The Philosophy and Ethics of Information

Academic Year: 2016-17, Hilary Term
Day and Time: Weeks 1-4 and 6-9, Thursday, 15:00-17:00
Location: TBC

Course Provider
Professor Luciano Floridi, Oxford Internet Institute, luciano.floridi@oii.ox.ac.uk

Background
In this course, philosophy will be interpreted as the conceptual design of cogent and relevant answers to open questions of a foundational nature. In the case of the philosophy and ethics of information (PEI), the questions concern the conceptual nature and basic principles of information, including its dynamics, utilisation, and sciences, and the elaboration and application of an information-theoretical approach to classic and new philosophical problems. The course has three goals. It explains what PEI is, its problems, approaches, and methods. It introduces some key concepts and phenomena related to information. And it seeks to answer some crucial theoretical questions of great philosophical significance prompted by the development of the information society. No prior knowledge of philosophy, ethics or logic is presupposed, but some preparatory readings are recommended (see below).

Key Themes
- The Information Revolution.
- Open questions in the philosophy and ethics of information.
- The method of abstraction.
- The nature and logic of information.
- The ethics of information as a new form of environmentalism.
- The role of toleration, peace, liberty and justice in mature information societies.
- The morphology of power after the information revolution.
- The concept of law after the information revolution.

Learning Objectives
At the end of this course students will
- have obtained a critical understanding of the basic problems, concepts and methodology of the philosophy and ethics of information;
- know how to analyse the conceptual nature of fundamental information-theoretic phenomena;
- be able to formulate research questions that are amenable to philosophical analysis and use relevant conceptual tools to design cogent answers to them;
- understand how new ethical challenges arise from the development of digital environments and unprecedented forms of agency and what approaches may be fruitful in order to deal with them;
- be familiar with important work on the philosophy and ethics of information authored by distinguished researchers in the field.

Teaching Arrangements
There will be eight weekly two-hour classes. The classes will meet in weeks 1-4 and 6-9 of Hilary term.
Note
Students should note that over the course of the year, small changes may be made to the content, dates or teaching arrangements set out in this reading list, at the course provider's discretion. These changes will be communicated to students directly and will be noted on the internal course information website.

Summative Assessment
Assessment is by a single essay not to exceed 5000 words in length, details of which will be released to students at noon on Monday Week 1 Hilary Term (16 January) via the Assignment Submission Weblearn site. This essay must be submitted via WebLearn by 12 noon on Monday, Week 1 of Trinity Term (24 April).

Formative Assessment
Students will be required to write one short essay. The advised length is 2000-2500 words. This essay will provide a means for students to obtain feedback on the progress they have achieved. Additional details will be given the first week of class.

Submission of Assignments
The summative assignment for this course is due on Monday of Trinity Term Week 1 (24 April) by 12.00pm and should be submitted electronically via the Assignment Submission Weblearn Site. The assignment should also be submitted electronically by 5:00 pm on the same day to teaching@oii.ox.ac.uk. If anything goes wrong with your submission, email teaching@oii.ox.ac.uk immediately. In cases where a technical fault that is later determined to be a fault of the Weblearn system (and not a fault of your computer) prevents your submitting the assessment on time, having a time stamped email message will help the Proctors determine if your assessment will be accepted. Please note that you should not wait until the last minute to submit materials since Weblearn can run slowly at peak submission times and this is not considered a technical fault.

Full instructions on using WebLearn for electronic submissions can be found on Plato under General Information. There is also an FAQ page on the Assignment Submission Weblearn Site.

Please note that work submitted after the deadline will be processed in the standard manner and, in addition, the late submission will be reported to the Proctors' Office. If a student is concerned that they will not meet the deadline they must contact their college office or examinations school for advice. For further information on submission of assessments to the examinations school please refer to http://www.ox.ac.uk/students/academic/exams/submission/. For details on the regulations for late and non-submissions please refer to the Proctors website at https://www.admin.ox.ac.uk/proctors/examinations/candidates/.

Any student failing this assessment will need to follow the rules set out in the OII Examining Conventions regarding re-submitting failed work.

General Readings
Information and communication technologies (ICTs), their related sciences, the issues they generate, and the society they are shaping are all changing very quickly and deeply. So texts about such topics soon become outdated. The following reading list seeks to provide a balance between (a) recent texts that are up to date, (b) classic texts that have withstood the test of time, and (c) texts that are less likely to have been encountered in other courses for this degree. Texts in bold are set references and the only compulsory readings for this course, whereas (*) denotes a more advanced text.

Philosophy and Ethics of Information: the lectures will be based on the following four books, but only two, in bold, will serve as set references: (Floridi 2010c), (Floridi 2011)*, (Floridi 2013a)*, (Floridi 2014a). (Floridi 2003) is an introduction to the philosophy of information and computing that is now getting old. (Floridi forthcoming) may become available in time for the course. The Society for the Philosophy of Information publishes the following open access textbook: (Ilari 2012).

