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Civic Tech and Algorithms for Social Good
Term: Spring 2026

This course introduces students to the field of civic technology and examines how civic digital tools and algorithms shape public life. We explore how civic tech systems are designed, what policy goals they advance, and what trade-offs they create for different communities. Students will learn to reason about public good through multiple frameworks and to evaluate civic tech tools not just by their technical features, but by social impact, risks, and limitations. They will gain knowledge of frameworks and accessible tools for civic tech design, testing, and sharing, and the means of assessing their impact.

Course Plan

We'll be meeting weekly on Thursdays at 10:10 - 13:10 EST (16:10 - 19:10 CET) to discuss the following topics:

Module 1: What civic tech is and what "public good" means
Module 2: How algorithms make social decisions and where they fail
Module 3: How to evaluate tools with data and evidence
Module 4: How to design responsibly

Starting Module 2, we'll sometimes be joined by invited speakers from the industry or public sector working on responsible and civic tech. I'd like to keep these discussions open and candid, so they'll be held under the Chatham House Rule: students can discuss what was said at the meetings with others outside the course, but cannot attribute any comments or ideas to a specific invited speaker or their organization.

The course concludes with student project presentations.

Course Requirements

Despite what perhaps is a very technical name, there's **no technical pre-requisites** for this course. You don't need programming knowledge or prior experience building digital tools of any kind, although these are very welcome. The only requirement is having interest in technology and zealousness for questions of public good.

Readings

You should complete all required readings. Most of these are social science research articles and book chapters, not fiction, so you do not need to focus on individual words or phrases. Instead, focus on the argument, evidence, structure, and style. Recommended readings are optional and are here for you to dive deeper if interested. Use them to select papers for in-class presentations.

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Workshopping and tools overview
In the latter part of several weekly meetings, we will use a workshop format to introduce hands-on civic tech tools and existing solutions, including open data repositories, mapping and visualization platforms, and storytelling and publishing tools. These sessions will be intentionally introductory and require either no or minimal coding experience. The goal is to help students understand what tools exist, what they are used for, and how to approach them in further work.

Grading

1. Final Project – 50%
Your final project may take one of the following forms:

- A written proposal of a civic tech project, including need justification, expected impact, outcome metrics;
- An empirical research plan focused on a topic covered in class;
- An evaluation plan, tied to a critical analysis of a tech tool in the public sector.

Projects may be completed individually or in groups of 2-4 students.

Midterm (20%): Submission of your project draft.
Final (30%): Submission of the completed project and in-class presentation.

2. Class Participation – 25%
Presence, thoughtful contributions to class discussions, and participation in interactive class activities are expected.

3. Brightspace Responses – 15%
Short assignments posted on Brightspace that guide your work on the final project.

4. In-Class Paper Walkthrough – 10%
Present and talk us through one of the papers assigned for that week's recommended reading (not required reading). Presentations may be done individually or in groups of 2, using slides or any other format you prefer. The goal is to clearly and accurately explain the paper's main argument, how the authors support it, and to reflect on any questions, critiques, or extensions you would like to raise.

Detailed Plan

Module 1: Ideas and goals behind civic tech. What is public good? How ideas get instantiated in tech design.
Week 1: Intro to civic and responsible technology.
Required content: Matt Stempeck, Sifry, M., Simpson, E. 2016. Towards a taxonomy of civic technology.
Homework: Browse the Civic Tech Field Guide repository of projects. Pick a project or two that speak to your interests for an interactive task during our first meeting.
Recommended content:

Ezra Klein's interview with Jennifer Pahlka. "The Book I Wish Every Policymaker Would Read." The Ezra Klein Show, June 6, 2023.

Week 2: Civic tech and the public sector; technoskepticism and solutionism. Governmental and municipal data and their sources.
Required reading:
Morozov, Evgeny. To Save Everything, Click Here. Public Affairs, 2013. 1-14.
Green, Ben. "The Innovative City: The Relationship between Technical and Nontechnical Change in City Government." The Smart Enough City (2019). 117-131, 137-142.
Ermoshina, Ksenia. "Civic hacking. Redefining hackers and civic participation." Tecnoscienza–Italian Journal of Science & Technology Studies 9, no. 1 (2018): 79-90, 94-101.
Recommended content:
Schrock, Aure. Politics Recoded: The Infrastructural Organizing of Code for America. MIT Press, 2024. 39-51.
Daron Acemoglu. Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity. Public lecture hosted by the Becker Friedman Institute for Research in Economics, University of Chicago.

