Astrophysics, Plasma physics and Continuous media.

The University will seek to deliver each course in accordance with the descriptions 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. For further information, please see the [University’s Terms and Conditions](#).

### Teaching delivery

At the time of writing course information sheets for 2021/22 entry, the COVID-19 pandemic was still impacting the University. A range of measures have been put in place to comply with Government legislation and guidance in response to the pandemic, and to help keep students, staff and the wider community safe.

## UNDERGRADUATE ADMISSIONS AND OUTREACH

University Offices, Wellington Square, Oxford OX1 2JD



Inevitably, some changes have been necessary to teaching and student services during the pandemic (for example, a greater amount of online teaching and examinations, and restrictions on numbers allowed to access facilities at one time).

Whatever the circumstances in the 2021/22 academic year, the University will deliver core services and learning outcomes for each course, even though the modes of delivery may change.

All course information sheets should be read in that context, and we will keep offer holders and students regularly informed if circumstances change. Further details are available on our [website](#) and within the [Student Terms and Conditions](#).

### Fees

These annual fees are for full-time students who begin this undergraduate course here in 2021. Information about how much fees and other costs may increase is set out in the University's Terms and Conditions.

Please note that while the University sets out its annual fees as a single figure, this is a combined figure for both your University and college fees. More information is provided in your [Terms and Conditions](#).

Fee status	Annual Course fees
Home (UK, Republic of Ireland, Channel Islands & Isle of Man)	£9,250
Overseas (including most EU students— see Note below)	£31,230

**Note:** Following the UK's departure from the EU, most EU students starting a course in 2021/22 will no longer be eligible to pay fees at the 'Home' rate and will instead be charged the higher 'Overseas' rate. This change will not apply to Irish nationals living in the UK or Ireland, who will continue to be charged fees at the 'Home' rate for the duration of their course.

The government has issued guidance stating that EU, other EEA, and Swiss nationals who have been granted settled or pre-settled status in the UK under the EU settlement scheme may be eligible for 'Home fee' status and student loan support, subject to meeting residency requirements. However, until the government formally updates its fee status regulations the University is unable to confirm fee statuses for students who may qualify on this basis. We will contact you directly if we need further information from you to determine your fee status.

Please refer to the [Undergraduate fee status](#) and the [Oxford and the EU](#) pages for more information.

### Living costs

Your living costs will vary significantly dependent on your lifestyle. These are estimated to be between £1,175 and £1,710 per month in 2021-22. Each year of an undergraduate course usually consists of three terms of eight weeks each but you may need to be in Oxford for longer. As a guide, you may wish to budget over a nine-month period to ensure you also have sufficient funds during the holidays to meet essential costs.

### Living costs breakdown

	Per month		Total for 9 months	
	Lower range	Upper range	Lower range	Upper range
Food	£280	£400	£2,520	£3,600
Accommodation (including utilities)	£655	£790	£5,895	£7,110
Personal items	£130	£250	£1,170	£2,250
Social activities	£45	£115	£405	£1,035
Study costs	£45	£100	£405	£900
Other	£20	£55	£180	£495
<b>Total</b>	<b>£1,175</b>	<b>£1,710</b>	<b>£10,575</b>	<b>£15,390</b>

In order to provide these likely living costs, the University and the Oxford University Students' Union conducted a living costs survey to complement existing student expenditure data from a variety of sources including the UK government's Student Income and Expenditure Survey and the National Union of Students (NUS). The likely lower and upper ranges above are based on a single student with no dependants living in college accommodation (including utility bills) and are provided for information only.

When planning your finances for future years of study at Oxford beyond 2021-22, you should allow for an estimated increase in living expenses of 3% each year.

### Document accessibility

If you require an accessible version of the document, please contact Undergraduate Admissions by email ([uao.comms@admin.ox.ac.uk](mailto:uao.comms@admin.ox.ac.uk)) or via the online form (<http://www.ox.ac.uk/ask>).

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*Please note, at the time of publishing the CIS, further details regarding the availability and eligibility of financial support for some EU students with settled or pre-settled status remained outstanding. Confirmation about funding arrangements for the year abroad were also outstanding. Any updates impacting students will be published on the Oxford and the EU webpage.*