

# Syllabus for Undergraduate Course on *Computing Cultures*

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**Acknowledgement:**

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## **Course Description:**

Computers are powerful tools for working, playing, thinking, and living. Laptops, PDAs, webcams, cell phones, and iPods surround us. They are not just devices. They also provide narratives, metaphors, and ways of seeing the world. Computers have a long history in the workplace but, in the last 20 years, they have also become inextricably bound up in all aspects of our everyday lives. This generation of college students is the first for whom instant messaging, mobile phones, and on-line networking are a normal and an essential part of social life. How are the lives of people in the United States and elsewhere changing, for better and for worse, with these technologies? What cultural trends and political forces do they embody? And how could we design, engage, use, or not use them in ways that improve our lives and our societies?

In this course, we critically examine how computing technology and culture shape each other. We identify how computers, networks, and information technologies reproduce, reinforce, and rework historical trends, norms, and values. We look at the values embodied in the cultures of computing and consider alternative ways to imagine, build, and work with information technologies.

## **Learning Outcomes:**

Upon completion of this course, you will be able to:

- Analyze how computing both reshapes and reinforces historical, cultural, political context,
- Use concepts and ideas from Science & Technology Studies (STS), Sociology, and Anthropology to do so,
- Challenge widespread assumptions about computing and develop fresh, alternative perspectives,
- Construct compelling arguments in writing and conversation.

The course does not provide a comprehensive overview of every area of computing and culture. Instead, our goal is to hone our analytic skills by engaging with a small number of trends in depth.

## **Assignments:**

This is not a lecture class, but a class in a lecture hall. Much of the work in this course will involve your active participation in the form of interactive exercises, group discussions, and assignments.

### *1. Readings*

The foundation for your work in this class are the course readings, which contain the core course content. You are expected to have read thoughtfully the day's readings prior to coming to class. Course readings vary considerably in discipline and difficulty; be aware that reading length does not greatly correlate with expected reading time. You should bring the readings and your notes to class to ground our discussions. All other readings will be available online or handed out in class.

### *2. Class participation*

Your participation in class is essential to your success in the course. This is not a lecture course. The class format is interactive and activities-based. In class we will analyze, build on, and debate the course readings; practice analytic skills; work on assignments; and engage in other activities to help you master the materials. You will receive full participation credit for attending class.

**Please note:** If you miss class, you may receive substitute credit for participation by submitting written answers to the course activities within seven days of the missed class. Instructions for make-ups are included with the slides for each class, which can be accessed at our site on Piazza. Prior to doing your participation exercises, you are strongly

recommended to review not only the class slides (which are often minimalist) but also notes from one of your co-students. You may miss up to four classes without submitting make-ups during the semester. I strongly recommend you save these for interviews, illness, and personal disasters.

### 3. *Opinion pieces*

Over the course of the semester, you will write two short (600 to 800-word) opinion pieces and post them on piazza. In the piece, you will take a position regarding a current event or trend in computing. You will be able to pick two out of three different deadlines.

In addition to writing your own pieces, you will post at least one comment on another student's opinion within 5 days of each of the deadlines. These comments may be brief (3-5 sentences). Of course, you are welcome to carry on the discussion if you are interested. Comments are graded on a pass/fail basis; you will get full credit for any comment that shows engagement with another student's thoughts.

### 4. *News report*

Halfway through the semester, we will hold a press conference on the General Data Protection Regulation (GDPR) with an expert guest in class. You will be asked to write a 1,000-word news piece based on the press conference.

### 5. *Final essay*

Your final essay will be a 3,000 to 3,500-word critical analysis of a computing culture, drawing on class readings and discussions. We will start the writing process early in the semester and proceed in the following steps: (1) choice of question, (2) extended abstract, (3) feedback from instructors, (4) peer review workshop, (5) final essay.