Week 3: Normative foundations and public interest. From normative frameworks to optimization. How public interest shapes design choices.
Required reading:
Bueno de Mesquita, Ethan. "Political economy for public policy." (2016). Normative Frameworks: 16-59.
Stray, Jonathan, Ivan Vendrov, Jeremy Nixon, Steven Adler, and Dylan Hadfield-Menell. "What are you optimizing for? Aligning recommender systems with human values." arXiv preprint arXiv:2107.10939 (2021).
Recommended reading:
Jafari Naimi, Nassim, Lisa Nathan, and Ian Hargraves. "Values as hypotheses: design, inquiry, and the service of values." Design issues 31, no. 4 (2015): 91-104.
Varanasi, Uttishta Sreerama, Karolina Drobotowicz, and Johanna Ylipulli. "Equity in the Design of Digital Public Services: A Scoping Review of the Definitions, Approaches and Measurements used in HCI." In 12th International Conference on Communities & Technologies, pp. 44-57. 2025.

Week 4: Principles of public interest tech design. Free and open-source software, peer-to-peer, interoperability. Data collection and privacy. Choosing tools according to your needs.
Required reading:
Yochai Benkler. The Wealth of Networks. (2006): 59-67.
Ostrom, Elinor, and Charlotte Hess. "Understanding knowledge as a commons." From Theory to Practice, Massachusetts (2007). 3-14.
Shilton, Katie. "Values levers: Building ethics into design." Science, Technology, & Human Values 38, no. 3 (2013): 374-386, 390-394.

Module 2: Algorithms as governing systems. Uses, limits, and structural failures.
Week 5: Algorithms and algorithmic decision-making.

Required reading:
Kleinberg, Jon, and Eva Tardos. Algorithm design. Pearson Education India, 2006. 1-12.
Gillespie, Tarleton. "The relevance of algorithms." Media technologies: Essays on communication, materiality, and society 167, no. 2014 (2014): 167.
Christin, Angèle. "From daguerreotypes to algorithms: machines, expertise, and three forms of objectivity." ACM SIGCAS computers and society 46, no. 1 (2016): 27-32.
Seaver, Nick. "Algorithms as culture: Some tactics for the ethnography of algorithmic systems." Big data & society 4, no. 2 (2017): 2053951717738104.
Recommended content:
Scott, James C. Seeing like a state: How certain schemes to improve the human condition have failed. Yale University Press (2020): 11-33.
The Algorithm Register of the Dutch government.
Registers of government AI.
The UK Office for Statistics Regulation. "Ensuring statistical models command public confidence Learning lessons from the approach to developing models for awarding grades in the UK in 2020".

Week 6: Tech fairness & bias. Algorithmic transparency in the public sector. Guest speaker (TBA)
Required reading:
Eileen Guo, Gabriel Geiger, Justin-Casimir Braun. "Inside Amsterdam's high-stakes experiment to create fair welfare AI." MIT Technology Review (2025).
"Case Study 5: Hiring By Machine" Princeton Dialogues on AI and Ethics.
Todd Feathers. "It Takes a Small Miracle to Learn Basic Facts About Government Algorithms". The Markup. (2023)
Recommended reading:
Raviv, Shir. "When do citizens resist the use of AI algorithms in public policy? Theory and evidence." (2024).
Redden, Joanna, Jessica Brand, Ina Sander, Harry Warne, A. Grant, and D. White. "Automating public services: learning from cancelled systems." Cardiff, UK: Data Justice Lab, Cardiff University 30 (2022).
Johnson, Nari, Sanika Moharana, Christina Harrington, Nazanin Andalibi, Hoda Heidari, and Motahhare Eslami. "The fall of an algorithm: Characterizing the dynamics toward abandonment." In Proceedings of the 2024 ACM Conference on Fairness, Accountability, and Transparency, pp. 337-358. 2024.

