

THINK 66 | *Design that Understands Us*

Stanford University
Winter Quarter 2019-2020

Course website:
<https://artful.design/think66/>

Faculty

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Course Description

What we make, in turn, makes us. We find ourselves in an age of rapidly evolving technology, where the world we inhabit, increasingly, is the world we make. This course examines the nature, purpose, and meaning of *design* in human life, and asks the fundamental questions of what design is, why do we do it, and how the fashioning of technology can speak to who we are as humans. We will explore design as an act that both embraces and confronts technology, not purely as means to yet another end, but also in its potential for humanistic meaning and understanding. It asks whether it is sufficient to design to meet practical needs (as we are often taught), and proposes instead a process of design rooted in the human values underlying our shared needs. You will learn about various aesthetic frameworks and a fundamental language of design, so that you can begin to critically analyze everyday examples of media, tools, toys, and games—and apply such lenses to designing conscientiously. You will learn to think about the design of social networks, artificial intelligence, instruments, games, and virtual reality—in terms of needs and values, ethics and aesthetics. This course is a meditation on design as the art of shaping technology—not only what it does for us, but also what it does *to* us.

Course-specific Goals

In this course, we will address the following questions:

- What is the nature of design—and the meaning it holds in human life?
- What does it mean to design *well*?
- What does it mean to design *ethically*?
- Why do we design beauty into useful things?
- How does (and should) the shaping of technology reflect *human values*?

As a student, you will:

- Develop a *language* for thinking about design in the context of everyday life.
- Investigate the *ethics* of design, from perspectives of both the designer and user.
- Understand ways in which design affect us beyond its established functionality, and explore the *aesthetic dimension* of design, from the sensorial, the emotional, the social, to design's implications on our ways of life.
- Put theory into practice in creative “design etudes” throughout the course.
- Critically engage with design as an *art* of shaping technology, and to develop frameworks for thinking about its implications on the individual and society.

Ways of Thinking / Ways of Doing Breadth Requirement

This Thinking Matters course satisfies the following WAYS requirement:

- Aesthetics and Interpretive Inquiry (AII)
- Creative Expressive (CE)

Required Materials (available in the Stanford bookstore)

- Aristotle, *Nicomachean Ethics*, 350 B.C.E.
- Don Norman, *The Design of Everyday Things*. 1988.
- Sidney Padua, *The Thrilling Adventures of Lovelace and Babbage*. 2015.
- Ge Wang, *Artful Design: Technology in Search of the Sublime*. 2018.

Additional Readings (optional)

- Mary Shelly, *Frankenstein*. 1818.
- Kurt Vonnegut, *Player Piano*. 1952.

Workload Expectations

Students are expected to devote at least two hours of preparation out of class for each 50 minutes of class time, both for lectures and sections, for a minimum of eight hours of preparation per week.

Grading Expectations

Your work will be evaluated on completion, thoughtfulness, effort—in short, the integrity with which you carry out your work. Grades will be assigned based on the following:

- Design Etudes (20%)
- Weekly written responses to readings (20%)
- Mid-term Project (15%)
- Final project (25%)
- Attendance of and active participation in lectures and sections (20%)

Thinking Matters lectures are mandatory

Attendance at lectures and sections is mandatory. If a student has a prolonged illness, varsity athletic competitions, or a personal situation that might lead to more than two section absences, the student should contact their TF before missing section. Under certain conditions (such as varsity athletic competitions or prolonged illness), a student may be provided an opportunity to make up the work missed in section. In other words, make-up work is at the discretion of the Teaching Fellow. Note: Insufficient attendance to lecture or section will also result in failure of the course.

Course Policies

1. Late & missed assignments. No late work will be accepted under any circumstances (except by prior consent of the instructors, or in case of a health or family emergency). Failure to complete any one graded assignment will result in a failing grade for the quarter. No incompletes will be given except under extreme circumstances.
2. Organization. Each assignment has specific, mandatory submission instructions (file name, type, etc.). All documents must also have a proper heading (name, TF, section time, date, assignment). Assignments that do not adhere will be penalized 10%.
3. Preparation. Materials should be prepared no later than the assigned date (i.e., before lecture).
4. Punctuality. Class starts and ends on time. Tardiness is a distraction to the class and to instructors, so please be punctual. If you must come late or leave early, please be discrete. Habitually arriving late or leaving early will count against your grade just like an absence. Talk to your TF about genuine schedule conflicts.
5. No-screens policy. This is a laptop and device-free classroom, so please bring a notebook and pen to take notes. Enjoy being fully present to engage in discussion, and to hear one another, the lecturers, and the sounds we'll encounter together. Exceptions are only made with prior consent of the instructor.