Philosophy: (Russell 2001) is a classic, short introduction to some philosophical problems by one of the greatest philosophers of the twentieth century. It is useful in order to become acquainted both with
some crucial issues in the field and with an abstract style of thinking. Of the many textbooks that introduce philosophical methods, (Baggini and Fosl 2010) provides an accessible and fairly comprehensive overview. Philosophical dictionaries and encyclopaedias can serve as useful references to check concepts, theories, authors, terminology etc. that appear throughout the course. Almost any will do, but (Flew and Priest 2002) is recommended. The Stanford Encyclopedia of Philosophy is excellent, online and free, (Craig 1998) is an exhaustive encyclopaedia; the version online is regularly updated.

**Ethics:** (Benn 1998) is a bit old but still a good introduction; (Deigh 2010) is more recent but does not cover applied ethics; on this a good reference is (Ryberg, Petersen, and Wolf 2007), see also (Driver 2007). (Floridi 2010a) is a recent handbook on information and computer ethics.

**Classics:** the following texts are must-read for anyone interested in the philosophy and ethics of information, (Turing 1936) and (Turing 1950), see (Turing 2004); (Shannon and Weaver 1949 rep. 1998); and (Wiener 1954), (Wiener 1961), (Wiener 1964), and (Simon 1996).

**Artificial Intelligence:** a standard reference book is (Russell and Norvig 2010), to be consulted. Two philosophical books about AI are: (Copeland 1993), a bit old now, but still very insightful, and (Walmsley 2012). The book by the father of ELIZA is also worth reading (Weizenbaum 1976).

**Computation:** this is another field with a huge number and variety of introductions. For this course, (St. Amant 2013) is a good choice. (Sipser 2012)* is a very authoritative text for anyone interested in a more mathematical approach to computation; (Boolos, Burgess, and Jeffrey 2007)* is the text for anyone interested in a more logico-philosophical approach. Both require knowledge of discrete mathematics and first order logic.

**Logic:** there is a huge number and variety of introductory textbooks about mathematical logic. The following is recommended for the course: (Nolt et al. 2012), an abridged version of (Nolt, Rohatyn, and Varzi 2011). For many years (Hodges 2001) was synonymous with logic for any student in Oxford taking a first course in the subject; (Jeffrey and Burgess 2006)* covers the same material but more technically and systematically; so does (Smullyan 2014), which is almost a classic. (Priest 2000) and (Papineau 2012)* introduce philosophical issues in logic; (Huth and Ryan 2004)* and (Loveland, Hodel, and Sterrett 2014)* cover logic in computer science.

**Mathematics:** there is no royal road to geometry, as Euclid once remarked, nor to mathematics in general, but the following texts can help to make a few steps in the right direction: (Haggarty 2001) and (Makinson 2008) provide a solid foundation useful for this course, (Devlin 1981) is shorter and still very good.

**Information theory:** few introductory texts to information theory do not require some expertise in mathematics, computation, or logic. (Pierce 1980) is old but still one of the most accessible books on the topic. (Floridi 2010c) is a much shorter and more recent alternative; see also(Bremer and Cohnitz 2004) Popular books on the nature of information and the history of information technologies include (Brown and Duguid 2002), (Baeyer 2003), and more recently (Gleick 2011). (Goldstine 1972) remains a classic with regard to the history of computers.
Week 1: The Fourth Revolution
ICTs are not just tools merely modifying how we deal with the world, like the wheel or the engine. They are above all formatting systems, which increasingly affect how we conceptualise reality, how we relate to it, how we see ourselves, and how we interact with each other. In this lecture, we shall discuss the information revolution as a fourth revolution (Turing's, after Copernicus', Darwin's and Freud's), and analyse some of its long-term implications.

Essential Reading: (Floridi 2014a), chapters 1-5.
Optional Reading: (Floridi 2010c) chapter 1 is an overview of the same topics. The Onlife Manifesto, in (Floridi 2014e), please note that this is also freely available online as open access; (Bolter 1984); (Bynum and Moor 1998), esp. chapter 1.

Week 2: Philosophy's Open Questions
The information revolution has generated new philosophical issues, but what is a philosophical problem exactly, and what are the philosophical problems addressed by the philosophy and ethics of information? These are the questions answered in this lecture.

Essential Reading: (Floridi 2013d).
Optional Reading: (Floridi 2011), chapters 1-2; (Holland 2014), chapter 1; (Russell 2001); (Deleuze and Guattari 1994) (Floridi 2012); (Simon 1996).

Week 3: The Method of Levels of Abstraction
Open problems are analysed by the philosophy and ethics of information through the method of levels of abstraction (LoA). This lecture provides a simple introduction to its nature and applicability and shows its fruitfulness though some classic applications. The method is further specified and supported by distinguishing it from three other forms of "levelism": (i) levels of organisation; (ii) levels of explanation and (iii) conceptual schemes. In this context, the problems of relativism and antirealism are also briefly addressed.

Essential Reading: (Floridi 2013a), chapter 3.
Optional Reading: (Colburn and Shute 2007)*; (Hoare 1972)*, only sections 1 (all) and 12 (but not 12.1); (Floridi 2008)* covers the same topic but more technically; (Turing 1936) and (Turing 1950), see now (Turing 2004); (Quine 1992).