Week 7: Moving beyond observable bias. Midterm consultations.
Required reading:
Arvind Narayanan. "What if algorithmic fairness is a category error?" Working paper. (2025)
Bursztyn, Leonardo, Benjamin Handel, Rafael Jiménez-Durán, and Christopher Roth. "Product market traps: The case of social media".
Recommended content:
Ashwin, Julian, Aditya Chhabra, and Vijayendra Rao. "Using large language models for qualitative analysis can introduce serious bias." Sociological Methods & Research (2023).
Selbst, Andrew D., Danah Boyd, Sorelle A. Friedler, Suresh Venkatasubramanian, and Janet Vertesi. "Fairness and abstraction in sociotechnical systems." In Proceedings of the conference on fairness, accountability, and transparency, pp. 59-68. 2019.
Net 0 ++: Reporting on AI's climate injustices w/ Karen Hao.

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Module 3: How do we know civic tech works? Methods for evidence in tech and policy

Week 8: What does it mean for a tool to work? Measuring impact; correlation and causation. Intro to basic principles of quantitative research and A/B testing.

Required reading:

Druckman, James N., Donald P. Greene, and James H. Kuklinski, eds. Cambridge handbook of experimental political science. Cambridge University Press, 2011. Chapter 2. Experiments: An Introduction to Core Concepts.

Grimmer, Justin. "We are all social scientists now: How big data, machine learning, and causal inference work together." PS: Political Science & Politics 48, no. 1 (2015): 80-83.

Recommended reading:

King, Gary, Jennifer Pan, and Margaret E. Roberts. "Reverse-engineering censorship in China: Randomized experimentation and participant observation." Science 345, no. 6199 (2014): 1251722.

Ventura, Tiago, Rajeshwari Majumdar, Jonathan Nagler, and Joshua A. Tucker. "Misinformation Beyond Traditional Feeds: Evidence from a WhatsApp Deactivation Experiment in Brazil." The Journal of Politics (2025).

Bond, Robert M., Christopher J. Fariss, Jason J. Jones, Adam DI Kramer, Cameron Marlow, Jaime E. Settle, and James H. Fowler. "A 61-million-person experiment in social influence and political mobilization." Nature 489, no. 7415 (2012): 295-298.

Week 9: Measuring impact continued. Intuitions behind quasi-experimental designs; data sources for digital research, reactive and non-reactive data; sources for web-based and LLM-based experiments.

Required reading:

Rosenbaum, Paul R., P. Rosenbaum, and Briskman. Design of observational studies. Vol. 10. New York: Springer, 2010. 1-13.

Fieldhouse, Rachel, and Mohana Basu. "Australia's world-first social media ban is a natural experiment for scientists." Nature (2025).

Enikolopov, Ruben, Alexey Makarin, and Maria Petrova. "Social media and protest participation: Evidence from Russia." Econometrica 88, no. 4 (2020).

Week 10: Qualitative studies in civic tech and human-computer interaction. Tools for qualitative coding and text analysis at scale. Tools for visualization and story-telling.

Required reading:

Social Research Methods: Qualitative and Quantitative Approaches W. Lawrence Neuman. Chapter 4.

Creswell, John W., and Cheryl N. Poth. Qualitative inquiry and research design: Choosing among five approaches. Sage publications, 2016. 53-76.

Christin, Angèle. "Algorithms in practice: Comparing web journalism and criminal justice." Big data & society 4, no. 2 (2017)

Recommended reading:

Yousufi, Mohsin YK, Charlotte Alexander, and Nassim Parvin. "Credibility Boosters as a Lens for Understanding Epistemic Injustice in Civic Tech: The Case of Heat Seek." Proceedings of the ACM on Human-Computer Interaction 9, no. 7 (2025): 1-30.

