Sociology of Information & Communication Technology

PANDEMIC EDITION

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Readings, office hours & TA info posted on onQ
Optional Q&A sessions will be held via Zoom on Fridays, 10am EST

Course description

Information and communication technologies pervade contemporary societies. Be it work or play, they form the infrastructures through which much of collective social life is mediated, and this has perhaps never been as clear as in this current moment of crisis. This course centers on how information technology produces, stabilizes, and unsettles social order; and how intersecting axes of oppression shape the kinds of technology we get in the first place. By critically engaging with theoretical frameworks and empirical studies, we will look at how social norms and values shape technology design, how technologies are implicated in maintaining social order, and how people use, appropriate, and resist technologies. The course is organized in two parts. The first part introduces you to a few key analytical sensibilities for studying the varied ways in which technology and society shape each other. The second part focuses on the politics of infrastructure, exploring how data, artificial intelligence, algorithms, and other large-scale information technology produce and stabilize political and economic power. We will end the course with questions about justice, liberation, and resistance against technologically mediated forms of oppression.

Because this year requires us to 'live' online to an extraordinary extent, alongside your engagement with current scholarship, you will also complete a series of digital literacy modules. These modules are designed to teach you a deeper understanding of your digital environments, as well as some practical tools how to navigate them safely. Ranging from spotting misinformation over taking control of your data to encryption, these modules will hopefully help you feel a little more equipped to navigate this strange new world.

Course schedule

W	Q&A	Topics	Digital literacy
1	Sept 11	Introduction	—
★	★ ★ ★	**Part I: Analytic sensibilities**	
2	Sept 18	The problem with technological determinism	—
3	Sept 25	Technology development	Using VPNs
4	Oct 2	Technology as social force	Recommendation algorithms
5	Oct 9	Cultures of computing	Encrypted messengers
★	★ ★ ★	**Part II: Politics of infrastructure**	
6	Oct 16	Infrastructures of empire	Cloud and disk encryption
7	Oct 23	Infrastructures of state violence	Anonymous browsing (TOR)
8	Oct 30	Fall mid-term break (no class)	—
9	Nov 6	Infrastructures of outrage	Filter bubbles
10	Nov 13	Infrastructures of predation	Media manipulation
11	Nov 20	Infrastructures of exclusion	Controlling your social media data
12	Nov 27	Towards a Scored Society?	Hiding from Google & Co.
13	Dec 4	Questions about justice & wrap-up	Digital harm-reduction strategies

Learning objectives

Through this course, you should gain:

- *knowledge and understanding*: the ability to identify and describe key questions and concerns of technology in society; as well as a command of basic concepts in science and technology studies;
- *critical thinking skills*: the assignments are designed to help you develop an analytical toolkit to make sense of the roles of information and communication technologies in social processes in a more systematic way. In this course, you will develop reading strategies with the aim of transferring concepts across different technologies and contexts.
- *Digital literacy skills*: since one of the key learning outcomes of this course is for you to understand how information technologies are bound up with social problems, and since we are now forced to do so much online, we have developed a series of digital literacy modules to help you protect yourself online. These modules teach you skills

from taking control of the data you leave online, to identifying misinformation and bots, to strategies how to shut down hate speech, interpersonal online violence, and cyberbullying.

Organization

The recommended workload for a normal undergraduate course is 10-12 hours per week, which falls into directed learning (i.e. 3 hrs. of lectures/week), self-directed learning (e.g. readings, note-taking) and assessments (quizzes, written assignments). Because of the pandemic, directed learning isn't possible in the same way as in an in-class setting: not everyone has robust internet access, for example, and not all students are in the same time-zone. Thus, I have recalculated and rebalanced the different learning components such that it will be possible for all students to successfully complete the course asynchronously, but we will keep optional tutorials and office hours so you can check in for Q & As. For the tutorials, you will be able to post questions to a discussion board, and we will answer your questions in tutorials. Those who will not be able to attend can post their questions and see a recorded version of the Q & A session later. Additionally, I am implementing a study-buddy-system to help you structure your week: you will be paired up with another student at the beginning of the term, and you will complete the digital literacy modules together. On the one hand, working in pairs of two should make it easier to learn the more practical aspects of the course content, and hopefully also more fun. On the other hand, scheduling a weekly timeslot with two people should also be more feasible, because you can be a lot more flexible.

