



## Course Information Sheet for entry in 2020-21

### MSc in Mathematical Modelling and Scientific Computing

#### About the course

This one-year master's course provides training in the application of mathematics to a wide range of problems in science and technology. Emphasis is placed on the formulation of problems, on the analytical and numerical techniques for a solution and the computation of useful results.

The course consists of both taught courses and a dissertation. To complete the course you must complete 13 units.

There are four core courses which you must complete (one unit each), which each usually consist of 24 lectures, classes and an examination. There is one course on mathematical methods and one on numerical analysis in both Michaelmas term and Hilary term. Each course is assessed by written examination in Week 0 of the following term.

Additionally, you must choose at least one special topic in the area of modelling and one in computation (one unit each). There are around 25 special topic courses to choose from, spread over all three academic terms, each usually consisting of 12 to 16 lectures and a mini project, which culminates in a written report of up to 20 pages. Topics covered include mathematical biology, fluid mechanics, perturbation methods, the mathematics of data, numerical solution of differential equations and scientific computing.

You must also undertake at least one case study in mathematical modelling and one in scientific computing (one unit each), normally consisting of four weeks of group work, an oral presentation and a report delivered in Hilary term.

There is also a dissertation (four units) of around 40 to 50 pages, which does not necessarily need to represent original ideas. Since there is another MSc focussed on mathematical finance specifically, the MSc in Mathematical and Computational Finance, you are not permitted to undertake a dissertation in this field.

You will normally accumulate four units in core courses, three units in special topics, two units in case studies and four units in the dissertation. In addition, you will usually attend classes in mathematical modelling, practical numerical analysis and additional skills during Michaelmas term.

In the first term, students should expect their weekly schedule to consist of around seven hours of core course lectures and seven hours of modelling, practical numerical analysis and additional skills classes, then a further two hours of lectures for each special topic course followed. In addition there are about three hours of problem solving classes to go through core course exercises and students should expect to spend time working through the exercises then submitting them for marking prior to the class. There are slightly fewer contact hours in the second term, but students will spend more time working in groups on the case studies.

In the third term there are some special topic courses, including one week intensive computing courses, but the expectation is that students will spend most of the third term and long vacation working on their dissertations. During this time, students should expect to work hours that are equivalent to full-time working hours, although extra hours may occasionally be needed. Students are expected to write special topic and case study reports during the Christmas and Easter vacations, as well as revising for the core course written examinations.

#### Supervision

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

You will be assigned an initial supervisor on arrival in Oxford whose role is to act as an academic advisor during the first two terms of the course. In the third term, your supervisor will usually change when you start work on your dissertation.

#### 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. For further information, please see the University's Terms and Conditions.

**Expected length of course**

<b>Mode of study</b>	Full Time Only
<b>Expected length</b>	12 months

## Costs

### Annual fees for entry in 2020-21

Fee status	Annual Course fees
Home/EU (including Islands)	£10,145
Overseas	£26,405

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 2020-21 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 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>	£270	£385	£2,430	£3,465	£3,240	£4,620
<b>Accommodation</b>	£630	£760	£5,670	£6,840	£7,560	£9,120
<b>Personal items</b>	£130	£245	£1,170	£2,205	£1,560	£2,940
<b>Social activities</b>	£45	£110	£405	£990	£540	£1,320
<b>Study costs</b>	£40	£95	£360	£855	£480	£1,140
<b>Other</b>	£20	£55	£180	£495	£240	£660
<b>Total</b>	£1,135	£1,650	£10,215	£14,850	£13,620	£19,800

When planning your finances for any future years of study at Oxford beyond 2020-21, 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).