

TECH 5010: Values at Play in Digital Technologies
Cornell Tech - TECH 5010-- Studio Elective
Credits: 1 hour
Spring 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 recognized 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

Classes will comprise a variety of activities including instructor presentation, classroom discussion of readings, small group work analyzing cases, and student presentations. Instructor and group discussions will focus on concepts and arguments in weekly reading assignments. Small groups will apply this learning to cases.

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:

Participation: In-class and online	40%
Group Project design mod inspired by values	30%
Individual Project Write-up ~1500 words	30%

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

SCHEDULE

January 21 – Introduction to the course

January 28 – The idea of Values in Design

- Ethics and politics in technology
- The Practical Turn
- Being a conscientious designer
- Readings:
 - *Values at Play*, chapter 1
 - Postman, N. Five Things We Need to Know About Technological Change
 - Winner, L. "Do Artifacts Have Politics?" *The Whale and the Reactor*. Chicago: The University of Chicago Press, 1986, 19-39

February 4 – VAP Framework: Discovery

- Sources of Values
- Operational definition
- What values; whose values?
- Readings:
 - *Values at Play*, chapter 4,5
 - Friedman & Nissenbaum, Bias in Computer Systems
 - Berlin, The Crooked Timber of Humanity, Chapter 1, The Pursuit of an Ideal

February 11 – VAP Framework: Discovery

- Practical exercises
- Readings:
 - Harris, T. How Technology Hijacks People's Minds
 - <https://www.darkpatterns.org/>
 - [\(Links to an external site.\)](#)
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February 18 – VAP Framework – Implementation

- Translation
- Resolving Conflict
- Readings:
 - *Values at Play*, chapter 5,6
 - Berlin, The Crooked Timber of Humanity, Chapter 1, The Pursuit of an Ideal
 - (Recommended) Katie Shilton, Engaging Values Despite Neutrality

February 25 – Spring Break

March 3 – VAP Framework: Implementation

- Practical exercise and discussion
- Handoff
- Readings:
 - Manders-Huits, N.& M. Zimmer, Values and Pragmatic Action
 - *Values at Play*, chapter 6

March 10 -- VAP Framework: Verification

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

March 17 – Poster Session

Bibliography

- Berlin, I. "The Crooked Timber of Humanity." (1991) *The Crooked Timber of Humanity: Chapters in the History of Ideas*. Ed. H. Hardy. New York: Knopf, 1-19.
- Flanagan, M. & H. Nissenbaum, *Values at Play in Digital Games*, Cambridge: MIT Press, 2014.
- Friedman, B. & Nissenbaum, H. "Bias in Computer Systems." *ACM Transactions on Information Systems* 14:3 (1996): 330-347
- Harris T. "How Technology Hijacks People's Minds – from a Magician and Google Design Ethicist." (2016). *com*.
- 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
- Manders-Huits, N. & M. Zimmer, "Values and Pragmatic Action," IRIE (preprint)
- Postman, N. "Five Things We Need to Know About Technological Change."
- 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.
- Winner, L. "Do Artifacts Have Politics?" *The Whale and the Reactor*. Chicago: The University of Chicago Press, 1986, 19-