

Mathematics and Computer Science Information Sheet for entry in 2018

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 an industry-sponsored group design practical.

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. Exit points are not decided until the third year.

A typical weekly timetable

The typical week for a student in Mathematics and Computer Science is similar to that for Computer Science or Mathematics.

1st year

Courses

Core Mathematics (50%)

- Analysis
- Continuous maths
- Groups and group actions
- Introduction to complex numbers
- Introduction to university maths
- Linear algebra
- Probability

Core Computer Science (50%)

- Design and analysis of algorithms
- Functional programming
- Imperative programming

Assessment

Five exam papers

2nd year

Courses

Computer Science (25%)

- Algorithms
- Models of computation

Core Mathematics (30%)

- Linear algebra
- Complex analysis
- Metric spaces

Options in Mathematics (20%)

Options in Computer Science (25%)

Assessment

Six exam papers (two Computer Science and four Mathematics)

3rd year**Courses**

Mathematics

Options including:

- Number theory
- Communication theory

Computer Science

Options including:

- Computer security
- Machine learning
- Computational complexity
- Lambda calculus and types

Assessment

Up to ten exam papers

4th year

Research

Mathematics

Advanced options including:

- Model theory
- Category theory
- Lie groups
- Probabilistic combinatorics

Computer Science

Advanced options including:

- Computer animation
- Computational Learning Theory
- Computational game theory
- Automata, logic and games
- Quantum computer science
- Concurrent algorithms and data structures
- Advanced security

The courses listed above are illustrative and may change. A full list of current options is available on the [Mathematics](#) and [Computer Science](#) websites.

Assessment

Written or take-home exams plus a dissertation or project report

Currently upper second required to continue to the fourth year

Lists of options offered in the 2nd, 3rd and 4th years are illustrative only, and may change from time to time. Further information about all of our courses: www.cs.ox.ac.uk/ugadmissions

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

Oxford University is committed to recruiting the best and brightest students from all backgrounds. We offer a generous package of financial support to Home/EU students from lower-income households. (UK nationals living in the UK are usually Home students.)

These annual fees are for full-time students who begin this undergraduate course here in 2018.

Fee Status	Tuition fee	College fee	Total annual fees
Home/EU	£9,250	£0	£9,250
Islands (Channel Islands & Isle of Man)	£9,250	£0	£9,250
Overseas	£23,885	£7,570	£31,455

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 £1,014 and £1,556 per month in 2018-19. Undergraduate courses usually consist of three terms of eight weeks each, but 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	£258	£361	£2,318	£3,245
Accommodation (including utilities)	£536	£677	£4,824	£6,093
Personal items	£118	£263	£1,066	£2,364
Social activities	£41	£123	£369	£1,105
Study costs	£39	£85	£348	£765
Other	£22	£47	£202	£419
Total	£1,014	£1,556	£9,127	£13,991

When planning your finances for future years of study at Oxford beyond 2018-19, you should allow for an estimated increase in living expenses of 3% each year.

10 November 2017