The workload falls into ca. 5 hrs per week dedicated to keeping up with the ongoing course content, and the remaining 5 hrs for preparing and writing/finalizing your midterm and final assignment which you can organize around the deadlines. Here's a rough breakdown of the ongoing, weekly workload:

Content format	Purpose	Workload
Readings & note-taking	Preparation	60–90 min.
Media & lecture videos	Understanding	60 min.
Q & A sessions (optional)	Clarification	60 min.
Weekly reading reflections	Consolidation & critical thinking	30 min.
Weekly workload subtotal		4.25–4.75 hrs.

This leaves ca. 20 hours for researching and writing your midterm paper, and 40 hours for your final creative project which you can distribute according to the deadline and your own schedule.

I have posted detailed instructions for how to navigate the weekly course content on onQ, but in general, the succession is as follows: start by watching/listening to the media (documentaries, podcasts). The media pieces will help you make the week's topic concrete and illustrate

the significance of the scholarship you will be reading. Then do the readings and take notes. Then watch the prerecorded lectures which will explain an clarify a key concept/idea related to the readings. Post any remaining questions you might have to the discussion board and attend/listen to the Q&A session which we will hold live in the Friday timeslot. The Q&A sessions will be recorded for those who can't attend synchronously. Finally, complete the reading quizzes, to consolidate what you've learned, and think critically about its significance.

To help you stay on top of the content, I have punched in all due dates and deadlines into the onQ calendar. You can set up reminders through onQ as well, so that you get an email or a text message for each upcoming due date.

Assignments

Weekly assignments

- *Reading quizzes* (graded): I will give you three questions each week: 2 questions are knowledge questions about the readings and material I assigned that week, and one question is a critical thinking question. The knowledge questions either ask you to define a key concept, or explain the main argument of the reading. The critical thinking question asks you to reflect on the social and political implications of the phenomena you've learned about that week. Each quiz is worth 3 points: 1 point for each question. Your best 8 out of 10 quizzes will constitute your grade for this component.
- *Digital literacy modules* (pass/fail): Since this is a course about Information and Communication Technology, and those who can are living their lives online now, we will teach you some tricks how to safely navigate this hyper-online world. In teams of two, you will complete digital literacy modules which range from how to use a VPN, to browser safety, to encrypting your communication. After enrolment closes, I will pair you with another student—this will be your study buddy for the rest of the term. If you have a friend in the course, let me know and I will pair you up. Otherwise, I'll pick one for you. Each module is worth one point: if you complete it, you get one point, if you partially complete it, you get half a point, and if you don't complete it, you get 0 points. Best 8 out of 10.

Midterm assignment

Pandemic paper (graded): You will write a reflection paper in which you use a concept you learned in this course to analyze a phenomenon related to the pandemic and ICTs. I will provide a range of examples from the news which relate to the course topics, and you can either pick one of those for your reflection paper or propose your own (but then you'll have to check in with us to see if it's appropriate). Use two course readings. 3–4 pages, double spaced, excl. references.

Final assignment

Creative project (graded): For this assignment, you will apply the research you gathered in your midterm paper (in addition to any other research you do) to produce a creative project that aims to raise awareness about your topic/issue. The purpose of this assignment is to allow for more accessible forms of knowledge production than a standard paper, as well as for broader, more creative ways of communicating knowledge. In addition to the creative project itself, you must submit a brief description (ca. 500 words) of and rationale for your project. You must draw on at least one source from your midterm paper and two course readings for support, in addition to any other research you do. This description should explain: (1) What the project is and why you designed it as you did; (2) How the research from your paper informs your project; (3) How the project relates to course concepts on the mutual shaping of technology and society (draw on one course reading).

