CS 147 Introduction & Course Overview

Design Thinking for User Experience Design, Prototyping & Evaluation

Prof. James A. Landay
Computer Science Department
Stanford University

Winter 2022
January 3, 2022
Hall of Fame or Shame?

Here Are 3 Things We’re Watching This Week

- CDC Has New Info About Asymptomatic Spread of COVID-19
- Dwarf Giraffes May Be First Ever Documented
- Astronomical Triple Play: When to Watch
- U.S. Rocked by 2 Billion-Dollar Disasters Last Year

Winter Storm Sliding Across The South Dumps Snow in Texas
How to Keep Colds & the Flu Out of Your Home

MODEL HOMES NOW OPEN BLACKPINE

SCHEDULE A PRIVATE TOUR

weather.com
Hall of Shame!

weather.com
Need to click for weather
What is the “first read”? videos ads
not my local weather!
It used to be worse!
Hall of Fame or Shame?

weather.yahoo.com
weather.yahoo.com

Good!
- aesthetic
- clean typography & icons

Bad!
- image is 1st read & ad 2nd?
- too much empty space!
Hall of Fame or Shame?
Hall of Fame!

bing.com/weather

Good!
less clutter
eye drawn to current temp

Bad?
maybe a little boring…
iOS yahoo weather

Good!

aesthetic

clean typography & icons

(image recedes to background w/ flick or tap)
CS 147 Introduction & Course Overview

*Design Thinking for User Experience Design, Prototyping & Evaluation*

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Winter 2022

January 3, 2022
Who are We?
James Landay
he/him

- Professor in Computer Science at Stanford
  - formerly at Cornell Tech (1 year), University of Washington (12 years), & UC Berkeley (7 years)
  - spent 3 years as Director of Intel Labs Seattle
- PhD in CS from Carnegie Mellon ’96
- HCI w/ focus on ubiquitous computing, web design (tools, patterns, etc.), HAI
- Founded NetRaker, 1st in web experience management (sold to Keynote)
- Co-authored The Design of Sites with Doug van Duyne & Jason Hong
- Office Hours: Wed 3:30-4 PM, Fri 4-4:30 PM,
  schedule slots via https://calendly.com/landay/landay-office-hours
- Email: landay@[insert usual Stanford email domain]
Kristina Inouye
she/her

- CS Coterm (HCI, MS&E) & CS Undergrad (HCI)
- Interested in product design, manufacturing, and social impact
- I’m a 5-year varsity athlete, so I love anything related to sports!
- Office Hours: Tues 8 - 9 PM, Wed 4 - 5 PM, and by appointment
  (https://calendly.com/kinouye3/cs147-oh)
Transportation and Mobility

Technology is fundamentally reinventing the way we move from Point A to Point B. From ride-sharing to car system control applications (think Tesla) to smart navigation, mobility and transportation in the 21st century are constantly challenging and evolving our perceptions of movement. How might we continue to reinvent travel and transport as technology evolves?

Examples: Uber, Waze, Zipcar, Bird, Tesla

Studio: Thurs 7:30 - 9:30 PM (must have good reason)
Shana Hadi
she/her

- CS coterm (HCI), undergrad in CS (HCI) and English (CW)
- Interested in human-centered design + developing, storytelling
- I enjoy reading + writing fiction 📚, drinking tea 🍵, and wandering cities 🏙️! I also collect art museum postcards (150+ so far) 🎨
- Office Hours: Monday 4-5 PM, Thursday by appointment (https://calendly.com/shanaeh/shana-oh)
Art and Digital Media

Art encourages self-expression, creativity, and social change, and the rise of digital culture transforms how we share ideas and aesthetic experiences that resonate with us and our communities. Our fluid digital media ecosystem offers new forms of interaction across art forms (e.g., food, games, journalism, literature) using a variety of technologies (e.g., AI, social media, virtual reality).

*How might we (re)shape the perspectives and power of content creators, curators, and consumers, increase engagement with cultural centers, and expand our understanding of our real and imagined worlds?*

Examples: ArchiveOfOurOwn, Goodreads, Google Arts & Culture, OpenTable, Soundcloud, Twitch, Washington Post App

Studios: Friday 11 AM – 1PM, 1:30 - 3:30 PM
Emily Yang
she/her

- CS Master’s (HCI), Finance & Info Systems Undergrad from UMD
- Interested in human-centered design, improving quality of life
- I love making homemade ice cream (25+ flavors to date!)
- Office Hours: Tues 4 – 5 PM / by appointment Tues & Thurs
  (https://calendly.com/ejyang/cs-147-oh)
Caring From Within

Especially in light of the pandemic triggering a worldwide mental health crisis, users are increasingly using their devices to manage their mental wellbeing. In this studio, we will explore the intersection of technology and health to help us better manage, improve, and care for our own mental health and those around us. With the rapidly growing interest in this field and thus abundant opportunities for innovation, how might we extend help to users and empower them to care for themselves from within?

