Technology & Society

Course Abstract

This course is designed as a writing and discussion-intensive seminar. Students will not only analyze and critique readings but also develop their skills in verbal reasoning, communication, and collaborative inquiry. Assignments prioritize critical engagement, intellectual exploration, and the ability to articulate ideas both in writing and through spoken reflection. Students will be responsible for leading discussions, submitting structured weekly audio or video reflections, and producing a small number of formal written essays. The course culminates in a final research paper or project. This format is intended to foster thoughtful dialogue, practical communication skills, and the development of independent scholarly inquiry.

Course Learning Goals

By the end of this course, students will be able to:

- **Critically analyze and evaluate** how technologies shape, and are shaped by, social, cultural, economic, and political contexts.
- **Synthesize concepts and arguments** from a range of interdisciplinary sources to develop nuanced perspectives on technology and society.
- **Articulate and defend arguments** both in writing and through spoken reflection, demonstrating clarity, rigor, and intellectual independence.
- **Lead scholarly discussion** by framing key questions, identifying tensions in the material, and facilitating productive dialogue.
- **Connect theoretical frameworks to real-world issues**, applying course concepts to contemporary technological debates and ethical challenges.
- **Develop research and communication skills** through analytical essays, multimedia reflections, and a culminating independent project.

Assignments

This course emphasizes critical engagement through writing, multimedia reflection, and collaborative discussion. Assignments are designed to promote intellectual exploration, strengthen communication skills, and encourage independent inquiry. Over the course of the semester, students will:

- Lead at least one class discussion, preparing guiding questions and helping facilitate dialogue.
- Submit weekly structured audio or video reflections, focusing on key ideas, questions, and connections from the readings.
- Complete 2 short analytical essays (4–6 pages) synthesizing course themes and developing written arguments.
- Produce a final research paper or project (10–15 pages or equivalent work), applying course concepts to a topic of the student's choice.

Class Structure

Typical class sessions will balance student-led discussion and instructor-facilitated lecture or dialogue.

- Approximately 30% of class time will be dedicated to student-led discussion. Discussion leaders will frame key ideas, pose questions, and facilitate conversation, with support and moderation from the instructor.
- Approximately 70% of class time will involve instructor lectures, guided dialogue, and collaborative exploration of the week's topics. Lectures will not only introduce and contextualize key concepts and readings but also respond to student questions and ideas raised during discussions.

Unit 1 - Introduction

1.1: What Counts as a Technology?

Lesson Goals:

Students will examine and classify different forms of technology, develop conceptual distinctions between technology and tools, and reflect on how historical and cultural contexts influence the framing of what counts as a technology.

Readings & Resources:

- "Technology: Critical History of a Concept" by Eric Schatzberg (Introduction + Chapter 1) *[required]* ***History of Technology / Humanities***
- "The Nature of Technology: What It Is and How It Evolves" by W. Brian Arthur (Chapter 1) *[optional]* ***Engineering / Economics***
- "We design technology, technology designs us" by Katleen Gabriëls *[optional]* ***Philosophy / Ethics***

1.2: The Information Age

Lesson Goals:

Students will develop a foundational understanding of the transition to the Information Age, identify major technological milestones, and apply this historical perspective to assess how the logic of information technologies shapes contemporary social, political, and economic life.

Readings & Resources:

- "The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies" by Erik Brynjolfsson and Andrew McAfee (Chapter 1 & 2) *[required]* ***Economics / Technology Policy***
- "A Brief History of Computing" by Gerard O'Regan (Chapters 1 & 2) *[optional]* ***Computer Science / History***
- Timeline from the Computer History Museum *[optional]*
- The Personal Computer Revolution: Crash Course Computer Science *[optional]*

1.3: Technology & Society

Lesson Goals:

Students will examine key domains where emerging technologies have brought significant societal change. Students will apply concepts like mediation, affordance creation, and value expression to analyze the influence of technologies on human behavior and values, and

develop a framework for understanding how technologies shape and are shaped by societal contexts.

Readings & Resources:

- “The Social Construction of Technology: The Development of the Bicycle” by Pinch & Bijker *[required]* ***Sociology / Science & Technology Studies***
- “Technological Mediation in Design and Use: A Plea for Responsible Technology” by Peter-Paul Verbeek *[optional]* ***Philosophy / Ethics***

Unit 2: Big Data & Surveillance Capitalism

2.1: Behavioral Excess & Monetizing Data

Lesson Goals:

Students will develop a foundational understanding of the history of behavioral excess and its monetization. Students will analyze how data-driven business models in the technology sector capitalize on behavioral data, critically examining the consequences for individuals, the economy, and society.

