

KAIST Spring 2025

# CS374: Intro to HCI

[hci.cstlab.org](http://hci.cstlab.org)

## **Class 02: Design Thinking: 60-min Workshop**

2023.02.27

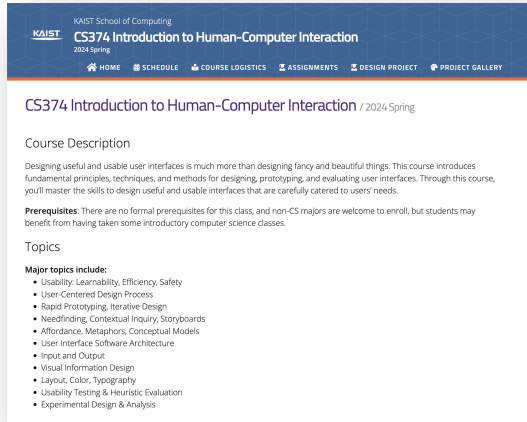
Joseph Seering

# ADMINISTRATIVE NOTES

- By MONDAY
  - Course sign-up! This is a mandatory form IN ADDITION TO portal registration to be officially enrolled in the course.
- 3/5 (Tue)
  - Pre-class reading: Needfinding

# COURSE INFRASTRUCTURE

- Website: calendar, assignments, readings
- Campuswire: announcements, discussion, examples, Q&A
- Google Docs: reading materials



KAIST School of Computing  
CS374 Introduction to Human-Computer Interaction  
2024 Spring

HOME SCHEDULE COURSE LOGISTICS ASSIGNMENTS DESIGN PROJECT PROJECT GALLERY

## CS374 Introduction to Human-Computer Interaction / 2024 Spring

### Course Description

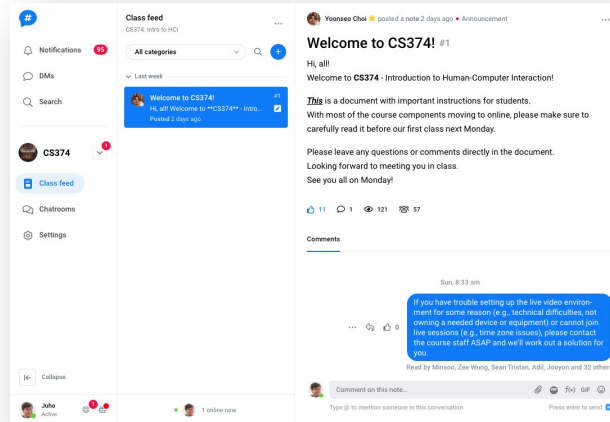
Designing useful and usable user interfaces is much more than designing fancy and beautiful things. This course introduces fundamental principles, techniques, and methods for designing, prototyping, and evaluating user interfaces. Through this course, you'll master the skills to design useful and usable interfaces that are carefully catered to users' needs.

**Prerequisites:** There are no formal prerequisites for this class, and non-CS majors are welcome to enroll, but students may benefit from having taken some introductory computer science classes.

### Topics

**Major topics include:**

- Usability: Learnability, Efficiency, Safety
- User-Centered Design Process
- Rapid Prototyping, Iterative Design
- Needfinding, Contextual Inquiry, Storyboards
- Affordance, Metaphors, Conceptual Models
- User Interface Software Architecture
- Input and Output
- Visual Information Design
- Layout, Color, Typography
- Usability Testing & Heuristic Evaluation
- Experimental Design & Analysis



**Class feed**  
CS374: Intro to HCI

All categories

Last week

Welcome to CS374  
Hi, all Welcome to "CS374" - https://...  
Posted 2 days ago

Yoonseo Choi posted a note 2 days ago • Announcement

### Welcome to CS374! #1

Hi, all!  
Welcome to CS374 - Introduction to Human-Computer Interaction!

This is a document with important instructions for students. With most of the course components moving to online, please make sure to carefully read it before our first class next Monday.

Please leave any questions or comments directly in the document. Looking forward to meeting you in class. See you all on Monday!