Grading, submission & deadlines

All written assignments have to be submitted through onQ. The late penalty is 5% per day (but see below for academic considerations and accommodations which are a little more relaxed during this pandemic). Grading and due dates are as follows, but see the onQ course calendar for exact deadlines:

Grade component	Due dates	Weight
Reading quizzes	weeks 3–11	30%
Digital literacy modules	weeks 3-12	20%
Pandemic paper	week 6	20%
Creative project	week 12	30%

For your final grade, your numerical course average then will be converted to a letter grade according to the Queen's Official Grade Conversion Scale.

Grade	Numerical Range	What these numbers mean in plain English
A+	90-100	
A	85-89	"very good work"
A-	80-84	
B+	77-79	
B	73-76	"good work"
B-	70-72	
C+	67-69	
C	63-66	"satisfactory work"
C-	60-62	
D+	57-59	
D	53-56	"pass"
D-	50-52	
F	49 and below	"unsatisfactory work"

Readings and resources

All readings will be available via onQ. Note that this material is copyrighted and is for the sole use of students registered in the course. This material shall not be distributed or disseminated to anyone other than students registered in the course. Failure to abide by these conditions is a breach of copyright, and may also constitute a breach of academic integrity under the University Senate's Academic Integrity Policy Statement.

Email etiquette

I ask you to only write emails when they can be answered in one or two sentences. The reason why I do this is because a concern that can be resolved in person in 5 minutes takes about 30 minutes if we are to answer them in emails. This then becomes a labor issue, because TAs are paid for only a limited number of hours per term. TAs have a contract for 130 hours per term for grading, tutorials, office hours, and prep. This is how I break down their hours:

- Prep (readings): 15 hrs
- Workshops: 10 hrs
- Office hours & email: 33 hrs
- Marking: 70 hrs

This means that in a class of 100 students with two TAs, they have each about 40 min. they can dedicate to each student for direct contact. So, please be mindful of their time–we love to

help you, but our day has only 24hrs and unpaid labor is never ok (but you can, of course, think about lobbying the Faculty of Art and Science to pay for more TA support).

Ground rules (TL;DR)

- No plagiarizing.
- Don't share the meeting info or the recorded lectures with anyone. This is considered a breach of academic integrity and may result in sanctions depending on the severity of the consequences (see section on academic integrity below).
- Don't share any of the course materials with anyone outside of the course, please.

Copyright of Course Materials

Course materials created by the course instructor, including all slides, presentations, handouts, tests, exams, and other similar course materials, are the intellectual property of the instructor. It is a departure from academic integrity to distribute, publicly post, sell or otherwise disseminate an instructor's course materials or to provide an instructor's course materials to anyone else for distribution, posting, sale or other means of dissemination, without the instructor's express consent. A student who engages in such conduct may be subject to penalty for a departure from academic integrity and may also face adverse legal consequences for infringement of intellectual property rights.

Academic Integrity

Queen's students, faculty, administrators and staff all have responsibilities for supporting and upholding the fundamental values of academic integrity. Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility (see www.academicintegrity.org) and by the quality of courage. These values and qualities are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University (see the Senate Report on Principles and Priorities).

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments and their behaviour conform to the principles of academic integrity. Information on academic integrity is available in the Arts and Science Calendar (see Academic Regulation 1), on the Arts and Science website, and from the instructor of this course. Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery and falsification, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulation on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the failure of a course to a requirement to withdraw from the university.

Be especially mindful of unintended plagiarism. Regardless of how and where you retrieve information, the principles of academic integrity apply. Please visit these helpful websites to help you make sure that you are able to write things in your own words:

- Resources from Queen's University
- Resources from MIT
- Resources from The University of Wisconsin

Accommodation for disabilities

Queen's University is committed to achieving full accessibility for people with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact the Queen's Student Accessibility Services (QSAS) and register as early as possible. For more information, including important deadlines, please visit the QSAS website.