Readings & Resources:

- “The Age of Surveillance Capitalism” by Shoshana Zuboff (Chapters 1 & 3) *[required]* ***Sociology / Political Economy***
- “Big Data: A Revolution That Will Transform How We Live, Work, and Think” by Viktor Mayer-Schönberger and Kenneth Cukier (Chapters 1 & 2) *[optional]* ***Data Science***
- Privacy Is Power by Carissa Veliz (Chapter 2) *[optional]* ***Ethics / Public Policy***

2.2: Engagement, Encroachment, & Prediction

Lesson Goals:

Students will critically examine the logic of engagement maximization, encroachment, and behavioral prediction as employed by major tech firms. Students will evaluate the effects of these strategies on privacy, autonomy, and decision-making, and assess how these practices shape user behavior and broader social outcomes.

Readings & Resources:

- “The Age of Surveillance Capitalism” by Shoshana Zuboff (Chapter 5) *[required]* ***Sociology / Political Economy***

- “Weapons of Math Destruction” by Cathy O’Neil (Chapter 1) *[optional]* ***Data Ethics / Public Policy***
- “Stand Out of Our Light” by James Williams (Chapters 2 & 3) *[optional]* ***Philosophy / Media Studies***

2.3: Attention Hacking, Nudges, & Gamification

Lesson Goals:

Students will develop an understanding of gamification and attention-hacking strategies in the context of social media and other digital platforms. Students will analyze how these strategies affect autonomy, affordance structures, and values, and critically assess their psychological and societal impacts.

Readings & Resources:

- “How Twitter Gamifies Communication” (C. Thi Nguyen) *[required]* ***Philosophy / Media Studies***
- “Stand Out of Our Light” by James Williams (Chapter 4) *[optional]* ***Philosophy / Media Studies***

Unit 3: Media Literacy & Disinformation

3.1: Why Media Literacy Matters

Lesson Goals:

Students will develop an understanding of the importance of media literacy in navigating the modern information landscape. Students will apply media literacy concepts to evaluate information sources, detect misinformation, and analyze how media literacy promotes informed citizenship and critical engagement with media.

Readings & Resources:

- “The Misinformation Age: How False Beliefs Spread” by Cailin O’Connor and James Owen Weatherall (Introduction + Chapter 1) *[required]* ***Philosophy of Science / Social Epistemology***
- “You Think You Want Media Literacy… Do You?” by Danah Boyd *[optional]* ***Media Studies / Sociology***
- “What Makes Media Literacy So Complicated?” by Renee Hobbs *[optional]* ***Education / Media Studies***
- “How to choose your news” by Damon Brown *[optional]* ***Media Literacy / Journalism***

3.2: Epistemic Bubbles & Echo Chambers

Lesson Goals:

Students will develop an understanding of how epistemic networks supervene on social networks, shaping the ways individuals acquire and evaluate information. Students will critically examine how algorithmic filtering and social connections contribute to the formation of epistemic bubbles and echo chambers, and assess strategies to mitigate their effects.

Readings & Resources:

- "Escape the Echo Chamber" by C. Thi Nguyen *[required]* ***Philosophy / Epistemology***
- "The Real Bias Built In at Facebook" by Zeynep Tufekci *[optional]* ***Sociology / Technology Studies***
- "How Propaganda Works" by Jason Stanley (Introduction) *[optional]* ***Philosophy / Political Sociology***

3.3: Disinformation & Misinformation

Lesson Goals:

Students will develop an understanding of disinformation and misinformation as distinct but related phenomena that undermine trust in institutions, media, and politics. Students will analyze how these dynamics influence public trust, political stability, and the spread of falsehoods—including deepfakes and algorithmically amplified conspiracies.

Readings & Resources:

- "Information Wars: How We Lost the Global Battle Against Disinformation and What We Can Do About It" by Richard Stengel (Introduction + Chapter 1) *[required]* ***Political Science / International Relations***
- "The Reality Game: How the Next Wave of Technology Will Break the Truth" by Samuel Woolley (Introduction + Chapter 2) *[optional]* ***Media Studies / Technology Policy***
- "Disinformation: The Nature of Facts and Falsehoods in the Age of Media Manipulation" by Donald A. Barclay (Introduction + Chapter 1) *[optional]* ***Media Studies***

Unit 4: Artificial Intelligence & Big Data Bias

4.1: What is AI? (A History)

Lesson Goals:

Students will develop an understanding of the history and development of artificial intelligence, focusing on key milestones and shifts in the field. Students will critically examine how

conceptions of AI have evolved—from early aspirations to mimic human intelligence and achieve artificial general intelligence (AGI) to the modern focus on statistical learning and task-specific outputs—and evaluate how these shifts reflect changing societal expectations and technical challenges.