Hassoun, Amelia, Ian Beacock, Sunny Consolvo, Beth Goldberg, Patrick Gage Kelley, and Daniel M. Russell. "Practicing information sensibility: How Gen Z engages with online information." In Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems, pp. 1-17. 2023.
Manuel, Jennifer, and Clara Crivellaro. "Place-based policymaking and HCI: Opportunities and challenges for technology design." In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems, pp. 1-16. 2020.
Becker, Howard S. "The epistemology of qualitative research." Braz. J. Empirical Legal Stud. 1 (2014): 185.

Week 11: Mixed methods for applied research and development. Using APIs and web-scraping. Reproducibility and ways of sharing your work publicly.
Required reading:
Brown, Megan A., Andrew Gruen, Gabe Maldoff, Solomon Messing, Zeve Sanderson, and Michael Zimmer. "Web Scraping for Research: Legal, Ethical, Institutional, and Scientific Considerations." arXiv, (2024).
Nanqin Ying. The Evolving Landscape of Web Scraping on Social Media Platforms. (2025).
Rao, Vijayendra. "Can Economics Become More Reflexive?." Development Research (2022).
Recommended content:
Paoli, Angela Delli, and Giuseppe Masullo. "Digital social research: topics and methods." Italian Sociological Review 12, no. 7S (2022): 617-617.

Module 4: Designing accountable, participatory, and democratic civic technologies.
Week 12: Understanding communities and their needs; guest speaker from Pol.is (TBA)
Required reading:
DiSalvo, Carl. "Design, democracy and agonistic pluralism." (2010).
Yang, Joshua C., and Fynn Bachmann. "Bridging voting and deliberation with algorithms: Field insights from vTaiwan and kultur komitee." In Proceedings of the 2025 ACM Conference on Fairness, Accountability, and Transparency. 2025.
Landemore, Hélène, Lucy Bernholz, and Rob Reich. "Open democracy and digital technologies." Digital technology and democratic theory (2021): 62-89.
Recommended reading:
Revel, Manon, and Théophile Pénigaud. "AI-Facilitated Collective Judgements." arXiv preprint arXiv:2503.05830 (2025).
Warne, Harry, Lina Dencik, and Arne Hintz. "Advancing civic participation in algorithmic decision-making: A guidebook for the public sector." (2021).
Gilman, Michele E. "Democratizing AI: Principles for meaningful public participation." Data & Society (2023).
Farrell, Henry, and Hahrie Han. "AI and Democratic Publics" Artificial Intelligence (2025).

Week 13: Accountability, transparency, private companies and the state; final project consultations.
Required reading:
Schaake, Marietje. "The tech coup" (2025). Chapters: The Weaponization of Everything; Tech on the Front Lines.

Couture, Stephane, and Sophie Toupin. "What does the notion of "sovereignty" mean when referring to the digital?" New media & society 21, no. 10 (2019): 2305-2322.
Recommended reading:
Prasad, Revati. "People as data, data as oil: The digital sovereignty of the Indian state." Information, Communication & Society 25, no. 6 (2022): 801-815.

Week 14: Open-source and public generative AI; guest speaker from Public AI (TBA); final project presentations and discussion
Required reading:
Oriane Peter. Will Swiss AI Save Swiss Democracy? (2025)

Week 15: Final project presentations and discussion

Policies

Late submission policy
Late assignments will drop one letter grade per 24 hours. If you have an emergency or need more time for a good faith reason, please reach out to me.

Attendance
Each student may miss one class over the course of the semester without a negative impact on their final grade. If lateness becomes a chronic problem, it will begin to count toward absences. For special circumstances, please email me.

Academic integrity
Cases of plagiarism result in an automatic failure on the assignment.

Disabilities
Please let me know within the first two weeks if you need any accommodations.

Responsible AI use
If you put your name on an assignment, you are responsible for its accuracy and integrity. You may use generative AI, but you must do so creatively, critically, and responsibly. For example, if you cite references that do not exist or can't walk us through your work during the discussion, you may receive a zero on that assignment.

If you do use AI to help you reflect, open the Study and Learn mode if in ChatGPT, or an analogous Socratic dialogue-like prompt in any other tool you use. Using AI for proofreading your texts is also fine but do try to keep your own voice.

Caveat
If I need to make any changes to this syllabus, including due dates, I will announce them as early as possible so students can adjust their schedules.