Computer Science Information Sheet for entry in 2017

Computer Science is about understanding computer systems and networks at a deep level. Computers and the programs they run are among the most complex products ever created; designing and using them effectively presents immense challenges. Facing these challenges is the aim of Computer Science as a practical discipline, and this leads to some fundamental questions:

- How can we capture in a precise way what we want a computer system to do?
- Can we mathematically prove that a computer system does what we want it to?
- How can computers help us to model and investigate complex systems like the Earth's climate, financial systems or our own bodies?
- What are the limits to computing? Will quantum computers extend those limits?

The theories that are now emerging to answer these kinds of questions can be immediately applied to design new computers, programs, networks and systems that are transforming science, business, culture and all other aspects of life.

Computer Science can be studied for three years (BA) or four years (Master of Computer Science). The fourth year allows the study of advanced topics and an in-depth research project. Everyone applies for the four-year course and chooses their exit point during the third year.

The course concentrates on creating links between theory and practice. It covers a wide variety of software and hardware technologies and their applications. We are looking for students with a real flair for mathematics, which you will develop into skills that can be used both for applications such as scientific computing and, more importantly, for reasoning rigorously about the specific behaviour of programs and computer systems. You will also gain practical problem-solving and program design skills; the majority of subjects within the course are linked with practical work in our well-equipped laboratory.

A typical weekly timetable

During the first part of the course, your work is divided between lectures (about ten a week), tutorials (about two a week) and practical classes (about two sessions a week).

In tutorials you discuss ideas in depth with an experienced computer scientist, usually with just one or two other students. You will be expected to spend a considerable amount of time developing your own understanding of the topics covered in lectures, answering questions designed to check your understanding, and preparing for tutorials. As the course progresses, you will also begin to work in small classes (up to ten people) on more specialised topics. In the second year you will take part in an industry-sponsored group design practical. In years three and four about a third of your time is spent working on your chosen individual project.

Course outline

1st year	
Courses Core courses: • Continuous maths • Design and analysis of algorithms • Digital systems • Discrete mathematics • Functional programming • Imperative programming • Introduction to formal proof • Linear algebra • Probability	**Assessment** Four written papers, plus practicals
2nd year	
Courses Core courses (50%): • Object-oriented programming • Concurrent programming • Models of computation • Logic and proof Current options (50%) include: • Computer architecture • Computer graphics • Compilers • Concurrency • Algorithms and data structures • Databases • Computer networks • Intelligent systems	**Assessment** Four written papers, plus practicals (including a group design practical)

3rd year	
Courses Current options (67%) include: • Computational complexity • Computational learning theory • Computer security • Computer-aided formal verification • Geometric modelling • Knowledge representation and reasoning • Lambda calculus and types • Principles of programming languages Project work (33%)	**Assessment** Approximately five written papers or take-home exams, plus practicals and project
4th year	
Courses Current options (62%) include: • Automata, logic and games • Advanced security • Categories, proofs and processes • Computational linguistics • Computer animation • Concurrent algorithms and data structures • Database systems implementation • Machine learning • Probabilistic model checking • Probability and computing • Quantum computer science • Program analysis • Theory of data and knowledge bases Project work (38%)	**Assessment** Five written papers or take-home exams, plus practicals and project

The courses listed above are illustrative and may change. A full list of current options is available on the Computer Science website.	

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 2017.

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	£23,190	£7,350	£30,540

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 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 £1,002 and £1,471 per month in 2017-18. 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	£250	£350	£2,250	£3,150
Accommodation (including utilities)	£538	£619	£4,844	£5,569
Personal items	£115	£255	£1,035	£2,295
Social activities	£40	£119	£358	£1,073
Study costs	£38	£83	£338	£743
Other	£22	£45	£196	£407
Total	**£1,002**	**£1,471**	**£9,021**	**£13,237**

29 September 2016