Examples: [Headspace](#), [BetterHelp](#), [Calm](#), [Happify](#), [Talkspace](#)

Studios: Friday 12:15 - 2:15 PM | 2:30 - 4:30 PM
Jianna So

she/they

- CS Coterm (HCI), Product Design Undergrad
- Interested in inclusivity, multimodal design, & social impact
- I make laser-cut earrings in the PRL & projection art! ✨
- Office Hours: Mon 12 - 1 PM, Tues & Thurs by appointment
Accessible Design for Different Abilities

Disability is a “mismatched interaction between the features of a person’s body and the features of the environment in which they live”.
- World Health Organization, 2011

In this studio, we will address this mismatch through multimodal interfaces, inclusive design thinking practices, and accessible features to create products that are better for everyone.

Studios: Friday 9:45 - 11:45 AM, 12:15 - 2:15 PM
Taylor Lallas
she/her

- CS Coterm (HCI), Econ Undergrad
- Interested in product design, economic empowerment, tech x health
- I love sports (stanford women’s tennis <3), being outdoors & baking
- Office Hours: Mon 4 – 5 PM & Thurs by appointment
  (https://calendly.com/tlallas/tl-cs147oh)
Augmented and virtual reality technologies can unlock unique, immersive learning experiences. AR/VR innovation in education technology has started to serve the needs of a range of learners from the casually curious to k-12 students to medical professionals – but it has just scratched the surface of its potential. In this studio, we will explore how we might design game-changing AR/VR educational experiences.

Studios: Friday 8:30-10:30 AM, 11:00AM-1:00PM
Morgan Zagerman
she/her

- CS Coterm (HCI), Product Design Undergrad
- Interested in human-centered design, bridging the digital and physical design space, and inclusivity
- I love bagels, hip hop dance, and A24 movies!
- Office Hours: Tues 2-3 PM & Thurs by appointment

(https://calendly.com/morganzagerman/morgan-office-hours)
Easing Life Transitions

Whether you are leaving home for the first time, becoming a new parent, starting your first job, or retiring, life transitions change the fabric of your life in an often daunting way.

How can we design solutions for people going through life transitions to increase self-fulfillment, ease fears, and encourage personal growth? How can we help people in life transitions learn the information necessary to enter a new phase of life with confidence?

Studios: Friday 9:45-11:45 AM, 1:30-3:30 PM
Yuyu Lin

she/her

- CS master’s (HCI), Industrial Design Undergrad from ZJU
- Interested in product design, human-AI collaboration, creativity
- I love watching videos about history, going to museums
- Office Hours: Tues 10 - 11 AM / Tues, Thurs - by appointment
  (https://calendly.com/linyuyu/cs147-oh)
Hybrid Collaboration

With the rising popularity of remote work, we are seeing an exponential increase in the need for hybrid collaboration (e.g., face-to-face and online, synchronous and asynchronous, etc.). Based on the requirements of our work, we select, combine, and make the best of different modes to achieve the optimal collaborative experience and group outcome. How might we improve group engagement and success by working with both tangible and digital materials? How might we bridge the gaps between different digital and physical collaboration methods? In this studio, we will explore and propose novel designs for hybrid collaboration experiences.

Studios: Friday 12:15 - 2:15 PM, 2:30 - 4:30 PM
Cat Davis
she/her

- MS&E Coterm (Tech Management), SymSys Undergrad (HCI)
- Interested in the intersection of arts, design, and social good
- I love music, singing, and songwriting!
- Office Hours: Tues 11 AM – 12 PM, Thurs - by appointment
  (https://calendly.com/cat-davis/cs147-oh)
Becoming Iron-Man

With the help of assistive technology, we can do almost anything. Want to know the scientific name and properties of any plant you see? There’s an app for that. Want to know exactly which constellations you’re looking up at? There’s an app for that, too. The aid and augmentation of human abilities are able to expand the bounds of what we can do. In this studio, we will explore how we can use technology to expand our senses, possibly even giving us new ones. If you could have any superpower, what would it be?