### **Requirements for submitting written work:**

- Please word-process all written work, print it out and turn it in at the beginning of class on the due date
- Use standard font, in 12 point.
- Double-space, using 1-inch margins.
- Number your pages
- Staple your pages together (no paperclips, please)
- At the top of the first page include your name, assignment number, date, and essay title.
- Proofread and spell-check before bringing any drafts to class.
- Appropriate in-text citations (or footnotes) and a complete bibliography
- Please don't be late in your submissions

### **Writing Tips:**

We will be exploring a number of strategies and approaches to writing throughout the course, but here are some basic guidelines to start with:

- Academic writing usually takes the form of a conversation between various positions on a particular topic. In constructing your papers, try to bring relevant authors and/or arguments into *conversation* with one another.
- Be sure to not only proofread all writing before submitting it, but also *read it aloud* in order to determine whether A) the argument makes sense, B) the writing flows well, and C) the tone of the writing is appropriate.
- *Consider your audience* and write with the intention to make them understand. For the purposes of this course, the audience will be your instructor and fellow students who will read your work. At the same time, each of the assignments also require you to think about the audiences for a specific style of writing. For example, writing a newspaper/magazine article is very different from writing a book review or a user persona because their audiences

are different and the writing serves different purposes. We will discuss these differences in class before you get on with each assignment.

- Avoid broad generalizations, which are invariably difficult to support, and constantly anchor your writing with specific engagements with course readings.

## **Class Schedule:**

### ***Week 1: Welcome, Computing Cultures!***

An introduction to the class. We'll review course mechanics and get a sense of the puzzles and problems we will tackle.

Here is some information on the 2013 UN Women campaign, we will discuss in class:

- [UN Women - The Autocomplete Truth](#) (YouTube video)
- [UN Women press release](#)
- [Adweek article by David Griner](#)

### ***Week 2: Basics: Concepts, Tactics, and Sensibilities***

#### **Readings**

#### *First Session: Some Pretty Big Claims about Computing*

Much talk about computing is characterized by rather strong and simple narratives. In this session, we will analyze a number of examples, explore the notion of "cyberbole", and learn some useful analytical tools.

- Woolgar, Steve. "Five Rules of Virtuality." In *Virtual Society? Technology, Cyberbole, Reality*, edited by Steve Woolgar, 1–22. Oxford: Oxford University Press, 2002.

*Optional:*

- Crawford, Kate. [Think Again: Big Data](#). *Foreign Policy*, May 10, 2013.

#### *Second Session: Case 1: "Computers"*

What are computers and where do they come from? We'll look at some of the (surprising) ways in which people have approached the history of computing.

- Light, Jennifer S. "[When Computers Were Women](#)." *Technology and Culture* 40 no. 3 (1999): 455–483.

*Optional:*

- Grier, David Alan. "[Human Computers: The First Pioneers of the Information Age](#)." *Endeavour* 25, no. 1 (March 1, 2001): 28–32.
- Lunenfeld, Peter. *The Secret War Between Downloading and Uploading: Tales of the Computer as Culture Machine*. Cambridge, MA: The MIT Press, 2011, pp. 142-178 (Chapter: Generations).
- Graham-Cumming, John, [The Greatest Machine That Never Was](#). *TEDxImperialCollege*, 2012.

### ***Week 3: Basics: Concepts, Tactics, and Sensibilities (Continued)***

#### **Readings:**

#### *First session: Case 2: "Users"*

When people talk about computers, they also talk about "the user". In this session, we'll have a closer look at this rather strange and mystical figure.

- Wyatt, Sally. "Non-Users Also Matter: The Construction of Users and Non-Users of the Internet." In: *How Users Matter: The Co-Construction of Users and Technology*, edited by Nelly Oudshoorn and Trevor Pinch, 67–79. Cambridge and London: MIT Press, 2003.

Optional:

- Woolgar, Steve. "[Configuring the User: The Case of Usability Trials.](#)" *The Sociological Review* 38, no. S1 (May 1, 1990): 58–99.

*Second session: Case 3: "Cultures"*

New technologies are often said to be embedded in, represent, or make up "cultures". But what does that actually mean? How can we think about cultures of computing? For this class, we will try to answer some of these questions through an ethnography of internet scamming.

- Burrell, Jenna. "[Problematic Empowerment: West African Internet Scams as Strategic Misrepresentation.](#)" *Information Technologies & International Development* 4, no. 4 (2008): 15–30.

