

Mathematics and Computer Science Information Sheet for entry in 2021

This joint degree offers the opportunity to combine an appreciation of mathematical reasoning with an understanding of computing. Mathematics is a fundamental intellectual tool in computing, but computing is increasingly used as a key component in mathematical problem-solving.

The course concentrates on areas where mathematics and computing are most relevant to each other, emphasising the bridges between theory and practice. It offers opportunities for potential computer scientists both to develop a deeper understanding of the mathematical foundations of their subject and to acquire a familiarity with the mathematics of application areas where computers can solve otherwise intractable problems. It also gives mathematicians access to both a practical understanding of the use of computers and a deeper understanding of the limits on the use of computers in their own subject.

The first year and part of the second year of the course are spent acquiring a firm grounding in the core topics from both subjects; students are then free to choose options from a wide range of mathematics and computer science subjects. In the second year, students take part in a group design practical, which may be sponsored by industry.

A typical week

The typical weekly timetable for a student in Mathematics and Computer Science is similar to that for [Computer Science](#) or [Mathematics](#).

Tutorials are usually 2-4 students with a tutor. Class sizes may vary depending on the options you choose. There would usually be around 8-12 students though classes for some of the more popular papers may be larger. Lectures may be up to 100 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 postdoctoral researchers or postgraduate students who are studying at doctorate level.

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



Course structure

Mathematics and Computer Science can be studied for three years, leading to the award of a BA degree, or for four years, leading to the award of Master of Mathematics and Computer Science. The fourth year of the Mathematics and Computer Science degree provides the opportunity to study advanced topics and undertake a more in-depth research project. Students do not need to choose between the three-year and four-year options when applying; all students apply for the four-year course, and then decide at the start of the third year whether they wish to continue to the fourth year (which is subject to achieving a 2:1 at the end of the third year).

YEAR 1	
<p>COURSES</p> <p>Core Mathematics (50%):</p> <ul style="list-style-type: none"> • Analysis • Continuous maths • Groups and group actions • Introduction to complex numbers • Introduction to university maths • Linear algebra • Probability <p>Core Computer Science (50%):</p> <ul style="list-style-type: none"> • Design and analysis of algorithms • Ethics and responsible investing • Functional programming • Imperative programming 	<p>ASSESSMENT</p> <p>Five exam papers</p>
YEAR 2	
<p>COURSES</p> <p>Core Computer Science (25%):</p> <ul style="list-style-type: none"> • Algorithms • Models of computation • Group design practical <p>Core Mathematics (30%):</p> <ul style="list-style-type: none"> • Linear algebra • Complex analysis • Metric spaces <p>Options in Mathematics (20%)</p> <p>Options in Computer Science (25%)</p>	<p>ASSESSMENT</p> <p>Six exam papers (two Computer Science and four Mathematics)</p>
YEAR 3	
<p>COURSES</p> <p>Mathematics</p> <p>Options including:</p>	<p>ASSESSMENT</p> <p>Up to ten exam papers</p>



<ul style="list-style-type: none"> • Number theory • Communication theory <p>Computer Science Options including:</p> <ul style="list-style-type: none"> • Computer security • Machine learning • Computational complexity • Lambda calculus and types 	
YEAR 4	
<p>COURSES</p> <p>Mathematics Advanced options including:</p> <ul style="list-style-type: none"> • Model theory • Category theory • Lie groups • Probabilistic combinatorics <p>Computer Science Advanced options including:</p> <ul style="list-style-type: none"> • Advanced topics in machine learning • Computational game theory • Computational learning theory • Automata, logic and games • Quantum computer science • Concurrent algorithms and data structures • Advanced security 	<p>ASSESSMENT</p> <p>Written or take-home exams plus a dissertation or project report. Currently a 2:1 is required to continue to Year 4.</p>

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.

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).

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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)	£37,510

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

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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
Total	£1,175	£1,710	£10,575	£15,390

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) or via the online form (<http://www.ox.ac.uk/ask>).

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

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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.