

## Course Information Sheet for entry in 2021-22: MSc in Mathematical and Theoretical Physics



### About the course

The course provides a high-level, internationally competitive training in mathematical and theoretical physics, right up to the level of modern research. It covers the following main areas:

The course concentrates on the main areas of modern mathematical and theoretical physics: elementary-particle theory, including string theory, condensed matter theory (both quantum and soft matter), theoretical astrophysics, plasma physics and the physics of continuous media (including fluid dynamics and related areas usually associated with courses in applied mathematics in the UK system) and mathematical structures underlying physical theory. If you are a physics student with a strong interest in theoretical physics or a mathematics student keen to apply high-level mathematics to physical systems and their underpinning mathematics, both pure and applied, this is a course for you.

The course offers considerable flexibility and choice; you will be able to choose a path reflecting your intellectual tastes or career choices. This arrangement caters to you if you prefer a broad theoretical education across subject areas or if you have already firmly set your sights on one of the subject areas, although you are encouraged to explore across sub-field boundaries.

The MSc offers a substantial opportunity for independent study and research in the form of an optional dissertation which may be worth a single or double unit depending on the amount of work involved.

### Pattern of learning and teaching

You will have to attend at least ten units' worth of courses, where one unit corresponds to a 16-hour lecture course or equivalent.

Depending on how many courses you take in total and how they split between terms, you can expect to attend two, three or four (or, in exceptional cases, five) lecture courses per term. Each lecture course has roughly two one hour lectures per week supplemented by roughly four 90 minute classes per term.

Outside of the dissertation, the remainder of your study time in the first two terms should be spent on self-study, consolidating on the material covered in lectures, working through the problem sheets set for each class and working independently on your dissertation.

### Dissertation

You can opt to offer a dissertation as part of your ten units.

The dissertation is undertaken under the guidance of a supervisor and will typically involve investigating and writing in a particular area of mathematics or physics, without the requirement (while not excluding the possibility) of obtaining original results. A dissertation gives students the opportunity to develop broader transferable skills in the processes of organising, communicating, and presenting their work, and will equip students well for further research or for a wide variety of other careers.

For single unit dissertations you can roughly expect a one hour meeting with your dissertation supervisor at the end of the first term, followed by a further three one hour meetings in the second term. Double unit dissertations would have roughly twice this number of meetings.

### Supervision

The allocation of graduate supervision for this course is the responsibility of the Mathematical Institute and 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 Mathematical Institute and Department of Physics.

### Assessment

Your performance will be assessed by one or several of the following means:

- invigilated written exams
- course work marked on a pass/fail basis
- take-home exams

- mini-projects due shortly after the end of the lecture course.

The modes of assessment for a given course are decided by the course lecturer and will be published at the beginning of each academic year. As a general rule, foundational courses will be offered with an invigilated exam while some of the more advanced courses will typically be relying on the other assessment methods mentioned above. In addition, you will be required to give an oral presentation towards the end of the academic year which will cover a more specialised and advanced topic related to one of the subject areas of the course. At least four of the ten units must be assessed by an invigilated exam and, therefore, have to be taken from lecture courses which provide this type of assessment. A further three units must be assessed by invigilated written exam, take-home exam or mini-project. Apart from these restrictions, you are free to choose from the available programme of lecture courses.

### 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	9 months

## Costs

### Annual fees for entry in 2021-22

Fee status	Annual Course fees
Home (UK, Republic of Ireland, Channel Islands & Isle of Man)	£10,550
Overseas (including EU)	£27,460

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.

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.

### Additional cost information

There are no compulsory elements of this course that entail additional costs beyond fees and living costs. However, as part of your course requirements, you may need to choose a dissertation, a project or a thesis topic. Please note that, depending on your choice of 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 2021-22 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 2021-22

	Likely living costs for 1 month		Likely living costs for 9 months		Likely living costs for 12 months	
	Lower range	Upper range	Lower range	Upper range	Lower range	Upper range
<b>Food</b>	£280	£400	£2,520	£3,600	£3,360	£4,800
<b>Accommodation</b>	£655	£790	£5,895	£7,110	£7,860	£9,480
<b>Personal items</b>	£130	£250	£1,170	£2,250	£1,560	£3,000
<b>Social activities</b>	£45	£115	£405	£1,035	£540	£1,380
<b>Study costs</b>	£45	£100	£405	£900	£540	£1,200
<b>Other</b>	£20	£55	£180	£495	£240	£660
<b>Total</b>	£1,175	£1,710	£10,575	£15,390	£14,100	£20,520

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

More information about how these figures have been calculated is available at [www.graduate.ox.ac.uk/livingcosts](http://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](mailto:graduate.admissions@admin.ox.ac.uk)) or via the online form (<http://www.graduate.ox.ac.uk/ask>).