11 1 121 57

Comments

Sun, 9:33 am

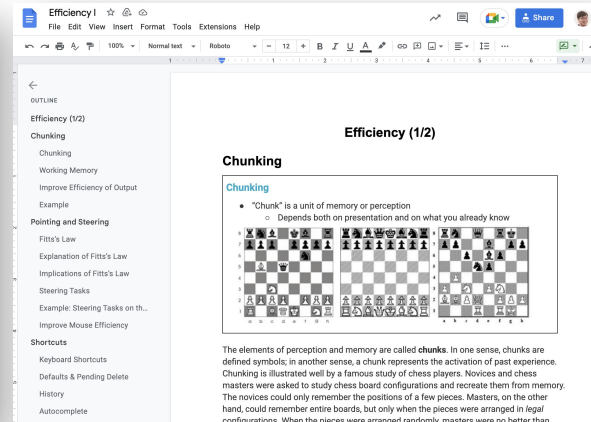
If you have trouble setting up the live video environment for some reason (e.g., technical difficulties, not owning a needed device or equipment) or cannot join live sessions (e.g., time zone issues), please contact the course staff ASAP and we'll work out a solution for you.

Read by Minsoo, Zee Wang, Sean Tristen, Adil, Jayson and 32 others

Comment on this note.

Type @ to mention someone in this conversation

Please enter to send



Efficiency! ☆ ⌵ ⌵ ⌵

File Edit View Insert Format Tools Extensions Help

100% Normal text Rubato 12 B U L A O P S T W X Y Z [ ] { } ~

## Efficiency (1/2)

### Chunking

- "Chunk" is a unit of memory or perception
  - Depends both on presentation and on what you already know

Painting and Steering

Fitts's Law

Explanation of Fitts's Law

Implications of Fitts's Law

Steering Tasks

Example: Steering Tasks on th...

Improve Mouse Efficiency

Shortcuts

- Keyboard Shortcuts
- Defaults & Pending Delete
- History
- Autocomplete

The elements of perception and memory are called **chunks**. In one sense, chunks are defined symbols; in another sense, a chunk represents the activation of past experience. Chunking is illustrated well by a famous study of chess players. Novices and chess masters were asked to study chess board configurations and recreate them from memory. The novices could only remember the positions of a few pieces. Masters, on the other hand, could remember entire boards, but only when the pieces were arranged in legal configurations. When the pieces were arranged randomly, masters were no better than

# PRE-CLASS READING

- Each reading link will be posted on the course website.
- Annotate & Discuss: Share examples, disagree with the notes, ask questions, find typos, etc.
- Use your real name.
  - We track your participation.

# USUAL CLASS STRUCTURE

- Before class: Read, watch pre-class material
- 5 min: Nanoquiz
- 30 min: Activity & Discussion 1
- 5 min: Video break
- 30 min: Activity & Discussion 2
- After class: Campuswire discussion

# TODAY'S CLASS

- ~~• Before class:~~ ~~Read, watch pre-class material~~
- ~~• 5 min:~~ ~~Nanoquiz~~
- 60 min: Activity & Discussion 1
- ~~• 5 min:~~ ~~Video break~~
- ~~• 25 min:~~ ~~Activity & Discussion 2~~
- After class: Campuswire discussion

# PRACTICE NANOQUIZ

- Simple questions about the pre-class material
- 3 minutes
- Open book, open notes, but they won't help much.
- Send DM to course staff if you can't access the form.
- Form closes 10 secs after the quiz is over.
- Resubmission is allowed, we count the last submission.
- Enter email for confirmation receipt.

# Practice Nanoquiz

For each of the following user interfaces, which are the most important usability dimensions ? (choose all good answers)

1. A job application kiosk installed at a small homeless shelter  
☒ A. learnability ☐ B. efficiency ☐ C. safety D. reliability
2. The interface that department staff uses to enter course grades  
☐ A. learnability ☒ B. efficiency ☒ C. safety D. reliability
3. The configuration interface for a printer driver  
☒ A. learnability ☐ B. efficiency ☐ C. safety D. reliability
4. I can make the studio session on Wednesdays at... (mark multiple if possible, only mark hard constraints like a regular course, not your preference)  
A. 5:30-6:30pm      B. 7-8pm (default)      C. neither



# PRACTICE NANOQUIZ

- Simple questions about the pre-class material
- 3 minutes
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- Form closes 10 secs after the quiz is over.
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- Enter email for confirmation receipt.