Week 4: The Nature of Information
After the introductory lecture and the two methodological ones, this fourth lecture closes the first half of the course, dedicated to the philosophy of information, by focusing on a key open question: what is information? The question has received many answers in different fields. This is not surprising. "Information" is notoriously a polymorphic phenomenon and a polysemantic concept so, as an explicandum, it can be associated with several explanations, depending on the level of abstraction adopted and the cluster of requirements and desiderata orientating a theory. This lecture presents a conceptual map of its main senses and cognate terms, from Shannon's information theory to semantic information.

Essential Reading: (Floridi 2010c) chapters 2-4.
Optional Reading: (Pierce 1980); (Shannon and Weaver 1949 rep. 1998)*; (Weaver 1949).

Week 5: The Ethics of Information as E-nvironmentalism
Moral life is a highly information-intensive game, so any technology that radically modifies the "life of information" is bound to have profound moral implications for any moral player. ICTs, by radically transforming the context in which moral issues arise, not only add interesting new dimensions to old problems, but lead us to rethink, methodologically, the very grounds on which our ethical positions are based. This lecture introduces Information Ethics as a general approach to moral issues by comparing it to environmental ethics.

Essential Reading: (Floridi 2010a), chapters 1-5; for a quick overview, covering the same topic, see (Floridi 2010c), chapter 8 and the Epilogue; (Floridi 2014a), chapter 10.
Optional Reading: (Castells 2000); (Floridi 2013a)*, chapters 1-2, 4-6.

Week 6: Norms as Agents
The post-Westphalian Nation State developed by becoming more and more an Information Society. However, in so doing, it progressively made itself less and less the main information agent, because what made the Nation State possible and then predominant, as a historical driving force in human politics, namely ICTs, is also what is now making it less central, in the social, political and economic
life of humanity across the world. ICTs fluidify the topology of politics. They do not merely enable but actually promote (through management and empowerment) the agile, temporary and timely aggregation, disaggregation and re-aggregation of distributed groups around shared interests across old, rigid boundaries represented by social classes, political parties, ethnicity, language barriers, physical barriers, and so forth. This is generating a new tension between the Nation State, still understood as a major organisational institution, yet no longer monolithic but increasingly morphing into a multiagent system itself, and a variety of equally powerful, indeed sometimes even more politically influential and powerful, non-Statal organisations. This lecture discusses such a tension and how an information society could be designed to take full advantage of the socio-political progress made so far, while being able to deal successfully with the new global challenges (from the environment to the financial markets) that are undermining the legacy of that very progress.

Essential Reading: (Floridi 2014f).
Optional Reading: (Steger 2013); (Webster 2014). The following classics are available in many editions, some of which are free online, in brackets are the editions that are recommended for this course because of their scholarly apparatus: Locke, A Letter concerning Toleration (Locke 1991); Mill, On Liberty (Mill 1991); Kant, Toward Perpetual Peace (Kant 2006); (Keynes 1933) is freely available online on many websites; (Rawls 1985) is a short overview of his influential theory of justice.

Week 7: The Politics of Uncertainty
In this lecture “semantic information” is defined as a question plus its correct and relevant answer, and therefore “uncertainty” as a question without its correct and relevant answer. On this ground, the lecture discusses the possibility that a liberal, tolerant, and fair society, as discussed in the previous lecture, is one in which a healthy degree of uncertainty is both welcomed and fostered. In the third and last part, the lecture presents an interpretation of the morphology of socio-political power in mature information societies in terms of generation (poietic power) and control (cybernetic power) of uncertainties.

Essential Reading: (Floridi 2014a), chapters 6-9.
Optional Reading: (Bevir 2012); (Fukuyama 2012); (Galbraith 1985); (Lyotard 1984); (Micklethwait and Wooldridge 2014); (Miller 2003) or (Knowles 2001); (Wiener 1954).

Week 8: The Relational Nature of Law
This last lecture reconnects to the first by discussing the development of our conceptualisations of the law after the information revolution. It introduces naturalism and positivism and explores a third possibility, labelled relationalism. Semantic information (e.g. a train timetable) is a relational phenomenon: it depends on the right kind of message and receiver. Insisting on mapping information as either observer-independent (naturalism) or observer-dependent (positivism) is as naïve as pretending that a border between two nations must be located in one of them. Norms are a special kind of semantic information and inherit from it the same relational nature. The lecture further discusses the difference between relationalism and relativism.

Essential Reading: (Ingram 2006), chapter 1-2; (McBride and Steel 2014), chapter 1.
Optional Reading: (Marmor 2012), chapters 1-6; (Wacks 2014). For further reading: (Dworkin 1998); (Finnis 2011); (Fuller 1969); (Hart 2012).
List of Readings


Keynes, John Maynard. 1933. "Economic possibilities for our grandchildren (orig. 1930)." in *Essays in persuasion* 358-73 (available online).


