

## Computer Science and Philosophy Information Sheet for entry in 2021

Artificial intelligence (AI), logic, robotics, virtual reality: fascinating areas where computer science and philosophy meet. The two disciplines share a broad focus on the representation of information and rational inference, embracing common interests in algorithms, cognition, intelligence, language, models, proof and verification. Computer scientists need to be able to reflect critically and philosophically as they push forward into novel domains, while philosophers need to understand a world increasingly shaped by technology in which a whole new range of enquiry has opened up, from the philosophy of AI to the ethics of privacy and intellectual property.

Some of the greatest thinkers of the past – including Aristotle, Hobbes and Turing – dreamed of automating reasoning and what this might achieve; the computer has now made it a reality, providing a wonderful tool for extending our speculation and understanding.

The study of philosophy develops analytical, critical and logical rigour, and the ability to think through the consequences of novel ideas and speculations. It stretches the mind by considering a wide range of thought on subjects as fundamental as the limits of knowledge, the nature of reality and our place in it, and the basis of morality. Computer science is about understanding computer systems 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.

Both subjects are intellectually exciting and creative. The degree combines analytical and technical knowledge with rhetorical and literary skills, and the chance to study within two internationally acclaimed academic departments.

Computer Science and Philosophy can be studied for three years (BA) or four years (Master of Computer Science and Philosophy). Students do not need to choose between the three-year and four-year options when applying. Instead, 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).

The first year covers core material in both subjects, including a bridging course studying Turing's pioneering work on computability and artificial intelligence. Later years include a wide range of options, with an emphasis on courses near the interface between the two subjects. The fourth year enables students to study a variety of advanced topics and complete an in-depth research project.

### A typical week

For the first two years, your work is divided between about ten lectures and two to three college-based tutorials each week, alongside Computer Science practical classes – usually one session a week. In the second year you will take part in a Computer Science group design practical, which may be sponsored by industry. In your third and fourth years,

## UNDERGRADUATE ADMISSIONS AND OUTREACH

University Offices, Wellington Square, Oxford OX1 2JD



Philosophy continues to be taught through tutorials, while there are classes in the department for most Computer Science courses.

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**

<b>YEAR 1</b>	
<p><b>COURSES</b></p> <p>Computer Science:</p> <ul style="list-style-type: none"> <li>• Functional programming</li> <li>• Design and analysis of algorithms</li> <li>• Ethics and responsible innovation</li> <li>• Imperative programming</li> <li>• Discrete mathematics</li> <li>• Probability</li> </ul> <p>Philosophy:</p> <ul style="list-style-type: none"> <li>• General philosophy</li> <li>• Elements of deductive logic</li> <li>• Turing on computability and intelligence</li> </ul>	<p><b>ASSESSMENT</b></p> <p>Five written papers</p>
<b>YEAR 2</b>	
<p><b>COURSES</b></p> <p>Computer Science core courses (25%):</p> <ul style="list-style-type: none"> <li>• Models of computation</li> <li>• Algorithms</li> <li>• Group design practical</li> </ul> <p>Computer Science options (25%):</p> <p>Current options include:</p> <ul style="list-style-type: none"> <li>• Compilers</li> <li>• Databases</li> <li>• Artificial intelligence</li> </ul> <p>Philosophy (50%):</p> <p>Current options include:</p> <ul style="list-style-type: none"> <li>• Knowledge and reality</li> <li>• Early modern philosophy</li> <li>• Philosophy of science</li> <li>• Philosophy of mind</li> <li>• Ethics</li> </ul>	<p><b>ASSESSMENT</b></p> <p>Two Computer Science papers</p>
<b>YEAR 3</b>	
<p><b>COURSES</b></p> <p>Computer Science (25–75%):</p> <p>Current options include:</p> <ul style="list-style-type: none"> <li>• Computational complexity</li> <li>• Machine learning</li> <li>• Computer-aided formal verification</li> <li>• Computers in society</li> </ul>	<p><b>ASSESSMENT</b></p> <p>Between nine and eleven three-hour written papers, including at least two in Computer Science and at least three in Philosophy</p>



<ul style="list-style-type: none"> <li>• Knowledge representation and reasoning</li> </ul> <p>Philosophy (25–75%): Current options include:</p> <ul style="list-style-type: none"> <li>• Philosophical logic</li> <li>• Philosophy of cognitive science</li> <li>• Philosophy of mathematics</li> <li>• Philosophy of logic and language and many others</li> </ul>	
YEAR 4	
<p><b>COURSES</b></p> <p>Computer Science: Current advanced options include:</p> <ul style="list-style-type: none"> <li>• Advanced security</li> <li>• Automata, logic and games</li> <li>• Computational game theory</li> <li>• Computational learning theory</li> <li>• Concurrent algorithms and data structures</li> <li>• Quantum computer science</li> <li>• Optional Computer Science project</li> </ul> <p>Philosophy:</p> <ul style="list-style-type: none"> <li>• Advanced options in philosophy</li> <li>• Optional Philosophy thesis</li> </ul> <p><i>The courses listed above are illustrative and may change. A full list of current options is available on the <a href="#">Computer Science website</a>.</i></p>	<p><b>ASSESSMENT</b></p> <p>Computer Science: written paper or take-home exam; Philosophy: three-hour written paper and 5,000-word essay</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).

## UNDERGRADUATE ADMISSIONS AND OUTREACH

University Offices, Wellington Square, Oxford OX1 2JD



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

## UNDERGRADUATE ADMISSIONS AND OUTREACH

University Offices, Wellington Square, Oxford OX1 2JD



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
<b>Total</b>	<b>£1,175</b>	<b>£1,710</b>	<b>£10,575</b>	<b>£15,390</b>

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](mailto: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 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.*