Examples: Plant Identification ++, SkyView, Shazam, Capo

Studios: Friday 9:45 - 11:45 AM, 2:30 - 4:30 PM
Khuyen Le
she/her

- CS Coterm (HCI), SymSys Undergrad (Cognitive Science)
- Interested in bringing together psychology, HCI, art and design
- I love: trying new art forms, playing with my cat, using public transportation in new places!
- Office Hours: Tues 4 – 5 PM / Thurs - by appointment (https://calendly.com/khuyenle/cs147-oh)
Systemic Justice and Equity

Extreme wealth inequality intertwined with systemic injustice can cripple people's access to essentials like food, shelter, healthcare, education, and legal services. In this studio, we will examine gaps in the social security system to build solutions that tackle systemic issues or lessen negative outcomes for those in a harmful system.

***Our studio will stay cognizant of the potential minimization of serious issues inherent in creating a project within 10 weeks.

Examples: Providers, GapJumpers, Share The Meal, Comeback, Sheboard

Studios: Friday 11 AM – 1 PM, 1:30 - 3:30 PM
Pablo Ocampo
he/him

- CS Coterm (HCI); CS Undergrad (AI), Music Minor
- Interested in product management and sustainable design
- I love travelling 🚀 and learning foreign languages and culture! Also, big classical music nerd 🎻 and gamer 👾
- Office Hours: Thurs 11 AM -12 PM, Tues - by appointment (https://calendly.com/pablo-ocampo/cs147-oh )
The Future of Philanthropy & Volunteering

With a growing population of millennial and Gen Z adults as well as the dawn of the centibillionaire, we’re seeing signs of a changing philanthropy and volunteering landscape. Organic and creative new methods of donorship, such as bingo donation games on Instagram Stories, display how times are changing and there’s room for innovation. How might we reinvent philanthropy in the 21st century?

Examples: GoFundMe, ShareTheMeal, Charity Miles, Coin Up

Studios: Friday 11 AM – 1 PM, 1:30 - 3:30 PM
Katherine Gjertsen
she/her

• CS Coterm (HCI); Symsys Undergrad (HCAI)
• Interested in product management, behavior science, and VR
• I love playing games and sports, coffee shops, and meeting new people
• Office Hours: Tues / Thurs - by appointment (https://calendly.com/kgjert/147-oh)
Simplify Your Life: Inspiring Productivity & Efficiency

Technology continues to play an integral role in our daily lives. Some important practical and productive features can be muddled by the constant stream of extraneous information and distractions. As we step away from our phones, we are still bombarded with high amounts of sensory information, busy schedules, and endless to-dos to check off our lists.

Amidst all of the chaos, it is important to find ways to offload the high volume of information. How might we avoid the feeling of fatigue and instead explore technology that inspires focus, personal growth, and efficiency? In this studio, we will be exploring topics in behavior change and productivity to create supportive technology that operates as a personal assistant or life coach.

Studio: Friday 9:45 - 11:45 AM
Some Norms for Lecture

• **COVID**
  - Be **flexible** with us & each other. It is a tough time for everyone right now & more so for some. Let’s respect that!
  - Hopefully we will be in person soon, but if not, we will roll with it!

• **Video**
  - have it on if you are able to as much as possible (we understand sometimes it isn’t)

• **Participate**
  - harder than in person in some ways & in some ways easier
  - slack will be primary (cs147-2022wi) – you should have been invited
  - some voting with Zoom feedback & polleverywhere, but mainly slack
What Do You Hope to Learn in CS147?

Put a few key phrases in the #lecture slack channel

* if you aren’t in our cs147 slack grid, direct message Ji (jiannaso@stanford.edu)

** For all during lecture activities & questions use the #lecture slack channel so we can see them. For questions outside of lecture time, use the #q-and-a channel.
BREAK
10 min
stretch, eat, etc.
Outline

• *Who are we?*
• AI & User experience design
• Balancing design thinking & technology
• Design discovery & exploring ideas
• Rapid prototyping & evaluation
• Goals of the course
• Course format & schedule
• Course policies
AI Needs User Experience (UX) Design

- Tesla Model S “Autopilot”
- Future of autonomous cars
- How do we design the UX?
AI Needs User Experience (UX) Design

- Amazon Echo, Google Home & other Smart Speakers use Voice UI
- How do we design them to deal with natural human conversation?
- How do we design to support multimodal input? (e.g., + screen or vision)
AI Needs User Experience (UX) Design

Computer vision-based skin cancer detection getting better and better

- What is appropriate to show a patient?
- What should be the interface for the doctor?
- Is there a set of design patterns for these Smart UIs?
Balance

DESIGN

TECHNOLOGY
Approach to Application Design & Prototyping

- Tasks + Activities
- Technology
- Design
- Organisational and Social Issues
- Humans
What is missing?
Iterating within stages & back to prior stages
How to Design and Build Good UIs

- Iterative development process
- Usability goals
- User-centered design
- Design discovery
- Rapid prototyping
- Evaluation
- Programming
Iteration

At every stage!

