

# Phil. 175 Introduction to the Philosophy of Technology

## Syllabus Spring 2021

Credits: 4 | Gen Ed: SB | Prerequisites: None

### Instructor

Tim Juvshik  
South College E416  
[tjuvshik@umass.edu](mailto:tjuvshik@umass.edu)

Time: TBD  
Room: TBD  
Office Hours: TBD

### Course Description

This course explores a number of philosophically and ethically significant questions about the nature of technology and how it interacts with, improves, harms, and ultimately structures our individual lives and society as a whole. Technological development has increased markedly since the Industrial Revolution and within the span of two centuries we have seen society become dependent on artificial sources of energy, mechanized production, and globalized communication. A proliferation of new technologies is increasingly altering the human experience, from driverless cars and virtual reality, to artificial intelligence, genetic and geo-engineering, ubiquitous internet connectivity, and social media. Questions that may be explored in this course include, but are not limited to: (a) What is technology? (b) What's the relation between science and technology? (c) Is technology necessarily good or bad for human flourishing or is it neutral? (d) Do we need a distinctive ethics for technology or particular technologies? (e) Do designers have special responsibility for how the technologies they create are used? (f) Should we geo-engineer the planet to combat climate change? (g) Should we artificially improve the human condition through genetic enhancement? (h) Is your smartphone a part of you? (i) When a driverless car hits someone, who is responsible? (j) Should we grow meat in labs rather than factory farms? (k) Can sex in a video game or with a robot ever be wrong? (l) Does social media help us live more authentically or does it structure our self-identity in harmful ways? The primary goal of this course is to engage in a range of philosophically and ethically significant questions about technology and our relation to it. The answers to these questions lie somewhere between two common attitudes towards technology: an unbridled optimism that technology will improve our lives and a romanticized Ludditism that desires a return to pre-technological human society. While there is much to appreciate and much to criticize about modern technology, both appreciation and criticism need to be tempered with critical and rational reflection, which we will pursue in this course.

### Course Goals and Learning Objectives

General Education courses are directed towards four categories of learning: Content, critical Thinking, Communication, and Connections. In order to understand the goals of this course, it is helpful to think of them in terms of their relationship to these categories.

#### *Content*

This class provides an introduction to central problems in the philosophy of technology through the analysis of historical developments of technology, current modern technology, and emerging and future technologies. Philosophical methods of reasoning, argumentation and conceptual analysis will be used to study how technology affects and structures our lives individually and society as a whole. The course will include an overview of major philosophical theories of technology from ontological, epistemic, ethical, and aesthetic perspectives, and what these theories say about what technology is, its relation to science, personal identity, culture, the environment, and humans' place in nature. We will

investigate how technology, such as social media and communication devices, affect and form our identity, whether technology determines human nature and thus distinguishes us from animals, and how different technologies mediate our relationships to ourselves, others, and our environment, both natural and socio-cultural. Given the rapidly changing nature of technology, we will look at how emerging and future technologies, such as driverless cars and AI, are constantly redefining these relationships.

### *Critical Thinking*

This course introduces students to a variety of philosophical methods and skills, with a focus on critical analysis of arguments and theories. It offers a diversity of critical perspectives on technology and technological development and its effects on individuals and societies that will expose students to core concepts in philosophy of technology, allowing students to synthesize diverse viewpoints and apply them to current, emerging, and future technologies.

### *Communication*

Throughout the course, students will have the opportunity to develop argument reconstruction and analysis skills and learn how to communicate critical evaluations of arguments and theories, orally and through written work. Students will also learn to effectively and clearly communicate their own views on topics and offer rational justification for their positions through weekly reading responses, short written assignments, and papers. Students will be able to apply the concepts, knowledge, and skills acquired in this class to new and future technologies and communicate their findings to others through oral presentations.

### *Connections*

A major underlying theme of the course is how technology is constantly evolving and concomitantly redefining and restructuring human identity, society, and relationships. Thus, students will develop the ability to apply the concepts and philosophical methods learned in this course to current emerging technology, such as virtual reality, genetic engineering, and geo-engineering, allowing them to assess its value and risks to individuals, society, and the environment. Students will also be able to identify and evaluate the role of various technologies in their own life and their larger socio-cultural context, as well as think more clearly and critically about questions concerning technology and their own use of it.