If you are already registered with QSAS and you need accommodations, please reach out to me and we'll figure out together what would work best in your situation.

Academic considerations for students in extenuating circumstances

Queen's University is committed to providing academic consideration to students experiencing extenuating circumstances that are beyond their control and are interfering with their ability to complete academic requirements related to a course for a short period of time. The Senate Policy on Academic Consideration for Students in Extenuating Circumstances is available here.

Each Faculty has developed a protocol to provide a consistent and equitable approach in dealing with requests for academic consideration for students facing extenuating circumstances. Arts and Science undergraduate students can find the Faculty of Arts and Science protocol and the portal where a request can be submitted at: http://www.queensu.ca/artsci/accommodations. Students in other Faculties and Schools who are enrolled in this course should refer to the protocol for their home Faculty.

If you need to request academic consideration for this course, you will be required to provide the name and email address of the instructor/coordinator. Please use the contact information given at the beginning of this syllabus.

Readings & Material

Week 1: Introduction

No readings this week. We'll organize ourselves for the term and talk a little bit about what it means to learn about Information & Communication Technology during a pandemic as we are struggling to navigate what feels like a million different technologies and platforms (platforms who are making a big buck during this pandemic).

Week 2: The problem with technological determinism

How do we conceptualize technology/society relationships?

Media

Lo and behold: Reveries of the connected world. Directed by Werner Herzog and Rupert Maconick, 2016. [documentary]

Readings

- MacKenzie, Donald A. and Judy Wajcman (1999). "Introductory Essay. The Social Shaping of Technology". In: The Social Shaping of Technology. Ed. by Donald A. MacKenzie and Judy Wajcman. Milton Keynes: Open University Press, pp. 3–27.
- Winner, Langdon (1980). "Do Artifacts Have Politics?" In: Dædalus 109.1, pp. 121–136.

Week 3: Technology development

How do social forces shape technology development?

Media

Hidden Figures. Directed by Theodore Melfi, 2017. [movie]

Readings

- Light, Jennifer S. (1999). "When Computers Were Women". In: Technology and Culture 40.3, pp. 455–483.
- McIlwain, Charlton D. (2020). Black software. The Internet and racial justice, from the AfroNet to Black Lives Matter. New York: Oxford University Press, "The Battle for Black Cyberspace."
- Hicks, Mar (2017). "A Feature, Not a Bug". In: Technology's Stories 5.4.

Week 4: Technology as social force

How does technology shape society?

Media

Coded Bias. Directed by Shalini Kantayya, 2020. [documentary]

Readings

- Noble, Safiya Umoja (2018). Algorithms of oppression. How search engines reinforce racism. New York: New York University Press, "Searching for Black Girls."
- Benjamin, Ruha (2019). Race after Technology. Abolitionist Tools for the New Jim Code. Medford, MA: Polity, "Engineering Inequity."

Week 5: Cultures of computing

How does prejudice end up in information technology?

Media

Plug & Pray. Directed by Jens Schanze, 2010. [documentary]

Readings

- Broussard, Meredith (2018). Artificial unintelligence. How computers misunderstand the world. Cambridge Massachusetts: The MIT Press, "Hello AI" and "Popular Doesn't Mean Good."
- Möllers, Norma ([under review]). A Culture of Disengagement. Computer Science and the Question of Justice in Algorithms. Cambridge, MA: MIT Press, "How Computer Scientists Theorize the Social."

Week 6: Infrastructures of empire

How do large-scale technological systems (de)stabilize geopolitical order?

Media

The Hidden Infrastructure of the Internet. Directed by Ben Mendelsohn, 2011. [documentary]

Readings

- Starosielski, Nicole (2015). The undersea network. Durham: Duke University Press, "Circuitous Routes".
- Duarte, Marisa Elena (2017). Network sovereignty. Building the internet across Indian Country. Seattle: University of Washington Press, "The Overlap between Technology and Sovereignty."

Week 7: Infrastructures of state violence

How does information technology figure in projects of state-sponsored violence?