Design

Prototype

Evaluate
Usability

According to the ISO:

The *effectiveness, efficiency, and satisfaction* with which specified users achieve specified *goals* in particular *environments*.

This doesn’t mean you have to create a “dry” design
Usability/User Experience Goals

- Set goals early & later use to measure progress
- Goals often have tradeoffs, so prioritize

- Example goals (?)
  - Learnable
    - faster the 2nd time & so on
  - Memorable
    - from session to session
  - Flexible
    - multiple ways to do tasks
  - Efficient
    - perform tasks quickly
  - Robust
    - minimal error rates
    - good feedback so user can recover
  - Discoverable
    - learn new features over time
  - Pleasing
    - high user satisfaction
  - Fun
User-centered Design

“Know thy User”

- Cognitive abilities
  - perception
  - physical manipulation
  - memory

- Organizational / educational job abilities

- Keep users involved throughout
  - developers working with target customers
  - think of the world in users’ terms
Accessible Design

• Different abilities
  - vision, hearing, cognitive, mobility
  - e.g., blind users with screen readers

• Moral and ethical purpose
  - inclusive design benefits everyone
  - e.g., sidewalk curb cuts

• Legal guidance
  - Americans with Disabilities Act (ADA)
User-centered Design: Needfinding

- Observe existing practices for inspiration
- Make sure key questions answered
- Ethical questions in design w/ underserved communities
Unpacking the Needfinding

[Image of a board with post-it notes organized in the 'Say, Think, Feel' format, with colors indicating different themes such as 'Tensions', 'Dissatisfactions' and 'Surprises'.]

Rechords
Develop Point of Views
(Person + Insight + Challenge)

Brainstorm on How Might We Solve

WE WERE AMAZED TO REALIZE...
(what did you learn that's new?)

THANKS TO THE BOAT OWNER's MEMBERSHIP, TRUST, AND DESIRE TO HELP THE FISHING LIFESTYLE AND CONNECTION TO NATURE, HE HAD TURNED HIS LIFE AROUND FROM DRUG ADDICT TO WHAT A JOB TO IMPROVE WITH SKILLS & SUPPORT NURTURE IT INTO A PURPOSEFUL TRANSFORMATION.

IT WOULD BE GAME-CHANGING TO...
(frame up an inspired challenge for yourself, don't dictate the solution)

ALL OF US COULD TAKE A RISK TO SEE A SPARK IN OTHERS AND

HMW bring routine and discipline less?
Sketching & Storyboarding
Concept Videos

• Illustrate context of use rather than specific UI

• Quick & inexpensive

• Forces designers to consider details of how users will react to the design
Concept Videos: Planning Storyboards

TURNING POINT: INTRO RAMBL

UGH!

Rambl

Drip coffee
Artisanal coffee
Cold brew

CHOOSE ONE!
Concept Videos: Planning Storyboards

Scene 1: Intro to SmartSenior & Tapping and Gestures

SmartSenior
Rapid Prototyping

- Build a mock-up of design so you can test it
- Low fidelity techniques
  - paper sketches
  - cut, copy, paste
- Interactive prototyping tools
  - HTML, Balsamiq, Axure, proto.io, Sketch+Marvel, Modao, etc.
- UI builders
  - Expression Blend + Visual Studio, Xcode Interface Builder, etc.
Low-fi Prototyping & Testing

Flutter
Low-fi Prototyping & Testing ➜ Final Hi-Fi Prototype
Low-fi Prototyping & Testing

Thank you for checking in.

Check in your room >>

Thank you for sharing your thoughts.

Check in your room >>

Think a minute and share >>

Thank you for sharing your thoughts.

Check in your room >>

Thank you for sharing your thoughts.

Check in your room >>

THOUGHTS

Add a Thought

Posting a thought

Thoughts

Thoughts

THOUGHTS

Add a Thought

Posting a thought

Thoughts

Thoughts

Vibes
Interactive Prototypes
Medium Fidelity

Task #2: Groups

Unable to change group settings (i.e., restrictions, leave group)

deatz

Cannot update attendance status

Voting abilities unclear and not emphasized

Restaurant descriptions distracting and not important
Interactive Prototypes

Hi-Fidelity

- Off
- Butter
- Thread

Welcome to Butter

Butter makes ordering and communication in the restaurant supply chain faster and simpler.