Assignments and Evaluation

Evaluation of student work is tied to achievement of standards articulated for each of the four dimensions of the assignment:

- Questions developing from a critical engagement with course material and lecture:
 - significant, answerable, penetrating
- Claim and argument:
 - analytical, logical, complex, original
- Evidence in support of claim or argument:
 - relevant, accurate, sufficient, persuasive, thorough
- Communication and presentation:
 - coherent, precise, convincing, easy-to-follow, engaging

The Honor Code

Violating the Honor Code is a serious offense, even when the violation is unintentional. The Honor Code is available at the URL below. Students are responsible for understanding the University rules regarding academic integrity. In brief, conduct prohibited by the Honor Code includes all forms of academic dishonesty, among them copying from another's exam, unpermitted collaboration and representing as one's own work the work of another. If students have any questions about these matters, they should contact their fellow. <http://studentaffairs.stanford.edu/communitystandards/honorcode>

Section Participation

Thinking Matters courses encourage vigorous intellectual exchange, the expression of various viewpoints, and the ability to speak effectively and cogently. Participation includes but is not limited to in-class discussion. As part of the participation grade, fellows may assign activities and written assignments such as individual or group presentations, on-line forum entries, reading responses, lecture summaries, problem sets, debates, etc. Participation will be evaluated on the following guidelines, which stress the quality rather than the quantity of contributions.

A range:

The student is fully engaged and highly motivated. This student is well prepared, having studied the assigned material, and having thought carefully about the materials' relation to issues raised in lecture and section. This student's ideas and questions are substantive (either constructive or critical); they stimulate class discussions. This student listens and responds respectfully to the contributions of other students.

B range:

The student participates consistently in discussion. This student comes to section well-prepared and contributes regularly by sharing thoughts and questions that show insight and a familiarity with the material. This student refers to the materials discussed in lecture and shows interest in other students' contributions.

C range:

The student meets the basic requirements of section participation. This student is usually prepared and participates once in a while but not regularly. This student's contributions relate to the texts and the lectures and offer a few insightful ideas but do not help to build a coherent and productive discussion.

Failure to fulfill satisfactorily the criteria for participation will result in a grade of "D" or below.

FERPA: Student Record Privacy Policy

<http://studentaffairs.stanford.edu/registrar/students/ferpa>

Students with Documented Disabilities

Students who may need an academic accommodation based on the impact of a disability must initiate the request with the Office of Accessible Education (OAE). Professional staff will evaluate the request with required documentation, recommend reasonable accommodations, and prepare an Accommodation Letter for faculty dated in the current quarter in which the request is being made. Students should contact the OAE as soon as possible since timely notice is needed to coordinate accommodations. The OAE is located at 563 Salvatierra Walk (phone: 723-1066, URL: <http://oae.stanford.edu>).

Design that Understands Us | **Course Schedule** (subject to adjustment)

Unit 1 (weeks 1 + 2) — The Nature of Design

- What *is* design? What does it mean to design?
- Dualities of Design: form and function, pragmatics and aesthetics, means and ends
- Design versus/as art, technology, human needs and values; affordances and signifiers

Learning objectives: hone the ability to critically analyze works of design, distilling them into elements of pragmatics, aesthetics, function, form, means, and ends; to begin thinking critically with the language of design.

Week 1

“What is the nature of design?”

Case study: The Design of a Strange Pencil Case

Case study: The Design of Ocarina: the iPhone’s Magic Flute

Readings

Th 1/9: *Artful Design*, Prelude + Chapter 1: “Design Is _____”

Th 1/9: *Artful Design*, Chapter 2: “Designing Expressive Toys with Technology”

Week 2

“What motivates design?”

Case study: The Design of the Toilet

Case study: The Smartphone

Case study: The Design of the U.S. Constitution

Readings

T 1/14: *Nicomachean Ethics*, Introduction & Book I (pp. xiii-18)

Etude 1 Due Submit to Canvas Monday Night

Th 1/16: *The Design of Everyday Things*, Chapter 1: “The Psychopathology of Everyday Things”

Artful Design, Chapter 3: “Visual Design”

Unit 2 (weeks 3 + 4) — The Virtue of Design

- "What does it mean to design well?"
- Mediums and messages; designing “inside-out” from technology
- Software as technology; the computer as medium
- Virtue as functional excellence; "applying" Aristotle

Learning objectives: learn to think and work critically with the notion of medium, and how mediums shape the message, and the ways in which they are inseparable; gaining a language for evaluating the aspect of quality in a design. “What does it mean to design well?”

Week 3

“What is nature of programmability as a technology? Is music ‘designed’?”

