

Mathematics and Computer Science Information Sheet for entry in 2020

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



<ul style="list-style-type: none"> • Computer Science Options including: <ul style="list-style-type: none"> ○ Computer security ○ Machine learning ○ Computational complexity ○ Lambda calculus and types 	
YEAR 4	
<p>RESEARCH</p> <ul style="list-style-type: none"> • Mathematics Advanced options including: <ul style="list-style-type: none"> ○ Model theory ○ Category theory ○ Lie groups ○ Probabilistic combinatorics • Computer Science Advanced options including: <ul style="list-style-type: none"> ○ Advanced machine learning ○ Computational game theory ○ Computational learning theory ○ Automata, logic and games ○ Quantum computer science ○ Concurrent algorithms and data structures ○ Advanced security <p><i>Lists of options offered in Years 2, 3 and 4 are illustrative only, and may change from time to time. Further information about all of our courses: www.cs.ox.ac.uk/ugadmissions.</i></p>	<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.

Fees

These annual fees are for full-time students who begin this undergraduate course here in 2020.

Fee status	Annual Course fees
Home/EU	£9,250
Islands (Channel Islands & Isle of Man)	£9,250
Overseas	£36,065

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

Please note that the course fees you pay include your fees for both University and college services and are divided between the University (including your department or faculty) and your college on a formula basis. More information is provided in your 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 £1,135 and £1,650 per month in 2020-2021. 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	£270	£385	£2,430	£3,465
Accommodation (including utilities)	£630	£760	£5,670	£6,840
Personal items	£130	£245	£1,170	£2,205
Social activities	£45	£110	£405	£990
Study costs	£40	£95	£360	£855
Other	£20	£55	£180	£495
Total	£1,135	£1,650	£10,215	£14,850

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 2020-21, you should allow for an estimated increase in living expenses of 3% each year.