

Course Information Sheet for entry in 2025-26: MSc in Mathematical and Computational Finance



Course facts

Mode of study	Full Time Only
Expected length	10 months

About the course

The MSc in Mathematical and Computational Finance provides you with a strong mathematical background and the skills necessary to apply your expertise to the solution of problems.

You will develop skills to formulate mathematical problems that are based on the needs of the financial industry. You will carry out relevant mathematical and financial analysis, develop and implement appropriate tools to present and interpret model results.

The course lays the foundation for further research in academia or for a career as a quantitative analyst in a financial or other institution.

Structure and content

Term one

You will take four introductory courses in the first week. The introductory courses cover partial differential equations, probability and statistics, financial markets and instruments, and Python.

The first term will then focus on compulsory core material, offering 64 hours of lectures and 24 hours of classes, plus one compulsory computing course offering 16 hours of lectures.

Core courses

- Stochastic Calculus (16 lectures, and 4 classes of 1.5 hours each)
- Financial Derivatives (16 lectures, and 4 classes of 1.5 hours each)
- Numerical Methods (16 lectures, and 4 classes of 1.5 hours each)
- Statistics and Financial Data Analysis (16 lectures, and 4 classes of 1.5 hours each)

Computing course

- Financial computing with C++ I (16 hours of lectures, plus 4 classes of 2 hours each over weeks 1-9)

Term two

The second term will be a combination of core material, offering 48 hours of lectures (18 hours of classes) and 48 hours of electives.

Core courses

- Deep Learning (16 lectures, and 4 classes of 1.5 hours each)
- Quantitative Risk Management (8 lectures, and 2 classes of 1.5 hours each)
- Stochastic Control (8 lectures, and 2 classes of 1.5 hours each)
- Fixed Income (16 lectures, and 4 classes of 1.5 hours each)

Elective courses

A number of elective courses will be offered, of which you will choose four options. Courses usually offered include:

- Advanced Volatility Modelling (8 lectures, and 2 classes of 1.5 hours each)
- Advanced Monte Carlo Methods (8 lectures, and 2 classes of 1.5 hours each)
- Advanced Topics in Computational Finance (8 lectures, and 2 classes of 1.5 hours each)
- Asset Pricing (8 lectures, and 2 classes of 1.5 hours each)
- Market Microstructure and Algorithmic Trading (8 lectures, and 2 classes of 1.5 hours each)
- Decentralised Finance (8 lectures, and 2 classes of 1.5 hours each)

Computing course

- Financial computing with C++ II (24 hours of lectures and classes)

Term three

The third term is mainly dedicated to a dissertation project which is to be written on a topic chosen in consultation with your supervisor. This may be prepared in conjunction with an industry internship.

Attendance

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

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.

The Mathematical Institute's home is the purpose-built Andrew Wiles Building, opened in 2013. This provides ample teaching facilities for lectures, classes and seminars. The Mathematical Institute provides IT support, and students can use the department's Whitehead Library, with an extensive range of books and journals.

In addition to the common room, where graduate students regularly gather for coffee and other social occasions, there is also a café in the Andrew Wiles Building.

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.

Assessment

The examination will consist of the following elements:

- Three written examinations assessing the core material in the first and second terms
- One written examination assessing elective material in the second term
- Two projects assessing one of the core courses in the first term and one of the core courses in the second term
- Two practical examinations assessing two courses in financial computing with C++
- One dissertation in the third term.

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	£48,640
Overseas	£48,640

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.

Deposits

If your application is successful, you will be asked to pay a deposit against your course fees at the application stage as a condition of your offer. The deposit amount and date by which payment must be made are shown below.

Fee status	Annual Course fees
£7,300	Between 14 and 31 days from the date on the initial offer letter. The date will be confirmed in the offer letter.

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 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>).