With the importance of the issues covered, in particular the ways technology impacts and changes human life, nature, and society, the focus on critical analysis and diverse perspectival thinking, and the stress on clear written and verbal communication, this course meets the goals of the General Education Social and Behavioral Sciences designation.

### **Grading**

Letter grades (corresponding to a 4-point scale: A=4, A-=3.7, B+=3.3, etc.) will be based on the following:

|                              |     |
|------------------------------|-----|
| Reading Responses            | 20% |
| Short Paper 1                | 15% |
| Short Paper 2                | 20% |
| Final Paper                  | 25% |
| Presentations                | 10% |
| Attendance and Participation | 10% |

## Assignments

### *Reading Responses*

Students will complete short reading responses of various types throughout the semester for each class day for which there is a reading. These responses are intended to help with reading comprehension and analysis and to help stimulate class discussion. Some of these are reading questions that tie to previous readings, some are open-ended invitations for thoughts on a topic, some are to raise objections to the author's view, and some are requests for questions about something you didn't understand in the reading. Collectively, these are worth 20% of your grade. They will be graded pass/fail (Pass=A, Fail=F) based on whether you answered the prompt in a way that shows that you attempted to engage with the readings. They are due by the start of the class in which we are discussing the relevant reading. Complete and submit your responses on Moodle.

### *Short Paper 1*

Students will write a short (2-3 page), 'compare and contrast' paper, due mid-semester and worth 15% of the final grade. This assignment will involve picking two philosophers we read or philosophical views we covered in class, to compare and contrast. Papers should follow the standard compare/contrast structure: thesis statement identifying the two things being compared/contrasted, and then comparison/contrast either consecutively by author or concurrently by individual point. Students should illustrate their chosen authors' views using a single example technology throughout. The purpose is to illuminate subtle similarities and differences in key assumptions that aren't obvious to the reader about two different perspectives on technology, thereby facilitating a critical evaluation of the course content through comparison of different points of view.

### *Short Paper 2*

Students will write a second short paper (2-3 pages), that chooses an emerging technology as a case study, worth 20% of the final grade and due sometime after the break. As they become more advanced, various technologies such as genetic and geo-engineering, AI (Siri, Alexa), virtual reality, and driverless cars pose new ethical challenges. Students will report on the moral implications and difficulties their chosen emerging technology poses using the philosophical concepts and theories we learned in class, thereby drawing connections between the course content and concrete emerging technologies that are restructuring daily life. Students will then give recommendations for future researchers, designers, users, and policy makers on how to address these challenges. Students will have the opportunity to discuss ideas in class in small groups.

### *Final Paper*

Students will write a longer, final paper (3-6 pages) due at the end of term, which counts for 25% of the final grade. Final papers will address a broader philosophical issue about technology that we covered in class. Final papers are expected to address multiple readings and may involve outside research, and make some contribution to the philosophical debate by students offering their own view on the issue they're critically evaluating. Final papers will include a thesis, summary of the philosophical issue and respective positions on the topic, application/illustration of the positions using a particular technology (students are encouraged to refer to the technologies discussed in their second short paper and presentations), and a critical evaluation of the debate with a conclusion offering rational justification for your own view on the topic. Students are encouraged to discuss their paper topics with me beforehand.

### *Presentations*

There is a short presentation, worth 10% of your grade. One or two students will present each session (starting after add-/drop). Students will pick a potential future technology that doesn't currently exist but is described or portrayed in some science fiction medium (novel, short story, movie or TV show, video game). Students will analyze this technology from a philosophical perspective, with a focus on how it changes human experience and what ethical questions/difficulties it raises. Students will present their findings to the class in a 5-10 minute presentation followed by a short Q&A. Presentation structure (handout, slides, etc.) is up to you. Note that there is a difference in degree between emerging and future technologies (e.g. Siri and the AIs in Terminator). Students should choose different, unrelated technologies for their second short paper and their presentations.

### *Attendance and Participation*

There is an attendance and participation grade, worth 10% of your grade. Your showing up and being attentive and engaged in lecture will be reflected in your attendance and participation grade. This grade will start off at 100%, but can be negatively affected by unexcused absences from lecture (I will regularly take attendance either through roll call or by having students hand in questions at the end of class; you have two 'freebies'), and if you regularly violate the electronics policy or if you are disruptive in lecture (talking to friends, wearing headphones, regularly coming in late, doing homework for other classes, etc.). Students may also gain participation marks by e-mailing me or coming to my office hours.

