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### Physics Course Information Sheet for entry in 2023

Physics is concerned with the study of the universe from the smallest to the largest scale: it is about unravelling its complexities to discover the way it is and how it works. Discoveries in physics have formed the foundation of countless technological advances and play an important role in many scientific areas. Many techniques used in medical imaging, nanotechnology and quantum computing are derived from physics instrumentation. Even the World Wide Web was a spin-off from the information processing and communications requirements of high-energy particle physics. The contributions of physics to solving global problems such as energy production, environmental protection, global warming and public health are essential and have an enormous impact on our society.

Oxford has one of the largest university physics departments in the UK, with an outstanding and very diverse research programme in six sub-departments:

- Astrophysics
- Atmospheric, Oceanic and Planetary Physics
- Atomic and Laser Physics
- Condensed Matter Physics (including Biophysics)
- Particle Physics
- Theoretical Physics.

Physics at Oxford is challenging and mathematical with a strong emphasis on fundamental concepts such as optics and relativity. There are two undergraduate courses, an MPhys and the BA. All applicants apply for the four-year MPhys in the first instance. The fourth-year MPhys option courses bring you to the threshold of current research, and can lead to subject specialism. The department is equipped with state-of-the-art lecture facilities and teaching laboratories. Tutorials give students direct and regular access to physicists actively involved in research and provide an opportunity to explore scientific ideas with experts in the field.

#### Project work/international opportunities

In the third year, all students carry out a short project in the teaching laboratories. Students on both the BA and MPhys have the opportunity to do industry projects investigating a real physics problem. There is further flexibility to undertake computational and experimental projects. A wide choice of fourth-year MPhys projects is available across all six physics sub-departments.

#### A typical week

In the first year your time will be equally divided between mathematics and physics, with about ten lectures and two tutorials a week, plus one day a week working on experimental physics in the practical laboratories. In the second and third years the core and mainstream physics topics are

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covered in tutorials and small group classes. Practical work is also done during the year. In the fourth year you will take two major options and the MPhys project.

Tutorials are usually given in colleges with 2-4 students and a tutor. Fourth year class sizes may vary depending on the options you choose. There would usually be no more than around 20 students though classes for some of the more popular papers may be up to 40 students.

Most tutorials, classes, and lectures are delivered by staff who are also college 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	
<b>CURRENT COURSES</b> <ul style="list-style-type: none"><li>• Classical mechanics and special relativity</li><li>• Electromagnetism, circuit theory and optics</li><li>• Mathematical methods I</li><li>• Differential equations and waves</li></ul> Short options, for example: <ul style="list-style-type: none"><li>• Astronomy</li><li>• Complex analysis</li><li>• Quantum ideas</li></ul>	<b>ASSESSMENT</b> <p>First University examinations: four written papers; short option paper; satisfactory laboratory work</p>

YEAR 2	
<b>CURRENT COURSES</b> <ul style="list-style-type: none"><li>• Thermal physics</li><li>• Electromagnetism and optics</li><li>• Quantum physics</li><li>• Mathematical methods II</li></ul> Short options, for example: <ul style="list-style-type: none"><li>• Classical mechanics</li><li>• Climate physics</li><li>• Introduction to biological physics</li></ul>	<b>ASSESSMENT</b> <p>Final University examinations, Part A (BA and MPhys): three written papers; short option paper; laboratory work; individual presentation</p>

### YEAR 3

#### CURRENT COURSES

- Fluids
- Symmetry and relativity
- Atomic and laser physics
- Nuclear and particle physics
- General relativity
- Condensed-matter physics
- Computational and experimental projects

Short options, for example:

- Advanced quantum mechanics
- Classical mechanics
- Plasma physics

#### ASSESSMENT

Final University examinations, Part B:  
MPhys: Part A plus up to five written papers, short option paper, mini project, laboratory work; BA: Part A plus up to four written papers, short option paper, mini project, laboratory work, project report, optional industrial project

### YEAR 4

#### RESEARCH

Project and two option courses:

- MPhys project

Current major options:

- Astrophysics
- Laser science and quantum information processing
- Condensed matter
- Particle physics
- Atmospheres and oceans
- Theoretical physics
- Biological physics

#### ASSESSMENT

Final University examinations, Part C  
(MPhys): project report; two major option papers

*Exams are taken in June at the end of each year of the courses. Most written papers are of 2.5 or 3 hours duration. Short options are shared across Years 1–3 and are examined by a 1.5 hour paper; the titles shown are illustrative and may change from year to year of the course. More information about current options is available on the [Physics website](#).*

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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. For further information, please see the University's [Terms and Conditions](#).

### MMathPhys Year 4

The Physics and Mathematics Departments jointly offer an integrated master's level course in [Mathematical and Theoretical Physics](#). Physics 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.

### Fees

These annual fees are for full-time students who begin this undergraduate course here in 2023.

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)	£44,240

**Note:** Irish nationals living in the UK or Ireland, EU, other EEA, and Swiss nationals who have been granted settled or pre-settled status in the UK under the EU settlement scheme are eligible for 'Home fee' status and student loan support, subject to meeting residency requirements. We will contact you directly if we need further information from you to determine your fee status.

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

### Living costs

Living costs for the academic year starting in 2023 are estimated to be between £1,290 and £1,840 for each month you are in Oxford. Our academic year is made up of three eight-week terms, so you would not usually need to be in Oxford for much more than six months of the year but 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	£300	£470	£2,700	£4,230
Accommodation (including utilities)	£715	£860	£6,435	£7,740
Personal items	£180	£305	£1,620	£2,745
Social activities	£40	£90	£360	£810
Study costs	£35	£80	£315	£720
Other	£20	£35	£180	£315
<b>Total</b>	<b>£1,290</b>	<b>£1,840</b>	<b>£11,610</b>	<b>£16,560</b>

In order to provide these likely living costs (which are rounded to the nearest £5), the University and the Oxford SU 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 current economic climate and high national rate of inflation make it very hard to estimate potential changes to the cost of living over the next few years. When planning your finances for any future years of study in 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. UK inflationary increases will be kept under review and the [Living costs webpage](#) updated.

### Additional Fees and Charges Information for Physics

There are no compulsory costs for this course beyond the fees shown above and your living costs.