Optional:

- Lysloff, Rene T.A. "[Musical Community on the Internet: An On-line Ethnography.](#)" *Cultural Anthropology* 18, no. 2 (2003): 233–263.
- Turner, Fred. "[Where the Counterculture Met The New Economy: The WELL and the Origins of Virtual Community.](#)" *Technology and Culture* 46, no. 3 (2005): 485–512.

**Submission of Opinion Piece 1 is due at the end of this session.**

***Week 4: Private Worlds***

**Readings:**

*First session: Privacy and Boundaries*

What counts as "private" and "public", and why does it matter? How do people go about drawing the line between the two in practice?

- Nippert-Eng, Christena. "[Privacy in the United States: Some Implications for Design.](#)" *International Journal of Design* 1, no. 2 (2007): 1–10.

*Second session: Networked Privacy*

Privacy is not just an everyday practical challenge, but also an important political issue. In this session, we'll review and compare different approaches to conceptualizing privacy.

- Marwick, Alice E., and Danah Boyd. "[Networked Privacy: How Teenagers Negotiate Context in Social Media.](#)" *New Media & Society* 16, no. 7 (November 1, 2014): 1051–67
- "[Student Record Privacy Statement: Annual Notification Under FERPA.](#)" Cornell University.

Optional:

- Nissenbaum, Helen. "[A Contextual Approach to Privacy Online.](#)" *Daedalus* 140, no. 4 (2011): 32–48.

***Week 5: Private Worlds (Continued)***

**Readings:**

*First session: Terms and Conditions May Apply.*

- A documentary by Cullen Hoback about the many forms of surveillance and how they come together in a complex network of government agencies, companies, data brokers, and friends. Hoback, Cullen. "[Terms and Conditions Map Apply.](#)" *Hyrax Films*, 2013.
- Duhigg, Charles. "[How Companies Learn Your Secrets.](#)" *The New York Times*, February 16, 2012, sec. Magazine.

### *Second Session: Surveillance at Work*

Picking up from where the movie left us off, we'll be diving deeper into questions of everyday surveillance. What are the issues? How to think about them?

- Levy, Karen. "[The Contexts of Control: Information, Power, and Truck-Driving Work.](#)" *The Information Society* 31, no. 2 (2015): 160–174.

In preparation for the press conference next week, we will do two things: (1) do background research on the topic of the press conference, and (2) learn how to write a news report.

- Rich, Carole. *Writing and Reporting News: A Coaching Method*. 6th edition. Boston, MA: Cengage Learning, 2010, pp. 35-57 (The Basic News Story).
- Satariano, Adam. "[What the G.D.P.R., Europe's Tough New Data Law, Means for You.](#)" *The New York Times*, May 6, 2018.

### **Submission of Opinion Piece 2 is due at the end of this session.**

### *Week 6: Private Worlds (Continued)*

#### **Readings:**

#### *First session: Hacking Resistance*

What to do in view of all this talk about surveillance? We'll have a look at some of the strategies people have employed to deal with new forms of surveillance.

- Coleman, Gabriella. "[Code Is Speech: Legal Tinkering, Expertise, and Protest among Free and Open Source Software Developers.](#)" *Cultural Anthropology* 24, no. 3 (2012): 420–454.

#### *Optional:*

- Brunton, Finn, and Helen Nissenbaum. "[Vernacular Resistance to Data Collection and Analysis: A Political Theory of Obfuscation.](#)" *First Monday* 16, no. 5 (April 26, 2011).
- "[The Zuckerberg Files.](#)" The Zuckerberg Files. Accessed August 5, 2018.

### *Second Session: Press Conference*

We will have an expert guest, who will speak to us in class about GDPR. You will have a chance to ask questions and gather important materials for your news reports.

### *Week 7: Data Worlds*

#### **Readings:**

#### *First session: Raw, Big, and Other Data*

Data is "the new oil", people say. But what actually counts as "data"? Is there such a thing as "raw" data?

- Rosenberg, Daniel. "Data Before the Fact." In *Raw Data Is an Oxymoron*, edited by Lisa Gitelman, 15–40. Cambridge, MA: MIT Press, 2013.

#### *Optional:*

- boyd, danah, and Kate Crawford. "[Critical Questions for Big Data.](#)" *Information, Communication & Society* 15, no. 5 (June 2012): 662–79.

