

**TECH 5010:Values at Play in Digital Technologies  
Cornell Tech - TECH 5010-- Studio Elective**

**Credits: 1 hour**

Fall 2020

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**About the course:**

Digital technologies have raised important ethical questions. Although often the focus is how ethical issues arise from ways people and organizations have used these technologies, there is growing interest in ethical values associated with the design and development of digital systems and devices. The study of values in, or values embodied in technology, has grown in importance as computer scientists, engineers, and data scientists seek to pursue sound ethical practice alongside excellence in technical practices. This course module introduces students to ethical thinking in the design and development of technical systems. With basic readings and introductory lectures, it provides students a background in how to think about ethical values as a dimension of design and development. It adopts a framework known as, Values at Play, as a heuristic paradigm for putting these ideas into practice. Students are encouraged to apply this learning to their own projects.

**Intended learning outcomes:**

Students who successfully complete this course will be able to:

- Recognize how and to what extent values are embedded in technical systems, by design or accident.
- Engage critically with everyday technical systems.
- Recognize instances of design that seem to elevate or obstruct certain values.
- Engage actively with values embodied in particular systems or devices so as to recognize alternative designs with differing values implications.
- Engage with fundamental concepts in the philosophy and social study of technology.
- Critically analyze key social and political issues surrounding contemporary digital information systems and networks, e.g. privacy, intellectual property, freedom of speech.
- Demonstrate conceptually or by prototype the values implications of particular design choices in particular systems.
- Show an ability to think rigorously and systematically about values relevant to technical systems and features of systems.

**Teaching and Learning Methodologies (Virtual edition)**

Classes will comprise a variety of activities including instructor presentation, classroom discussion of readings, small group work analyzing cases, and student presentations. In this, the VAP virtual edition, the class meets 2X on Thursdays. **Class one** will be conducted in **traditional lecture style covering concepts and readings** with Instructor leading the class and inviting **student questions and reactions to readings**. **Class two** will be devoted to **small group assignments oriented around weekly readings and concepts** culminating with work on **group projects**. Instructor and TA will make up groups after the first meeting taking into account student preferences, time zones, and, where possible, a blend of disciplines!

**Reading**

Course readings are essential to the class. Students are expected to complete reading assignments *before* class meetings. I strongly encourage the habit of taking written notes, annotating these notes with page numbers. This practice is known to improve comprehension and retention of material and will improve the quality of in-class participation. Readings vary considerably in discipline and level of difficulty; how challenging they are to students will depend on respective background familiarity with concepts, theories, and arguments. Whether students benefit and learn from this course, and how much, will be a function of how much effort you invest in grappling with and mastering the readings.

**Grading elements:**

30% Participation: In-class and online

- 20% Group work
- 30% Group Project design mod inspired by values (video+ppt)
- 20% Individual Project Essay (~1000 words)

Students are expected to adhere to the Cornell Code of Academic Integrity.

## SCHEDULE

### October 22 – Introduction to the course

- What the course is about
- Lectures, groupwork, final project
- Being a conscientious technologist

### October 22 - Group work

Finding your group

- Readings:
  - Postman, N. Five Things We Need to Know About Technological Change

### October 29 – Values@Play: background and intro

- Ethics and politics in technology
- The Practical Turn
- Readings: --
  - *Values at Play*, chapters 1 and 4
  - Winner, L. "Do Artifacts Have Politics?" *The Whale and the Reactor*. Chicago: The University of Chicago Press, 1986, 19-39

### October 29 -- Group work

Each group "excavates" ethical and political values embedded in:

- 1) (Short) Choose one of these: subway entry systems (e.g. NYC MTA, or other); different rules for queues; Kindle reader; Instagram likes.
- 2) (Longer) Choose a dating app (Tinder, OKCupid, eHarmony, Bumble, Hinge... ); choose a second one that differs in at least one way that is relevant to ethics/politics.

Hint: prompt your excavation by referring to Postman's 5 "things;" draw definitions from Winner and VAP chapter 1.

### November 5 – VAP Framework: Discovery

- Sources of Values
- Operational definition
- What values; whose values?
- Readings:
  - *Values at Play*, chapter 5
  - Friedman & Nissenbaum, Bias in Computer Systems

### November 5 -- Group work

Continuing the work you began but now drawing on the VAP framework:

- 1) Pick one of the cases from last week's group work, proceed through a similar exercise with the outcome of excavating (discovering) values but this time draw on the Discovery component (parts I and II).
- 2) Put yourself in the position of a designer, who Cornell Tech invites you to write a specification to install a video surveillance in Bloomberg. Go through all of the various steps of the discovery process and document your reflections for each step. *Really* put yourself into the mindset of being a conscientious designer; list as many values as you can

think about, as they relate to various characteristics of the system and the technical choices you should make for the system (i.e. front end, back end, access points.)

### November 12 – VAP Framework – Implementation I

- Translation
- Readings:
  - *Values at Play*, chapter 5,6
  - Berlin, *The Crooked Timber of Humanity*, Chapter 1, *The Pursuit of an Ideal*

### November 12

- Readings:
  - Harris, T. *How Technology Hijacks People's Minds*
  - <https://www.darkpatterns.org/>
  - [\(Links to an external site.\)](#)
  -
- Questions:
  - Winners and losers of the practices that Harris describes
  - How would you characterize values that are being undermined by some or all of these practices
  - These practices are now commonly called "dark practices." What "dark patterns" have you observed in products, systems, apps, website, features, etc. that seem to warrant this label?
  - How might you modify any aspect of the design to avoid this label? A couple examples would be great.

### November 19 -- VAP Framework: Implementation II

- Resolving Conflict
- Readings:
  - *Values at Play*, chapter 6
  - Berlin, *The Crooked Timber of Humanity*, Chapter 1, *The Pursuit of an Ideal*

### November 19 - Group work

Select an object (app, mechanism, device) as the focus for your analysis. It can be a case or similar to a case that we discussed in class.

- Think of how different values may have inspired the design of your object of focus and how you see it having been resolved.
- How might you imagine modifying the object so that it alters the conflict resolution to favor a different value.

### November 26 Thanksgiving break

### December 3 -- VAP Framework: Verification

- Behavior, comprehension, attitude
- Methods
- Readings:
  - *Values at Play*, chapter 7

### December 3 -- Work on Final Project

### Bibliography

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- Howe, D. & H. Nissenbaum, "TrackMeNot: Resisting Surveillance in Web Search," In: *On the Identity Trail: Privacy, Anonymity and Identity in a Networked Society*. Eds. Ian Kerr, Carole Lucock and Valerie Steeves. Oxford University Press, 2009
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- Shilton, K. "Engaging Values Despite Neutrality," STHV, Vol 43(2) 247-269, 2018
- Weber, R. "Manufacturing Gender in Military Cockpit Design." *The Social Shaping of Technology*. Eds. MacKenzie, D. & J. Wajcman. Milton Keynes: Open Univ. Press, 1985.
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