

ISF 60: Technology and Values

Spring 2018

University of California, Berkeley

TuTh 3.30-5 pm

Room: 222 Wheeler

Lecturer: Shreeharsh Kelkar

Interdisciplinary Studies Program

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Office: 269 Evans Hall

Office Hours: Thursday 12-3 pm. (Or email for appointment; or walk in if you see me and my door is open. There are no appointments for office hours.)

Course Description and Learning Objectives:

If science and technology are value-laden activities, then where exactly do the values lie? In this class, we will pick apart the black-box of science and technology and look for values not just in terms of bad actors, corruption, or "implications," but in the processes that constitute modern technoscience itself. These processes include: the ways in which researchers construct problems, solutions, facts, and artifacts; the norms, standards, stories, and patronage relations that underlie science and technology; and finally, how the future is imagined and realized. Readings will include academic and journalistic texts as well as science fiction.

By the end of this class, you will be able to: (1) articulate sophisticated theories of technology and technological change, (2) building on those theories, analyze in concrete detail the relationship between technology and values, and explain how certain technologies come to embody particular values, (3) write in clear, accessible, language the stakes of various emerging technological controversies without oversimplification.

Grade Determination:

The grade breakdown is as follows:

Attendance: 10 pts (This includes coming to class, paying attention, and being able to talk intelligently about the readings.)

Forum Posts: 35 pts

Class Activities and Short Papers: 30 pts

Class Presentation: 5 pts

Google mock trial: 5 pts

Google op-ed: 5 pts. (700-800 words)

Google “explainers”: 10 pts (1400-1600 words).

Final paper: 30 pts

Proposal: 2 pts

Source document list: 3 pts

Final Paper: 20 pts

Final Paper presentation: 5 pts

Total: 100 pts

The grading scheme for the class is as follows:

Range and Grade
90<=A<=100
80<=A-<90
70<=B+<80
60<=B<70
50<=B-<60
45<=C+<50
40<=C<45
35<=C-<40
0<=F<35

Laptop Policy:

No laptops, tablets, or cell phones will be allowed during class unless I give you explicit instructions to use them. It might seem strange to ban computers in class given that this is a class about computing. But I have found that when computers are allowed, students, despite their best efforts, still end up surfing the web rather than paying attention. So consider this a dollop of paternalism on my part. There is a wide literature that shows that overall, students are distracted from the topic at hand because of their laptops and phones, and that students are often distracted by the laptops of other people. For those of you that prefer to take your notes on your laptops, there’s some research that shows that taking hand-written notes forces you to synthesize your points, thereby creating better notes.

Class Plan:

W	Date	Concept or Keyword	Readings, Assignment and Class Lecture
1	16 Jan	Introductions. What is technology? What are values?	No readings.
	19 Jan	Does technology have values?	<p>Winner, Langdon. "Do Artifacts have Politics?" <i>Daedalus</i> (1980): 121-136.</p> <p>Joerges, Bernward. "Do Politics have Artefacts?" <i>Social studies of science</i> 29.3 (1999): 411-431. [Read only pages 416-420.]</p> <p>Sullivan Danny. 2017. A deep look at Google's biggest-ever search quality crisis. Search Engine Land. http://searchengineland.com/google-search-quality-crisis-272174</p>
2	23 Jan	Does technology have a history? Does technology drive history?	<p>Marx, Leo and Merritt Roe Smith. 1994. Introduction. From <i>Does Technology Drive History? The Dilemma of Technological Determinism</i>. Pages ix-xv.</p> <p>Kranzberg, Melvin. "Technology and History: 'Kranzberg's Laws.'" <i>Technology and Culture</i>, vol. 27, no. 3, 1986, pp. 544–560. <i>JSTOR</i>, JSTOR, www.jstor.org/stable/3105385.</p> <p>Kelkar, Shreeharsh. 2017. Teaching (Non) Technological Determinism: A Theory of Key Points. Platypus Blog. http://blog.castac.org/2017/03/key-points/</p> <p>Seaver, Nick. 2014. Auxiliary Motives and the Anthropology of Technology. Platypus Blog. http://blog.castac.org/2014/03/auxiliary-motives-and-the-anthropology-of-technology/</p>