Media

Hannah Arendt. Directed by Margarethe von Trotta, 2012. [movie]

Readings

- Bowker, Geoffrey C. and Susan Leigh Star (2000). Sorting Things Out. Classification and Its Consequences. Cambridge, Mass.: MIT Press, "The case of race classification and reclassification under Apartheid."
- Genosko, Gary and Scott Thompson (2006). "Administrative Surveillance of Alcohol Consumption in Ontario, Canada. Pre-Electronic Technologies of Control". In: Surveillance & Society 4.1-2, pp. 1–28.

Week 8: Fall mid-term break (no class)

Week 9: Infrastructures of outrage

How do social media contribute to political polarization and the current global rise of authoritarianism?

Media

The Great Hack. Directed by Karim Amer and Jehane Noujaim, 2019. [documentary]

Readings

- Nadler, Anthony, Matthew Crain, and Joan Donovan (2017). Weaponizing the Digital Influence Machine. The Political Perils of Online Ad Tech. New York, New York: Data & Society Research Institute.
- Daniels, Jessie (2018). "The Algorithmic Rise of the "Alt-Right"". In: Contexts 17.1, pp. 60–65.

Week 10: Infrastructures of predation

How do market infrastructures reinforce social stratification along race & class?

Media

The Card Game. PBS Frontline, Season 27, Episode 17, 2009. [documentary]

Readings

- Fourcade, Marion and Kieran Healy (2013). "Classification situations. Life-chances in the neoliberal era". In: Accounting, Organizations and Society 38.8, pp. 559–572.
- Nopper, Tamara K. (2019). "Digital Character in "The Scored Society". FICO, Social Networks, and Competing Measurements of Creditworthiness". In: Captivating Technology. Ed. by Ruha Benjamin. Duke University Press, pp. 170–187.

Week 11: Infrastructures of exclusion

How does social media data figure in digital redlining?

Media

Facebook Lets Advertisers Exclude Users by Race. Investigation by Julia Angwin and Terry Parris Jr. ProPublica, 2016. [print]

Facebook (Still) Letting Housing Advertisers Exclude Users by Race. Investigation by Julia Angwin, Ariana Tobin, and Madeleine Varner. ProPublica, 2017. [print]

Facebook Is Letting Job Advertisers Target Only Men. Investigation by Ariana Tobin and Jeremy B. Merrill. ProPublica, 2018. [print]

Readings

- Gillespie, Tarleton (2014). "The relevance of algorithms". In: Media technologies. Essays on communication, materiality, and society. Ed. by Tarleton Gillespie, Pablo J. Boczkowski, and Kirsten A. Foot. Cambridge Massachusetts: The MIT Press, pp. 167–193.
- Mellet, Kevin and Thomas Beauvisage (2020). "Cookie monsters. Anatomy of a digital market infrastructure". In: Consumption Markets & Culture 23.2, pp. 110–129.

Week 12: Towards a Scored Society?

Are scoring technologies becoming a hegemonic cultural logic? In other words, are we moving towards a "Scored Society?"

Media

Nosedive. Directed by Joe Wright. Black Mirror, Season 2, Episode 1, 2016. [tv]

Readings

- Citron, Danielle and Frank Pasquale (2014). "The Scored Society. Due Process for Automated Predictions". In: Washington Law Review 89.1, pp. 1–33.
- Espeland, Wendy Nelson and Michael Sauder (2016). Engines of anxiety. Academic rankings, reputation, and accountability. New York, New York: Russell Sage Foundation, "Introduction."

Week 13: Questions about justice & wrap-up

How can we make information technology *for* communities and *for* liberation?

Readings

- Costanza-Chock, Sasha (2020). Design justice. Community-led practices to build the worlds we need. Cambridge MA: The MIT Press, "Design Pedagogy."
- Noel, Vernelle A. A. (2020). "Situated Computations: Bridging Craft and Computation in the Trinidad and Tobago Carnival". In: Dearq 27, pp. 62–75