### *Second Session: Databases and Classification*

Collecting information and entering it into a database sounds harmless. But in real life, the way we organize and process data can have profound consequences.

- Bowker, Geoffrey C., and Susan Leigh Star. "The Case of Race Classification and Reclassification under Apartheid." In *Sorting Things Out: Classification and Its Consequences*, 195-225. Cambridge, MA: MIT Press, 1999.

Optional:

- Law, John. "[Seeing Like a Survey](#)." *Cultural Sociology* 3, no. 2 (July 6, 2009): 239–56.

**Submission of news report is due at the end of this session.**

**Week 8: Data Worlds (Continued)**

**Readings**

*First session: Spectacular Algorithms*

Algorithms are increasingly invoked as powerful actors that sort, rule, control, or otherwise govern our world. How to make sense of these mysterious entities?

- Gillespie, Tarleton. "[The Relevance of Algorithms](#)." In *Media Technologies*, edited by Tarleton Gillespie, Pablo Boczkowski, and Kirsten Foot. Cambridge, MA: MIT Press, 2013.
- Introna, Lucas D., and Helen Nissenbaum. "[Shaping the Web: Why the Politics of Search Engines Matters](#)." *The Information Society* 16, no. 3 (2000): 169–85.

Optional:

- Slavin, Kevin. "[How Algorithms Shape Our World](#)." *TEDGlobal* (2011).
- Helmreich, Stefan. "[Recombination, Rationality, Reductionism and Romantic Reactions: Culture, Computers, and the Genetic Algorithm](#)." *Social Studies of Science* 28, no. 1 (1998): 39–71.
- Seaver, Nick. "[Algorithmic Recommendations and Synaptic Functions](#)." *Limn* no 2 (2016).
- Ziewitz, Malte. "[Governing Algorithms: Myth, Mess, and Methods](#)." *Science, Technology & Human Values* 41, no. 1 (2016): 3–16.

*Second Session: Algorithmic Walk*

In this class, we will go on a walk – an algorithmic walk. Please dress appropriately. We will go rain or shine.

- Ziewitz, Malte. "A Not Quite Random Walk: Experimenting with the Ethnomethods of the Algorithm." *Big Data & Society* 4, no. 2 (2017): 1-13.

**Week 9: Data Worlds (Continued)**

**Readings**

*First Session: Automation and Discrimination*

Fairness is a big concern when it comes to "big data" applications. Who is responsible for associations and predictions made by statistical tools?

- Sweeney, Latanya. "[Discrimination in Online Ad Delivery](#)." *Communications of the ACM* 56, no. 5 (May 1, 2013): 44.

Optional:

- Ananny, Mike. "[The Curious Connection Between Apps for Gay Men and Sex Offenders](#)." *The Atlantic*, April 14, 2011.

*Second Session: Rating Cultures*

What happens when you invite people to rate their dishwashers, doctors, lawyers, hotels, haircuts, and ex-boyfriends online?

- David, Shay, and Trevor Pinch. "[Six Degrees of Reputation: The Use and Abuse of Online Review and Recommendation Systems.](#)" *First Monday* 11, no. 3 (2006).

### ***Week 10: Design Challenge: Devise a Rating Scheme***

#### **Readings**

##### *First session:*

We're going for an in-class design challenge: devise a rating scheme that solves a social problem (without creating too many new ones!).

- No readings. Think about a social problem that might be tackled through some sort of review or rating scheme.

##### *Second Session:*

We will conduct a poster session and present selected projects in class.

- No readings.

### **Submission of Opinion piece 3 is due at the end of this session.**

### ***Week 11: Material Worlds***

#### **Readings**

##### *First session: How to Think about Infrastructure*

What is "infrastructure" and how have different authors thought about it? What are the implications?

- Star, Susan Leigh, and Karen Ruhleder. "[Steps toward an Ecology of Infrastructure: Design and Access for Large Information Spaces.](#)" Edited by JoAnne Yates and John Van Maanen. *Information Systems Research* 7, no. 1 (1996): 111–34.