	26 Jan	How to study technology, part 1. Humans and Non-humans.	<p>Latour, Bruno. "Technology is Society Made Durable." <i>The Sociological Review</i> 38.S1 (1990): 103-131.</p> <p>Selinger, Evan. 2012. The Philosophy of the Technology of the Gun. The Atlantic. https://www.theatlantic.com/technology/archive/2012/07/the-philosophy-of-the-technology-of-the-gun/260220/</p> <p>Kamprani, Katerina. 2017. The Uncomfortable: A collection of deliberately inconvenient everyday objects. https://www.theuncomfortable.com/</p>
20	30 Jan	How to study technology, part 2: How institutions matter. Or the social shaping of technology.	<p>Cowan, Ruth Schwartz. 1985. <i>How the refrigerator got its hum.</i> From "The Social Shaping of Technology."</p> <p>Coopersmith, Jonathan. 2017. What fax machines can teach us about electric cars. The Conversation. https://theconversation.com/what-fax-machines-can-teach-us-about-electric-cars-66896</p> <p>Russell, Andrew. 2013. OSI: The Internet that Wasn't. IEEE Spectrum Magazine. http://spectrum.ieee.org/computing/networks/osi-the-internet-that-wasnt</p>
	1 Feb	How to study technology, part 3: The context of invention and the context of use.	<p>Kline, Ronald and Trevor Pinch (1996) "Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States." <i>Technology and Culture</i> 37: 763–95.</p> <p>Maiers, Claire. 2017. Predictive data and experiential knowledge in the neonatal intensive care unit. Work in Progress Blog. https://workinprogress.oowsection.org/2017/07/06/predictive-data-and-experiential-knowledge-in-the-neonatal-intensive-care-unit/</p> <p>Foster, Robert. 2017. Customer Care. Limn. https://limn.it/customer-care/</p>

4	6 Feb	How to study technology, part 4: Looping effects	<p>Cowan, Ruth Schwartz. "The" industrial revolution" in the home: Household technology and social change in the 20th century." <i>Technology and Culture</i> (1976): 1-23.</p> <p>Hacking, Ian. 2002. Chap 6: Making Up People. In <i>Historical Ontology</i>.</p> <p>Asimov, Isaac. 1951. "The Psychohistorians" and "The Encyclopaedists." From <i>Foundation</i>.</p>
	8 Feb	Interlude: Technological Futures I	<p>Graeber, David. 2012. Of Flying Cars and the Declining Rate of Profit. <i>The Baffler</i>. https://thebaffler.com/salvos/of-flying-cars-and-the-declining-rate-of-profit</p> <p>Thiel, Peter. 2011. The End of the Future. <i>National Review</i>. http://www.nationalreview.com/article/278758/end-future-peter-thiel</p>
5	13 Feb	Centralization	<p>Christian, David. 2004. From Power Over Nature to Power Over People: Cities, States, and "Civilization." In <i>Maps of Time: An Introduction to Big History</i>.</p> <p>Graeber, David. 2011. On the Invention of Money – Notes on Sex, Adventure, Monomaniacal Sociopathy and the True Function of Economics. <i>Naked Capitalism</i>. https://www.nakedcapitalism.com/2011/09/david-graeber-on-the-invention-of-money-%E2%80%93-notes-on-sex-adventure-monomaniacal-sociopathy-and-the-true-function-of-economics.html</p> <p>Optional Reading:</p> <p>Scott, James. 2013. Crops, Towns, Government. <i>The London Review of Books</i>. https://www.lrb.co.uk/v35/n22/james-c-scott/crops-towns-government</p>
	15 Feb	Knowledge, Science, Originality	<p>Johns, Adrian. 1998. Introduction. <i>From The Nature of the Book: Print and Knowledge in the Making</i>.</p> <p>Lessig, Lawrence. Chapter 4: "Pirates." From <i>Free Culture</i>. https://www.sslug.dk/~chlor/lessig/freeculture/pirates.html</p> <p>Lessig, Lawrence. Chapter 7: "Recorders." From <i>Free Culture</i>. https://www.sslug.dk/~chlor/lessig/freeculture/recorders.html</p>

