

## *Design that Understands Us*

### **THINK 66**

Stanford University  
Winter Quarter 2018-2019  
T/Th 10:30-11:20am

#### **Course website:**

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

#### **Faculty**

Ge Wang

Associate Professor

Center for Computer Research in Music and Acoustics (CCRMA)

Department of Music (also Computer Science, by Courtesy)

Office: Knoll 212 | Office Hours: by appt.

[ge@ccrma.stanford.edu](mailto:ge@ccrma.stanford.edu)

#### **Teaching Fellows**

Dr. Justin Clardy

[clardyj@stanford.edu](mailto:clardyj@stanford.edu)

Office: Sweet Hall 218C

Office hours: by appt.

Dr. Emily O'Rourke

[eorourk@stanford.edu](mailto:eorourk@stanford.edu)

Office: Sweet Hall 218C

Office hours: by appt.

Dr. Sean Hallowell

[hallowell@stanford.edu](mailto:hallowell@stanford.edu)

Office: Sweet Hall 217B

Office hours: by appt.

#### **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 the ways in which the shaping of technology can speak to who we are as humans. It explores design as something that both embraces and confronts technology, not purely as means to yet another end, but also in its potential for humanistic meaning, understanding, and poignancy. It asks whether it is sufficient to design from practical needs (as we are often taught), rather than from the values underlying our needs. You will learn about different aesthetic frameworks and the fundamental language of design so that you can begin analyzing everyday examples in media, art, games, and tools. You will learn ways to think critically about the design of social networks, artificial intelligence, machine learning, robots, virtual reality—in terms of needs and values, usefulness and aesthetics. Design That Understands Us is a meditation on technology, art, society, and on design—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*, to imbue truth into technology?
- Why do/should we design beauty into useful things?
- How can (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 *craft* 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 dimensions* 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.
- Mary Shelley, *Frankenstein: Or, The Modern Prometheus*. 1818.
- Bruno Munari, *Design as Art*. 1966.
- Don Norman, *The Design of Everyday Things*. 1988.
- Ge Wang, [\*Artful Design: Technology in Search of the Sublime\*](#). 2018.

## 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 (10%)
- Mid-term *Frankenstein* project (20%)
- Final project (25%)
- Attendance of and active participation in lectures and sections (25%)

## **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.

## **FERPA: Student Record Privacy Policy**

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

## **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>.

## **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

## **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.

## **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)

### **Module 1 (weeks 1 & 2): The Nature of Design**

What is design? What does it mean to design?

Form and function; pragmatics and aesthetics; means and ends

design versus/as art, technology, human needs; affordances and signifiers

Case study: design of a strange pencil bag

Case study: *Ocarina* (a musical toy and artifact for the iPhone)

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

### **Week 1 - Jan 8 & Jan 10**

*Readings:*

- *Artful Design*, Prelude + Chapter 1: “Design Is \_\_\_\_\_”
- *Design as Art*, “Design as Art” & “Designers & Stylists” (pp.25-51)

### ***Design Etude #1 - DUE END OF WEEK 1***

The first assignment (i.e., “design etude”) asks students to perform functional-aesthetic analyses of three things in their everyday life and also asks students to perform and document a “guerilla design” exercise.

### **Week 2 - Jan 15 & 17**

*Readings:*

- *Artful Design*, Chapter 2: “Designing Expressive Toys with Technology”
- *The Design of Everyday Things*, Chapter 1: “The Psychopathology of Everyday Things”

\*\*\* **TUTORIAL #1 - Introduction to the course, to take place in Weeks 1 & 2** \*\*\*

\*\*\* **TUTORIAL #2 - Digital audio/ChucK workshops to take place during Week 2** \*\*\*

### **Module 2 (weeks 3 & 4): The Craft of Design**

What does it mean to design well? virtuous design

Mediums and Messages; Designing “inside-out” from technology

The art of programming; the computer as medium

Case study: ChucK (a computer music programming language)

Case study: Audiovisual design

*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.

### **Week 3 - Jan 22 & 24**

#### *Readings:*

- *Artful Design*, Chapter 4: “Programmability and Sound Design”
- *Nicomachean Ethics*, Introduction & Book I (pp. xiii-18)

#### ***Design Etude #2 - DUE END OF WEEK 3***

The second design etude asks students to design a sound logo and prototype in a music programming language and/or digital audio workstation.

### **Week 4 - Jan 29 & 31**

#### *Readings:*

- *Artful Design*, Chapter 3 “Visual Design”
- *Design as Art*, “Visual Design” (pp. 52-82)

### ***Module 3 (weeks 5 & 6): The Ethics of Design***

Human imperatives; laws of technology

“Do no evil” vs. “Do good”

*Frankenstein* in our time

Need- vs. value-based design

*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 5 - Feb 5 & Feb 7**

#### *Readings:*

- *Artful Design*, Chapter 8: “Manifesto”
- (*Frankenstein* should be read by week 5)

#### ***Part I of Frankenstein Project - DUE BEGINNING OF WEEK 5***

### **Week 6 - Feb 12 & Feb 14**

#### *Readings:*

- *Artful Design*, Chapter 7: “Social Design”
- *Nicomachean Ethics*, Books VIII + IX: “On Friendship”

\*\*\* ***SPECIAL GUEST LECTURE: Srinija Srinivasan*** \*\*\*

\*\*\* ***TUTORIAL #3 - Revising Assignment #1, Part I, to take place in Week 6*** \*\*\*

### ***Module 4 (weeks 7 & 8): The Experience of Design***

Interaction Design

Game design

Industrial Design

Social design; values of a social tool

*Learning objectives:* examining design as experience with human intention and interaction; a critical search to articulate worthwhile design and engineering that aren't problems to be solved (e.g., art, play, experiences)

## **Week 7 - Feb 19 & Feb 21**

*Readings:*

- *Artful Design*, Chapter 5: "Interface Design" + Interlude
- *Design as Art*, "Industrial Design" (pp. 100-155)

***Project on Frankenstein (including webpage) - DUE BEGINNING OF WEEK 7***  
***\*\*\* IN-CLASS LECTURE + SECTION DESIGN EXERCISE \*\*\****

## **Week 8 - Feb 26 & Feb 28**

*Readings:*

- *Artful Design*, Chapter 6: "Game Design"
- *The Design of Everyday Things*, Chapter 2:v 34 "The Psychology of Everyday Actions"

***Final Project (Milestone 1) - DUE BEGINNING OF WEEK 8***

## ***Module 5 (weeks 9 & 10): The Future of Design***

Complex human systems (in search of answers)

Human- vs. Humanity-centered Design

AI, robots, genetics, VR

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/experiences; 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 - Mar 5 & Mar 7**

*Reading:*

- "Twilight" by John W. Campbell (short story)
- *The Design of Everyday Things*, Chapter 7: "Design in the World of Business"

***Final Project (Milestone 2) - DUE BEGINNING OF WEEK 9***  
***\*\*\* TUTORIAL #4 - Workshopping final projects, to take place in Week 9 \*\*\****

## **Week 10 - Mar 12 & Mar 14**

- *Artful Design*, Coda
- *Nicomachean Ethics*, Book X: "Pleasure"

***Final Project (Completion, including webpage) - DUE WEEK 10***