[yellkey.com/keep](https://yellkey.com/keep)

# Practice Nanoquiz

1. What is the course number for Intro to HCI?

(choose one best answer)

A. CS373   B. CS374   C. CS375   D. CS376

2. Who is part of this course's staff? (choose all good answers)

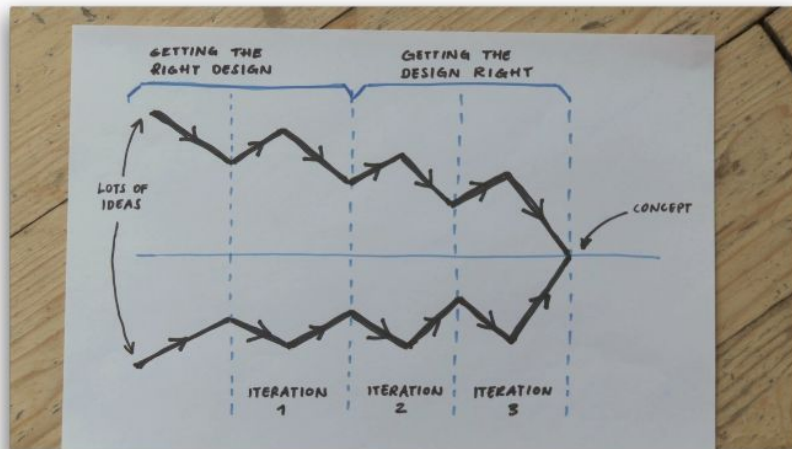
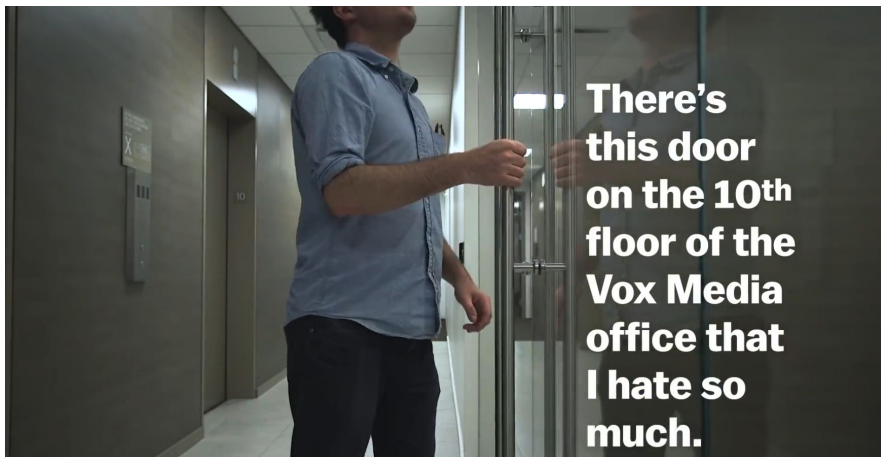
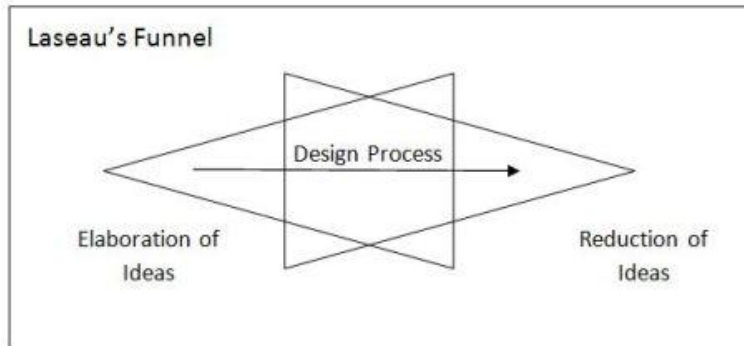
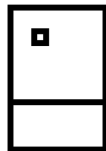
A. Joseph Seering   B. Mike Krieger  
C. Yoonseo Choi   D. Larry Page

3. What is the name for a poorly designed door that doesn't give you any information about whether to push or pull? (choose one best answer)