6	20 Feb	Nationalism	<p>Anderson, Benedict. 1991. Chap 1: Introduction, Chap3: The Origins of National Consciousness, and Chap 10: Census, Map, Museum. In Imagined Communities: Reflections on the Origin and Spread of Nationalism. p1-9, 163-187.</p> <p>Scott, James. 1998. "Introduction." In Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed. Yale University Press. pp1-3.</p>
	22 Feb	Mechanization	<p>Misa, Thomas. 2011. Geographies of Industry, 1740-1851. From Leonardo to the Internet: Technology and Culture from the Renaissance to the Present.</p> <p>Thompson, Derek. 2012. Where did all the workers go? 60 years of economic change in one graph. The Atlantic. https://www.theatlantic.com/business/archive/2012/01/where-did-all-the-workers-go-60-years-of-economic-change-in-1-graph/252018/</p> <p>Lee, Timothy B. 2016. The productivity paradox: why we're getting more innovation but less growth. Vox. https://www.vox.com/new-money/2016/10/24/13327014/productivity-paradox-innovation-growth</p> <p>Optional: Postrel, Virginia. 2015. Losing the thread. Aeon. https://aeon.co/essays/how-textiles-repeatedly-revolutionised-human-technology</p>
7	27 Feb	Classification, Categorization,	<p>Hacking, Ian. "Biopower and the Avalanche of Printed Numbers." In Biopower: Foucault and Beyond (2015).</p> <p>Starr, Douglas. 2012. Dracula was the original thug. Slate. http://www.slate.com/articles/health_and_science/science/2012/10/original_vampires_criminal_anthropologists_inspired_bram_stoker_s_dracula.html</p> <p>Madrigal, Alex. 2014. How Netflix Reverse-Engineered Hollywood. https://www.theatlantic.com/technology/archive/2014/01/how-netflix-reverse-engineered-hollywood/282679/</p>

	1 Mar	Standardization, Capitalism, Risk	<p>Cronon, William. 1991. Chap 3: Pricing the Future: Grain. In <i>Nature's Metropolis: Chicago and the Great West</i>. p97-147.</p> <p>Mackenzie, Donald. 2009. All those arrows. The London Review of Books. https://www.lrb.co.uk/v31/n12/donald-mackenzie/all-those-arrows</p> <p>Tett, Gillian. 2009. Genesis of the Debt Disaster. Financial Times. https://www.ft.com/content/51f425ac-351e-11de-940a-00144feabdc0</p>
8	6 Mar	Colonialism and Empire	<p>Misa, Thomas. 2011. Instruments of Empire, 1840-1914. From Leonardo to the Internet: Technology and Culture from the Renaissance to the Present.</p> <p>Appiah, Kwame Anthony. 2016. There is no such thing as western civilization. The Guardian. https://www.theguardian.com/world/2016/nov/09/western-civilisation-appiah-reith-lecture</p> <p>Optional: Mitchell, Timothy. 2002. Chap 3: The Character of Calculability. In <i>Rule of Experts: Egypt, Technopolitics, Modernity</i>. p80-123.</p> <p>China's infrastructure? https://limn.it/chinas-infrastructureal-fix/</p>
	8 Mar	Management	<p>Yates, Joanne. 1989. Managerial Methods and the Function of Internal Communication. In <i>Control Through Communication: The Rise of System in American Management</i>. Johns Hopkins University Press. pp1-20.</p> <p>McAfee, Andrew and Erik Brynjolfsson. 2012. Big Data: The Management Revolution. <i>Harvard Business Review</i>. https://hbr.org/2012/10/big-data-the-management-revolution</p>