##### *Optional:*

- Edwards, Paul N. "[Y2K: Millennial Reflections on Computers as Infrastructure.](#)" *History and Technology* 15, no. 1–2 (September 1, 1998): 7–29.

##### *Second Session: Maintenance and Invisible Work*

This session is about the invisible work we all depend upon but rarely talk about: IT support, software maintenance, data cleaning, and repair.

- Star, Susan Leigh, and Anselm Strauss. "[Layers of Silence, Arenas of Voice: The Ecology of Visible and Invisible Work.](#)" *Computer Supported Cooperative Work (CSCW)* 8, no. 1–2 (1999): 9–30.

##### *Optional:*

- Irani, Lilly C., and M. Six Silberman. "[Turkopticon: Interrupting Worker Invisibility in Amazon Mechanical Turk.](#)" In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 611–20. CHI '13. New York, NY, USA: ACM, 2013.

### ***Week 12: Material Worlds (Continued)***

#### **Readings**

##### *First session: The Stuff of Computing*

How to think about the "stuff" computing cultures are made off?

- Leonardi, Paul M. "[Digital materiality? How artifacts without matter, matter.](#)" *First Monday* 15, no. 6 (2010).

##### *Optional:*



- Licoppe, Christian. "Understanding and Reframing the Electronic Consumption Experience: The Interactional Ambiguities of Mediated Coordination." In *Living in a Material World: Economic Sociology Meets Science and Technology Studies*, edited by Trevor Pinch and Richard Swedberg, 317–40. Cambridge, MA: MIT Press, 2008.
- Nakamura, Lisa. "[Indigenous Circuits: Navajo Women and the Racialization of Early Electronic Manufacture](#)." *American Quarterly* 66 no. 4 (2014): 919–941.

### *Second Session: Fiber and Trash*

There is even more “stuff” that we tend to overlook: fiber and trash. In this session, we will have a look at “the stuff in the ground” and “the stuff we throw away”.

- Starosielski, Nicole. "[Warning: Do Not Dig’: Negotiating the Visibility of Critical Infrastructures](#).” *Journal of Visual Culture* 11, no. 1 (April 1, 2012): 38–57.
- Gabrys, Jennifer. *Digital Rubbish: A Natural History of Electronics*. Ann Arbor: University of Michigan Press, 2011, chapter 3, ‘Shipping and Receiving,’ pp. 74-100.

### **Submission of Extended Abstract is due at the end of this session.**

### *Week 13: Material Worlds (Continued)*

#### **Readings**

#### *First session: Standards and Formats*

Standards and formats usually count as rather “boring” things. Let’s see if that’s the case.

- Excerpts from: Sterne, Jonathan. *MP3: The Meaning of a Format*. Durham: Duke University Press, 2012

#### *Optional:*

- Star, Susan Leigh, and Martha Lampland. “Reckoning with Standards.” In *Standards and Their Stories: How Quantifying, Classifying, and Formalizing Practices Shape Everyday Life*, edited by Martha Lampland and Susan Leigh Star, 3–24. Ithaca: Cornell University Press, 2008.

### *Second Session: Joker Session: Feedback from the Teaching Team*

We will use this session to provide feedback on your extended abstracts and answer your final essay questions.

### *Week 14: The Not-Quite-Human Other*

#### **Readings**

#### *First session: Bots and Robots*

What if computers talk back?

- Turkle, Sherry. *Life on the Screen: Identity in the Age of the Internet*. Simon & Schuster Trade, 1995, pp. 102-124 (Chapter 4: Taking Things at Interface Value).

#### *Second session: Workshop: Peer Review*

You’ll read and discuss each other’s feedback on extended abstracts.

- Two assigned extended abstracts from your classmates.

### **Submission of peer reviews is due before the beginning of this session.**

## ***Week 15: Wrap Up***

### **Readings:**

*First session: Movie Discussion*

Options:

- Jonze, Spike. "[Her.](#)" (2014).
- Garland, Alex. "[Ex Machina](#)" (2014).
- Oshii, Mamoru. "[Ghost in the Shell](#)" (1995).

*Second Session: Conclusion: Lessons and Leftovers*

Time to say goodbye and look back at what we learned this semester.

- No readings

**Submission of final essay is due at the end of the semester.**