



Mathematics and Computer Science Information Sheet for entry in 2019

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, many of which are 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 or four-year option when applying; all students apply for a 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).

1st year	
<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 	<p>Assessment</p> <p>Five exam papers</p>



<ul style="list-style-type: none"> • Probability <p>Core Computer Science (50%)</p> <ul style="list-style-type: none"> • Design and analysis of algorithms • Functional programming • Imperative programming 	
<p>2nd year</p>	
<p>Courses</p> <p>Computer Science (25%)</p> <ul style="list-style-type: none"> • Algorithms • Models of computation <p>Core Mathematics (30%)</p> <ul style="list-style-type: none"> • Linear algebra • Complex analysis • Metric spaces <p>Options in Mathematics (20%) and options in Computer Science (25%)</p>	<p>Assessment</p> <p>Six exam papers (two Computer Science and four Mathematics)</p>
<p>3rd year</p>	
<p>Courses</p> <p>Mathematics options including:</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 	<p>Assessment</p> <p>Up to ten exam papers</p>
<p>4th year</p>	
<p>Research</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"> • Computer animation • Computational game theory • Computational learning theory • Automata, logic and games • Quantum computer science • Concurrent algorithms and data structures • Advanced security <p><i>The courses listed above are illustrative and may change. A full list of current options is available on the Mathematics and Computer Science websites.</i></p>	<p>Assessment</p> <p>Written or take-home exams plus a dissertation or project report</p> <p>Currently upper second required to continue to the fourth year</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

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University Offices, Wellington Square, Oxford OX1 2JD



changes in course provision, either before or after registration. For further information, please see the University's Terms and Conditions.

Fees

These annual fees are for full-time students who begin this undergraduate course here in 2019.

Fee status	Annual Course fees
Home/EU	£9,250
Islands (Channel Islands & Isle of Man)	£9,250
Overseas	£34,678

Information about how much fees and other costs may increase is set out in the University's Terms and Conditions.

Additional Fees and Charges Information for Mathematics and Computer Science

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

Living costs

Your living costs will vary significantly dependent on your lifestyle. These are estimated to be between £1,058 and £1,643 per month in 2019-20. 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.

	Per month		Total for 9 months	
	Lower range	Upper range	Lower range	Upper range
Food	£265	£371	£2,387	£3,342
Accommodation (including utilities)	£566	£739	£5,093	£6,655
Personal items	£122	£271	£1,098	£2,435
Social activities	£42	£126	£380	£1,138
Study costs	£40	£88	£359	£788
Other	£23	£48	£208	£432
Total	£1,058	£1,643	£9,525	£14,790

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

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information only. When planning your finances for future years of study at Oxford beyond 2019-20, you should allow for an estimated increase in living expenses of 3% each year.