9	13 Mar	Gender	<p>Oldenziel, Ruth. 1999. Unsettled Discourses. From Making Technology Masculine: Men, Women, and Modern Machines in America, 1870-145. pp19-50.</p> <p>Hicks, Marie. 2016. Against Meritocracy in the History of Computing. CORE: The Magazine of the Computer History Museum. pp29-33.</p> <p>Posner, Miriam. 2017. We can teach women to code, but that just creates another problem. The Guardian. https://www.theguardian.com/technology/2017/mar/14/tech-women-code-workshops-developer-jobs</p>
	15 Mar	Truth	<p>Alder, Ken. "A Social History of Untruth: Lie Detection and Trust in Twentieth-Century America." Representations 80.1 (2002): 1-33.</p> <p>Stephens-Davidowitz, Seth. 2015. Searching for Sex. The New York Times. https://www.nytimes.com/2015/01/25/opinion/sunday/seth-stephens-davidowitz-searching-for-sex.html</p> <p>Notopoulos, Katie. 2016. The Dating App That Knows You Secretly Aren't into Guys from Other Races. BuzzFeed. https://www.buzzfeed.com/katienotopoulos/coffee-meets-bagel-racial-preferences?utm_term=.wfmKQ3rklw#.dePMoYAKQy</p>
10	20 Mar	Case-study: The Google Search Engine	<p>Class Exercise: We will devote this class to a mock trial, where you will build on previous classes (on how to think about technology) and apply them to the Google Search Engine. There will be two groups in the class: one will be a concerned group of (liberal) citizens and journalists who will argue that Google needs to self-regulate (or else the government needs to regulate) to make sure that explicitly racist, sexist, and demonstrably false results should not show up high in the rankings. A second group will represent Google and argue that Google is doing its best and that indeed, its algorithms only represent what's out there.</p>
	22 Mar	Interlude: Technological Futures II	<p>Forster, E. M. 1909. The Machine Stops.</p> <p>Frase, Peter. 2011. Four Futures. Jacobin. https://www.jacobinmag.com/2011/12/four-futures/</p>

1 1	27 Ma r	Spring Break	
	29 Ma r	Spring Break	
1 2	3 Ap r	Quantification, Accountability, and Trustworthiness	<p>Porter, Theodore. 1995. Chap 7: U.S. Army Engineers and the Rise of Cost-Benefit Analysis. In <i>Trust in Numbers: The Pursuit of Objectivity in Science and Public Life</i>. p148-189.</p> <p>Christin, Angele. 2016. The hidden story of how metrics are being used in courtrooms and newsrooms to make more decisions. <i>Ethnography Matters</i>. http://ethnographymatters.net/blog/2016/06/20/the-hidden-story-of-how-metrics-are-being-used-in-courtrooms-and-newsrooms-to-make-more-decisions/</p> <p>Prokop, Andrew. 2017. The Congressional Budget Office, explained. <i>Vox</i>. https://www.vox.com/policy-and-politics/2017/3/13/14860856/congressional-budget-office-cbo-explained</p> <p>Gillespie, Tarleton. 2016. Algorithms, clickworkers, and the befuddled fury around Facebook Trends. <i>Culture Digitally</i>. http://culturedigitally.org/2016/05/facebook-trends/</p>
	5 Ap r	Intelligence and Work	<p>Forsythe, Diana E. "The construction of work in artificial intelligence." <i>Science, technology, & human values</i> 18.4 (1993): 460-479.</p> <p>Irani, Lilly. "Justice for 'Data Janitors'." <i>Public Culture</i> 15 (2015). http://www.publicbooks.org/justice-for-data-janitors/</p> <p>Russell, Andrew, and Lee Vinsel. 2016. "Hail the Maintainers: Capitalism excels at innovation but is failing at maintenance, and for most lives it is maintenance that matters more." <i>Aeon</i>. https://aeon.co/essays/innovation-is-overvalued-maintenance-often-matters-more</p>

