I'm Considering Computer Science & Philosophy: What Should I Read?

Resources and Advice Online

The Oxford Computer Science website offers many useful resources to help you prepare for application. To see these, go to www.cs.ox.ac.uk/admissions/ugrad and follow the "Find out more" link, followed by "Background reading & activities". For more on links between the disciplines, see www.philocomp.net.

Getting Into Oxford

With regard to admission, it's first important to note that (a) you will not be judged at all on what you know about Philosophy (so you're not expected to have read any "classic" works, for example); and (b) the most important factor for winning a place in CS&P is your ability in mathematical, computational, and logical problem-solving. So from the point of view of preparing for application, most of your effort should go into practising mathematics for the Mathematics Admissions Test (the MAT). Past papers and solutions are available online from www.cs.ox.ac.uk/mat, James Munro's www.maths.ox.ac.uk/r/matlive gives summer support, and other resources are listed on the "Background reading" page mentioned above. For example, you might want to try out the STEP support programme offered by Cambridge University, while NRich Maths offers problem-solving resources, and Project Euler gets you started on mathematical programming.

Philosophy Choices at Oxford

Computer Science & Philosophy (CS&P) is an extremely flexible degree programme, offering a very wide choice of Philosophy courses, none of which is compulsory beyond the first year. So if you wish, you can focus on courses that are relatively technical (e.g. Philosophical Logic, Philosophy of Mathematics or Physics), or connected more with AI (e.g. Philosophy of Language, Mind, or Cognitive Science, or Ethics of AI and Digital Technology), or science more generally (e.g. Knowledge and Reality, Philosophy of Science and/or Social Science), or in "practical" Philosophy (e.g. Ethics, Practical Ethics, Theory of Politics), or more historical (e.g. Early Modern Philosophy, Plato, Aristotle, Kant, Post-Kantian Philosophy, Wittgenstein). Other modules may include Aesthetics, Philosophy of Religion, Feminist Theory, or a Thesis in an area of your choice.

Sampling First Year Philosophy

In the first year, the Philosophy side of CS&P involves three components, of which the largest is "Elements of Deductive Logic". This is a rigorous course in formal logic, taken only by students in CS&P, Mathematics & Philosophy, and Physics & Philosophy. One of the other components, "Alan Turing on Computability and Intelligence", is taken only in CS&P, introducing foundational theory of computation as well as issues in the philosophy of mind. The upshot is that first years in CS&P study more logic and theory of computation – both of which are central to Computer Science – than single honours CS students! The only component that would be out of place in a pure CS degree is "General Philosophy", which introduces a range of central topics about knowledge and our place in the world, starting from the writings of some classic thinkers (Descartes, Locke, and Hume). To sample this, go to http://podcasts.ox.ac.uk/series/general-philosophy-2018, where you can find recordings of Peter Millican's 2018 *General Philosophy* lectures (and accompanying handouts).

Will I Enjoy Philosophy?

Perhaps the best way to work out whether you will enjoy studying Philosophy is to spend time thinking for yourself about philosophical problems in the company of books like those below. Law's book is particularly good as an introduction, offering short (but substantial) chapters on 25 varied topics. Reading and thinking through one of these each day would be a great way of discovering whether you will enjoy Philosophy:

Stephen Law	*The Philosophy Gym* (Headline, 2004)
Simon Blackburn	*Think* (Oxford, 2001)
Nigel Warburton	*Philosophy: The Basics* (Routledge, 1992)
Thomas Nagel	*What Does It All Mean?* (Oxford, 1987)
Edward Craig	*Philosophy: A Very Short Introduction* (Oxford, 2002)

If you like the idea of a book that contains 100 short philosophical puzzles to dip into, then you could try:

Julian Baggini	*The Pig That Wants to be Eaten* (Granta, 2005)
Peter Cave	*The Big Think Book* (Oneworld, 2015)

But if, on the other hand, you want to go more deeply into some problems of metaphysics:

Earl Conee & Theodore Sider	*Riddles of Existence* (Oxford, 2005)

For a more historical perspective, here are two classics from the British Empiricist tradition:

David Hume	*Enquiry Concerning Human Understanding* (1748), edited by Peter Millican, Oxford World's Classics, 2007
Bertrand Russell	*The Problems of Philosophy* (Oxford, 1912)

Hume's *Enquiry* features in the *General Philosophy* course, with very interesting things to say on knowledge, scepticism, free will, and God. Millican's introduction sets Hume in historical context, so you can learn a lot about the early modern period when so many classic problems were framed. But if you try this, bear in mind that it can take a bit of practice to get used to 18th century English, even with a writer as elegant as Hume. Russell is also an elegant writer, and his book has introduced many people to Philosophy over the years.

Finally Ethics is a major part of Philosophy, and increasingly seen as crucially important in the area of Artificial Intelligence and its applications (as discussed in the *Futuremakers* podcast referenced below):

Simon Blackburn	*Ethics: A Very Short Introduction* (Oxford, 2001)
David Edmonds	*Would You Kill the Fat Man?* (Princeton, 2015)
Peter Singer	*Ethics* (Oxford Readers, 1994)

Blackburn gives an excellent overview, Edmonds introduces the subject through discussion of the notorious "Trolley Problem", while Singer provides a wide range of readings from Plato to the modern world.

Reading on Alan Turing and AI

Alan Turing's fascinating work – which invented the subject of Computer Science and raised key questions about AI – features prominently in the first year of the CS&P course. If you're keen to read up on this, try:

Andrew Hodges	*Turing: A Natural Philosopher* (Phoenix, 1997)
Alan Turing and Charles Petzold	*The Annotated Turing* (John Wiley, 2008)
Jack Copeland	*Artificial Intelligence: A Philosophical Introduction* (Blackwell, 1993)
Michael Wooldridge	*The Road to Conscious Machines* (Penguin, 2020)

Hodges' book is short but informative. Petzold's book is very difficult in places, but it's worth trying the early chapters – we use this book in the first year course. Copeland and Wooldridge (who is Head of our Computer Science Department) give accessible and well-balanced introductions to the Philosophy and the History of AI.

Philosophical Podcasts

There are quite a number of excellent podcasts on Philosophy, several coming from authors listed earlier:

Philosophy Bites: from Nigel Warburton & David Edmonds, features an extensive series of discussions with leading philosophers, covering a huge range of topics

In Our Time: Melvyn Bragg's classic BBC Radio 4 series, has many episodes on philosophical themes

Philosophy 24/7: David Edmonds interviews leading philosophers about highly relevant moral issues

The Public Philosopher: Michael Sandel (Princeton) discusses contemporary moral problems

Philosophy: The Classics: Nigel Warburton reads from his book which introduces 27 key historical texts

Philosophy and Science of Human Nature: Tamar Gendler (Yale) relates classic philosophical writings to contemporary work in cognitive science

Hi Phi Nation: Barry Lam finds philosophical ideas, tensions and unquestioned assumptions in news stories

Finally, of particular interest to CS&P, is the first series of the *Futuremakers* podcast, devoted to issues in AI Ethics (see https://www.research.ox.ac.uk/Article/2018-10-22-the-futuremakers-podcast for details), and involving discussions between AI researchers, social scientists and philosophers from Oxford – people you may meet and learn from if you come to study Computer Science & Philosophy here!