Readings:

- "Artificial Intelligence: A Very Short Introduction" by Margaret A. Boden (Chapter 1) *[required]* ***Cognitive Science / Philosophy***
- "Artificial Intelligence: A Guide for Thinking Humans" by Melanie Mitchell (Chapter 1) *[optional]* ***Computer Science***
- "Machines of Loving Grace: The Quest for Common Ground Between Humans and Robots" by John Markoff (Chapters 1-3) *[optional]* ***Technology Journalism / History***

4.2: Biases in Big Data

Lesson Goals:

Students will develop an understanding of how large data sets inherit biases, including those rooted in human behavior and systemic inequities. Students will critically examine two primary sources of bias: those generated by the humans who create data and those arising from incomplete or unrepresentative datasets. Students will evaluate how these biases affect AI models and compare efforts to mitigate bias in both algorithmic and human decision-making.

Readings & Resources:

- Algorithms of Oppression by Safiya Umoja Noble (Introduction + Chapter 1) *[required]* ***Data Ethics / Information Studies***
- "Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy" by Cathy O'Neil (Chapter 5 & 7) *[optional]* ***Data Ethics / Public Policy***
- "How I'm fighting bias in algorithms" by Joy Buolamwini *[optional]* ***Computer Science / Data Ethics***

4.3: Artificial Intelligence & Accountability

Lesson Goals:

Students will develop an understanding of the ethical and practical challenges of accountability in the use of artificial intelligence systems. Students will critically examine how responsibility should be allocated among AI creators, implementers, and the systems themselves, and assess the appropriateness of AI use across various domains, considering factors such as system reliability, decision-making stakes, and the necessity of keeping a human "in the loop."

Readings & Resources:

- "Human Compatible: Artificial Intelligence and the Problem of Control" by Stuart Russell (Introduction + Chapters 1 & 2) *[required]* ***Computer Science / AI Ethics***

- “Technology and the Virtues” by Shannon Vallor (Chapter 5) *[optional]* ***Philosophy / Ethics***
- “Moral Responsibility and Artificial Intelligence: A Case Study of Autonomous Vehicles” by Sven Nyholm *[optional]* ***Philosophy / Applied Ethics***

Unit 5: Global Perspectives on Technology & The Digital Divide

5.1: Technology and Global Inequities

Lesson Goals:

Students will explore how recent technological advancements rely on and perpetuate global inequities, particularly between the Global North and Global South. Students will critically examine the ethical and societal implications of these divides by analyzing labor practices, resource extraction, and regulatory disparities, and evaluate potential strategies for addressing these inequities.

Readings & Resources:

- “Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass” by Mary L. Gray & Siddharth Suri (Introduction + Chapter 1) *[required]* ***Sociology***
- “Your AI is On Fire” by Mar Hicks *[optional]* ***History of Technology***
- “Colonialism in the Cloud” by Kavita Philips *[optional]* ***Science & Technology Studies***
- “The Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence” by Kate Crawford (Chapters 2) *[optional]* ***Media Studies / Data Ethics***

5.2: Technology & Sustainability

Lesson Goals:

Students will explore the dual role of technology in exacerbating and addressing environmental challenges. Students will critically examine the environmental consequences of technological transitions—such as the reliance on rare-earth minerals for electrification—and analyze how consumerism and resource consumption impact sustainability. Students will also assess the positive contributions of technology, including innovations in renewable energy, AI-driven climate modeling, and sustainable manufacturing practices.

Readings & Resources:

- “The Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence” by Kate Crawford (Chapters 1 & 3) *[required]* ***Media Studies / Data Ethics***
- Westervelt. 2023. The “Electrify Everything” Movement’s Consumption Problem. *[optional]* ***Environmental Journalism / Energy Policy***

- “Artificial Intelligence and Climate Change” by David Rolnick (2022) *[optional]* ***Computer Science / Environmental Studies***

5.3: Technosolutionism?

Lesson Goals:

Students will critically examine the concept of technosolutionism—the tendency to rely on technological solutions for complex social, political, and health problems. Students will evaluate both the benefits of technology-driven problem-solving and the potential pitfalls, including neglecting root causes or displacing practical judgment and wisdom (phronesis). Students will engage with critiques and defenses of techno-optimism and develop nuanced positions on when and how technological solutions are appropriate.

Readings & Resources:

- “Techno-Optimism: An Analysis, An Evaluation, and a Modest Defense” (John Danaher) *[required]* ***Philosophy / Ethics***
- *The Innovation Delusion* by Lee Vinsel & Andy Russell (Introduction + Chapters 1 & 6) *[optional]* ***History of Technology / Public Policy***
- “Why Technology Hasn’t Fixed the Climate Crisis” by Jill Lepore *[optional]* ***History / Journalism***
- “AI and Phronesis” by Nir Eisikovits and Dan Feldman *[optional]* ***Philosophy / Ethics***