1 3	10 Apr	Democratization	<p>Pfaffenberger, Bryan. "The social meaning of the personal computer: Or, why the personal computer revolution was no revolution." <i>Anthropological Quarterly</i> (1988): 39-47.</p> <p>Kelty, Christopher. "There is no free software." <i>Journal of Peer Production</i> 3 (2013). http://peerproduction.net/issues/issue-3-free-software-epistemics/debate/there-is-no-free-software/</p>
	12 Apr	Automation	<p>Zuboff, Shoshanna. 1988. <i>The Abstraction of Industrial Work. In In the Age of the Smart Machine: The Future of Work and Power.</i> Basic Books. pp58-96.</p> <p>Shestakofsky, Ben. 2015. High-Tech Hand Work: When humans replace computers, what does it mean for jobs and for technological change? Platypus Blog. http://blog.castac.org/2015/07/high-tech-handwork/</p> <p>Zittrain, Jonathan. 2009. <i>Minds for Sale.</i> YouTube.com. https://www.youtube.com/watch?v=Dw3h-rae3uo</p>
1 4	17 Apr	Privacy	<p>Zimmer, Michael. 2005. Privacy as Contextual Integrity (Parts 1 and 2). http://www.michaelzimmer.org/2005/04/12/privacy-as-contextual-integrity-part-1-problem-of-privacy-in-public/ and http://www.michaelzimmer.org/2005/04/13/privacy-as-contextual-integrity-part-2-norms-of-information-flow/</p> <p>Norton, Quinn. 2015. The hypocrisy of the internet journalist. Medium. https://medium.com/message/the-hypocrisy-of-the-internet-journalist-587d33f6279e</p> <p>Feinberg, Ashley. 2017. This Is Almost Certainly James Comey's Twitter Account. Gizmodo. http://gizmodo.com/this-is-almost-certainly-james-comey-s-twitter-account-1793843641</p> <p>Taylor, Astra and Jathan Sadowski. 2015. How companies turn your Facebook activity into a credit score. <i>The Nation</i>. https://www.thenation.com/article/how-companies-turn-your-facebook-activity-credit-score/</p>

	19 Apr	Fairness	<p>Brayne, Sarah. "Big Data Surveillance: The Case of Policing." American Sociological Review 82.5 (2017): 977-1008.</p> <p>Angwin, Julia, Jeff Larson, Surya Mattu and Lauren Kirchner. 2016. Machine Bias. ProPublica. https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing</p> <p>Corbett-Davies, Sam, Emma Pierson, Avi Feller and Sharad Goel. 2016. A computer program used for bail and sentencing decisions was labeled biased against blacks. It's actually not that clear. The Monkey Cage Blog. https://www.washingtonpost.com/news/monkey-cage/wp/2016/10/17/can-an-algorithm-be-racist-our-analysis-is-more-cautious-than-propublicas/?utm_term=.0be6846e7eaa</p>
15	24 Apr	Final Paper Presentations	
	26 Apr	Final Paper Presentations	
16	May 1	No class.	
	May 3	No class.	

Honor Code

The student community at UC Berkeley has adopted the following Honor Code: "As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others." The expectation is that you will adhere to this code both inside the classroom and outside. Reviewing lecture and reading materials and studying for exams can be enjoyable and enriching things to do with fellow students. This is recommended. However, unless otherwise instructed, homework assignments are to be completed independently and materials submitted as homework should be the result of one's own independent work.

The University code of ethics is very severe on academic misconduct, i. e. plagiarism and cheating. All written work submitted for a course, except for acknowledged quotations, must be expressed in the student's own words. It must also be constructed upon a plan of the student's own devising. Work copied without acknowledgement from a book, from another student's paper, from the internet, or from any other source is plagiarized. Plagiarism can range from

wholesale copying of passages from another's work to using the views, opinions, and insights of another without acknowledgement, to paraphrasing another person's original phrases without acknowledgement. All sources must therefore be documented and all usage of other material must be clearly cited in your papers. Plagiarism and cheating will have dramatic consequences for you, from failing the assignment to failing the entire course. All cases will also be referred to the Student Judicial Affairs, which can impose a variety of sanctions that can extend all the way to University expulsion. Please feel free to **ask your instructor** about how to integrate secondary materials into your own writing. For a full copy of the University code, see: <http://sa.berkeley.edu/code-of-conduct>. For guidelines on plagiarism, see: <http://sa.berkeley.edu/cite-responsibly>.