A. Simon door   B. Ackerman door   C. Norman door

# PREVIOUSLY ON CS374

useful  
usable

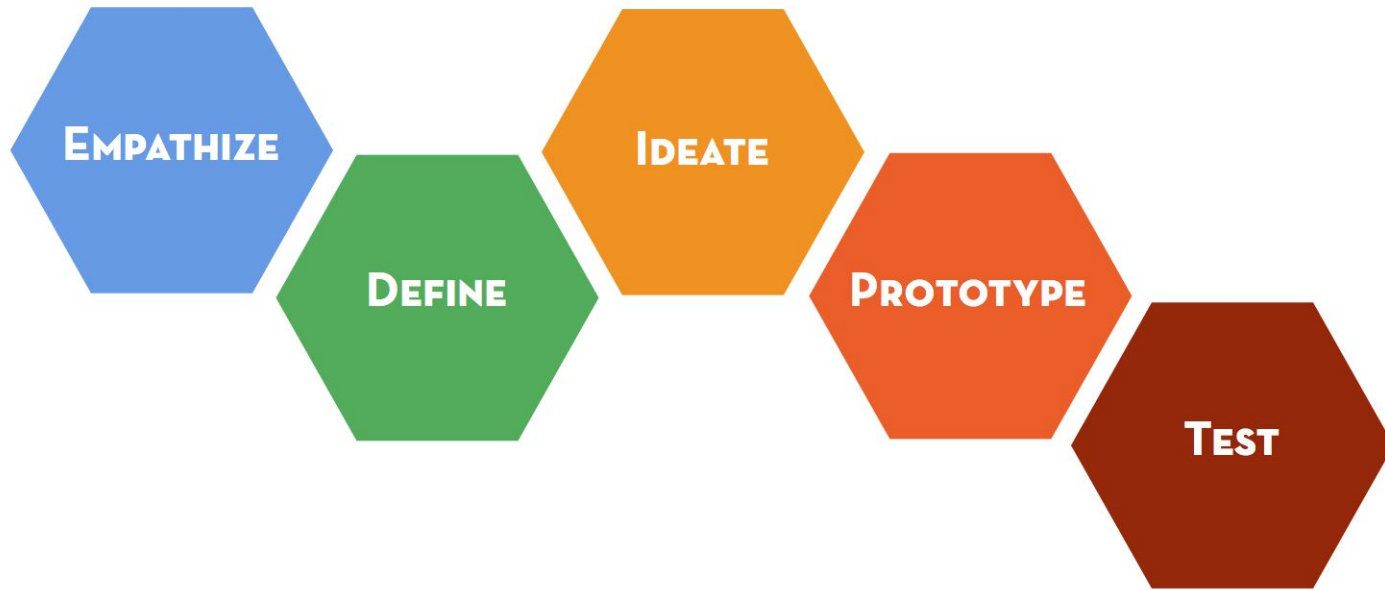


# LEARNING OBJECTIVE

*"You'll master the skills to design useful and usable interfaces that are carefully catered to users' needs."*

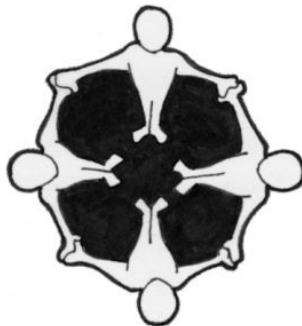
# 60-MIN DESIGN THINKING WORKSHOP

- Entire semester into an hour!
- Rapid run-through of the entire design process
- Will feel rushed & interrupted, but it's okay
- Trust the process
  
- Credit: Stanford d.school





**bias toward action**



**collaborate across boundaries**



**focus on human values**



**be mindful of process**



**prototype toward a solution**



**show don't tell**

# THE TASK

Redesign your partner's  
gift-giving experience



# STEPS

1. A interviews B, B interviews A
2. A re-interviews B, B re-interviews A
3. (Each) Synthesize your findings
4. (Each) Write a POV
5. (Each) Sketch 5 solutions
6. B gives A feedback, A gives B feedback
7. (Each) Revise your sketch, build a "Prototype"
8. B gives A feedback, A gives B feedback

# OUTCOME

- Filled out worksheet, including insights and a “prototype”

NOTE: It's okay to do in-class activities like this one in English OR Korean.

# EMPATHIZE

1.

A interviews B

# EMPATHIZE

1.

B interviews A

# EMPATHIZE

2.

A interviews B  
again

# EMPATHIZE

2.

B interviews A  
again

# EMPATHIZE

3.

Synthesize  
needs & insights

# DEFINE

4.

Write your POV



# IDEATE

5.

Sketch 5 solutions

# TEST

6.

B gives A feedback on  
sketches

# TEST

6.

A gives B feedback on  
sketches

# ITERATE & PROTOTYPE

7.& 8.

Revise your sketch  
& Build your solution

**TEST**

9.

B gives A feedback on  
prototype

# TEST

9.

A gives B feedback on  
prototype

# WRAP-UP

- If you couldn't complete every step, please finish by at least including the following on your slides:
  - Your prototype sketch
  - Your problem statement
  - One line solution description
- Discussion on Campuswire is welcome!