Case study: The Design of ChucK: A Music Programming Language

Case study: The Design of the THX Deep Note

Case study: The Design of Music (From Bach and Ariana Grande)

Readings

T 1/21: *Artful Design*, Chapter 4: “Programmability + Sound Design”

Audacity Workshop: Shriram Center 104, 6-7:30pm (Optional but strongly recommended)

Th 1/23: *Nicomachean Ethics*, Book 2

Tutorial #1: This week and early next, bring rough draft of sound logo to tutorial, sign up on Canvas

Week 4

“What are critical considerations in military, civil, and political designs?”

Case study: The Design of Warfare (The war chariot of ancient Rome and China)

Case study: The Design of Walls (China, Hadrian, America)

Case study: The Design of a City (A Retroactive Manifesto of New York City)

Readings:

T 1/28: *Design of Everyday Things*, Chapter 2: “The Psychology of Everyday Actions”

Th 1/30: *Artful Design*, Chapter 5: “Interface Design” + Interlude

Unit 3 (weeks 5 + 6) — Social Design

- What are the values of social tools, and in what ways do they shape society?
- In what ways does the medium shape the message (and society at large)?
- How do we think about consequences (intended or unintended) of social media?

Learning objectives: Gain critical lenses to analyze the design of social tools, networks, and products; hone the ability to pose critical questions about the underlying motivations that drive decision in social design, including commercial imperatives.

Week 5

“What is ‘Play’—and its role in design?”

Case study: The Design of Musical Instruments

Case study: The Design of Video Games

Readings:

T 2/4: *Lovelace and Babbage*, part 1

Th 2/6: *Artful Design*, Chapter 6: “Game Design”

Week 6

“What are the values of (social) tools, and in what ways do they shape society?”

Case study: The Design of Media (Printing Press, Radio, TV, Internet)

Case study: The Design of Social Networks (Facebook, Twitter, TikTok—oh my!)

Case study and guest lecture: Yahoo! and the Early Days of the Internet (1990s)

Readings:

T 2/11: *Artful Design*, Chapter 7: “Social Design”

Th 2/13: TBA

Unit 4 (weeks 7 + 8) — Social Design

- What does it mean for design to be "ethical"?
- What are the differences between need- vs. value-based design; can the two be combined?
- “Do no evil” vs. “Do good” vs. "Tool Building"
- What critical questions does Frankenstein pose for our time?
- What do we (really) want from artificial intelligence?

Learning objectives: Gain critical tools to consider the intentional shaping of technology, its role in our world, its effect on society and on the individual. Understanding the distinction of design from needs vs. underlying human values.

Week 7

“What are our moral obligations to our creations?”

“What do we (really) want from artificial intelligence?”

Case study: Word embedding in Word2Vec: promises and perils

Case study: Speculations of Strong AI

Case study: Human-in-the-loop AI system design

Readings:

T 2/18: *Lovelace and Babbage*, part 2

Th 2/20: “Humans in the Loop, The Design of Interactive AI Systems”

<https://medium.com/artful-design/humans-in-the-loop-b83e3bffa65e>

Week 8

“Why do we design? What is the balance between various imperatives?”

Case study: A Comparative Reflection on Tools and Design as Tool-making

Case study: Engineers in the World...

Readings:

T 2/25: *Artful Design*, Chapter 8, “Manifesto” Coda

Th: 2/27 *Artful Design*, Coda

Unit 5 (weeks 9 + 10) — Design as Self-Fashioning

- What does it mean for design to be artful? — and ethical?
- How do we want to live with our technologies? (How do we want to live?)
- Human- vs. Humanity-centered Design; the Platinum Rule
- Why *do* we design?

Learning objectives: to think critically about design as a human endeavor, as it relates to art, engineering, and contexts such as everyday life and society; learn to critically discern the difference

between problems/solutions and processes/meaning; By this point, one should have a fuller language to think with, and the awareness to ever further refine these lenses beyond the course.

Week 9

“How ought we fashion ourselves? In what ways is life ‘designable’ and not?”

Case study: *Your* Stanford education (“why are you here?”)

Case study: Cooking, Ping Pong, Folk Art and Design

Reading:

T 3/3: *Nicomachean Ethics*, Book X: “Pleasure”

Week 10

“In synthesis, what are our lenses to look at design? What is the relationship of utility, aesthetics and ethics in design? Are we ‘designed’?”

Case study: The Design of Human Society (to what extent is it possible?)

Case study: In Search of the Sublime (the Artistic, the Rhetorical, the Moral, the Everyday)

Case study: On asking questions without clear-cut answers

Reading:

T 3/10: “Twilight” by John W. Campbell (short story)

Wednesday 3/11 10:30am: Final Project Posters

Monday 3/16 11:59 pm: Final Project Justification due on Canvas