### **Class Expectations**

- **Course Readings:** Students should do all the assigned readings *before* the class in which they're discussed. All readings are available on the course webpage. There is no textbook, but students should print articles so they can bring them to class.
- **Attendance and Participation:** Attendance in class is expected. I will take attendance and keep track of student contributions in class. You can miss up to 2 classes without penalty and without notifying me. Any further absences will need to be justified.
- **Electronics Policy:** Laptops, tablets, and phones are not permitted during class unless needed for in-class work. Using electronics is distracting to both yourself and others, and studies have shown that it lowers grades of the user and those around them. If you require a special accommodation regarding electronics please come see me to request an exemption.
- **Late Work Policy:** Late assignments without an extension will be downgraded by 1/3 of a letter grade per day after the due date (e.g. A to A-), up to a penalty of 2 full letter grades (after which they won't be accepted). Consult with me to request an extension. Late reading responses will be graded as F.
- **Classroom Etiquette:** Students are expected to respect each other, allow others the chance to speak, and be open-minded to views different from their own. The topics covered may be controversial and evoke strong reactions. Please be aware of, and sensitive to, the feelings and experiences of others.
- **Syllabus:** Readings and schedule are subject to change. Any changes will be announced in class and on the course Moodle page.

## **Academic Honesty**

Students should not plagiarize their work. Just don't do it. It's not worth it, it's very easy to get caught and it undermines the whole point of you being here. I will follow UMass official policies when handling cases of academic dishonesty. After meeting with me, a student who has plagiarized can choose between two options. The formal option involves a hearing before the Academic Dishonesty Board. The informal option involves agreeing to the instructor's terms and signing a document to that effect. This informal resolution is filed with the Academic Dishonesty Board. Should a student have three filed informal resolutions, official disciplinary action will be taken. Consult UMass' website for further information: <https://www.umass.edu/honesty/>.

## **Accessibility**

I am committed to making this class accessible and welcoming for all students. Students with documented disabilities are encouraged to contact Disability Services in 161 Whitmore, or at <http://www.umass.edu/disability> to register and request any accommodations you might need. If you anticipate receiving accommodations from Disability Services, but are still waiting on paperwork, please come tell me as soon as you can so that we can put necessary accommodations in place.

## **Provisional Reading List**

\*\*This reading list serves as an illustration of the readings used; not all readings listed may be used\*\*

### **Week 1: What Is Philosophy of Technology?**

- Alan Drenghson, "Four Philosophies of Technology"
- Carl Mitcham, "Humanities Philosophy of Technology"
- William Lawrence, "The Relation of Science and Technology to Human Values"

### **Week 2: What Is Technology?**

- L. Marx, "Technology: The Emergence of a Hazardous Concept"
- Val Dusek, "What Is Technology?"
- August Comte, "The Nature and Importance of the Positive Philosophy"
- Aristotle, on 'Techné' and 'Epistémé' (from the *Physics*)
- W. Brian Arthur, *The Nature of Technology: What It Is and How It Evolves* (selections)

\*\*Presentation dates assigned\*\*

### **Week 3: What Is Technology?**

- Martin Heidegger, "The Question Concerning Technology"
- Borgman, "Focal Things and Practices"
- Hubert Dreyfus, "Heidegger on Gaining a Free Relation to Technology"
- Carl Mitcham, "Three Ways of Being-With Technology"

### **Week 4: Science and Technology**

- Thomas Kuhn, “Paradigms and Anomalies in Science”
- Dosi, “Technological Paradigms”
- Ian Hacking, “Experimentation and Scientific Realism”
- Bruno Latour, “Laboratories”
- James Feibelman, “Pure Science, Applied Science, and Technology: An Attempt at Definitions”
- Bernstein, “Four Physicists and the Bomb”

### **Week 5: Science and Technology**

- George Basalla, *The Evolution of Technology* (selections)
- Henry Petroski, *The Evolution of Useful Things* (selections)
- Gould and Gould, *Animal Architects* (selections)
- Paul Thompson, “Science Policy and Moral Purity: The Case of Animal Biotechnology”
- Peter Kroes, “Design Methodology and the Nature of Technical Artifacts”

### **Week 6: Technology and Society**

- Marx and Engels, “Capitalism and the Modern Labour Process”
- Ure, “The Philosophy of Manufactures”
- Langdon Winner, “Do Artifacts have Politics?”
- Andrew Feenberg, “Democratic Rationalization: Technology, Power, and Freedom”
- Bruno Latour, “A Collective of Humans and Non-Humans”
- Michel Foucault, “Panopticism”

### **Week 7: Technology and Society**

- Jacques Ellul, “The ‘Autonomy’ of the Technological Phenomenon”
- Joseph Pitt, “The Autonomy of Technology”
- Langdon Winner, “Artifice and Order”
- Postman, “Technopoly: The Surrender of Culture to Technology”
- Mackenzie and Wacjman, “The Social Shaping of Technology”
- Pinch and Bijker, “The Social Construction of Technological Systems”
- Elizabeth Kolbert, “Our Automated Future”

\*\*First Short Paper Due\*\*

### **Week 8: Technology and Ethics**

- James Morar, “Why We Need a Better Ethics for Emerging Technologies”
- Frederik Ferré, “Ethics, Assessment, and Technology”
- Paul Goodman, “Can Technology be Humane?”
- Hans Jonas, “Technology and Responsibility”
- Evan Selinger, “Technology Transfer and Globalization”

## **Week 9: Technology and Ethics**

- McArthur, “The Case for Sexbots”
- Sparrow, “Killer Robots”
- Nyholm, “The Ethics of Crashes with Self-Driving Cars”
- Jenkins, “Autonomous Vehicles, Ethics, and Law”
- Hartzog and Selinger, “Facial Recognition is the Perfect Tool for Oppression”
- Strachan Donnelly, “The Brave New World of Animal Biotechnology”
- Mittelstadt et al., “The Ethics of Algorithms”
- Judy Wacjman, “Domestic Technology: Labour-Saving or Enslaving?”
- Gary Comstock, “Ethics and Genetically Modified Food”
- Jonathan Ong and Jason Cabañes, “When Disinformation Studies Meets Production Studies: Social Identities and Moral Justifications in the Political Trolling Industry”

\*\*Second short papers due\*\*

## **Week 10: Technology and Human Life**

- Julian Savulescu, “Genetic Interventions and the Ethics of Enhancement”
- Michael Sandel, “The Case Against Perfection”
- Leon Kass, “Preventing a Brave New World”
- Carl Mitcham, “Philosophy of Information Technology”
- John Seely Brown and Paul Duguid, “The Social Life of Information”
- Peter Singer, “Visible Man: Ethics in a World Without Secrets”
- Sherry Turkle, “Life on the Screen: Identity in the Age of the Internet”

## **Week 11: Technology and Human Life**

- Donna Haraway, “Cyborg Manifesto”
- Ian Hacking, “Making Up People”
- Selinger and Engstrom, “A Moratorium on Cyborgs”
- Clarke and Chalmers, “The Extended Mind”
- Nick Bostrom, “In Defense of Posthuman Dignity”
- Daniel Dennett, “Consciousness in Human and Robot Minds”
- Gideon Lewis-Kraus, “The Great AI Awakening”

## **Week 12: Technology and the Environment**

- Katz, “The Big Lie: Human Restoration of Nature”
- Andrew Light, “Ecological Restoration: From Functional Descriptions to Normative Prescriptions”
- Evernden, “Nature in Industrial Society”
- David Keith, “Engineering the Planet”
- James Temple, “The Growing Case for Geoengineering”
- Rajni Kothari, “Environment, Technology, and Ethics”

### **Week 13: Technology and the Environment**

- Hicks and Millstein, “Genetically Modified Organisms: Non-Health Issues”
- David Rotman, “Why We Will Need Genetically Modified Foods”
- Paul B. Thompson, “Value Judgements and Risk Comparisons: The Case of Genetically Engineered Crops”
- Henry David Thoreau, *Walden* (selections)
- Arne Næss, “Deep Ecology”
- Ramachandra Guha, “Radical American Environmentalism: A Third World Critique”
- Andrew Light, “Urban Ecological Citizenship”
- Jessica Woolliams, “Designing Cities and Buildings as if They Were Ethical Choices”
- Joseph Pitt, “Design Criteria in Architecture”
- Craig Hanks, “Cities, Aesthetics, and Human Community”

\*\*Final papers due on last day of the semester\*\*