What's your name?

Jane McEwan

Get Started

Already have an account with us? Sign in.
Interactive Prototypes

Hi-Fidelity

- Does this mean at the quality to go in an app store?
  - for a few yes, but for most no (this is not a requirement & many will push to this in CS194H)

- You will be building a real app (with code)
  - not a click-thru prototype (e.g., using Figma or InVision)

- It should support most of your functionality

- But it might be missing
  - polish
  - back-end implementation
    - maybe data stored locally, social networks incomplete, etc.

- CS (intended) majors should have pre-reqs
  (106B/X, 142/193P/193A or experience building apps)
  If not…
CS47 – Cross-Platform Mobile Development

- Create a mobile app on both iOS & Android using the React Native framework in just 10 weeks
- Tuesday/Thursday 11:30 AM – 1 PM, 2 Units C/NC
- You can dual use CS47/CS147 projects!

- Join Tuesday’s lecture for a course & application overview
  - tinyurl.com/cs47-zoom-wi2022

- Apply here by 1/7 6 PM
  - tinyurl.com/cs47-application-wi2022
Evaluation

- Test with real customers (participants)
  - w/ interactive prototype
  - low-fi with paper “computer”

- Low-cost techniques
  - expert evaluation (Heuristic Evaluation)
  - online testing
Goal of CS 147

Learn to design, prototype, & evaluate UIs

• Tasks, activities & practices of prospective users
• Cognitive/perceptual constraints affecting design
• Techniques for brainstorming, ideation & prototyping
• Methods for evaluating UI designs
• Importance of iterative design for usability
• Technology used to prototype UIs

• How to work together as a team
• Communicating results to a group
Course Format

- Interactive lectures → you speak!
- Each week
  - 2 lectures on techniques & background
    - 60-80 minutes of lecture
    - 20-30 minutes team meeting each lecture → you need to be here to work with your team
      - some limited exceptions for some teams that are many time zones away
    - 10-20 minutes for in class exercises
  - 1 studio with hands-on activity or team presentation
- Quarter-long project
- Readings, Videos, Podcasts
  - Course material will be online
    - slides, exercises, readings, schedule
    - no lecture video (this will depend on Stanford COVID policies)
- Have fun & participate!
Projects

• Each team will propose a UI-oriented project
  - fixing something broken or a completely new idea
  - based on team needfinding

• Theme
  - each Thursday/Friday studio has a theme
  - all projects mobile/wearable/off desktop

• Groups
  - 3-4 students to a group (4 preferred)
  - work with students w/ different skills
  - CS students should have had 142/193p/193a or equivalent (non-majors need not)
    • If not, take CS47 (Tu/Th11:30 AM – 1 PM)
      learn ReactNative, dual use project for CS47/147
  - groups meet in class & studio weekly

• Cumulative
  - apply several HCI methods to one interface

• If you let your team down, we will lower your grade
Design Studios

Teams attend small weekly studio (9-16 students)
- critique/feedback in more intimate environment
Project Process Timeline

Week 2: Needfinding
Week 3: Experience Prototypes & Testing
Week 4: Concept Video
Week 5: Low-fi Prototype
Week 6: Medium-fi Prototype
Week 7: Heuristic Evaluation
Week 8: High-fi Prototype
Week 9: Midterm
Week 10: Project Fair
# CS 147 COURSE TIMELINE

<table>
<thead>
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<th>SUN</th>
<th>MON</th>
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<td>Intro</td>
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<td>Design Discovery</td>
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<td>Project 0</td>
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<td>Filling out studio preference form, due in class 1/5</td>
<td>Assignment 1 (Needfinding) released, due in studio 1/13 or 1/14</td>
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<td><strong>WEEK 2</strong></td>
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<tr>
<td></td>
<td>Define</td>
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<td>Ideate</td>
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<td>A1 Presentation, PDVs</td>
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<td>Assignment 2 (Define) released, due in studio 1/20 or 1/21</td>
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<td><strong>WEEK 3</strong></td>
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<td>MLK Jr. Holiday</td>
<td>Concept Videos</td>
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<td>A2 Presentation, Tasks</td>
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<td><em>Accessibility workshop sometime this week.</em></td>
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<td>Working on Assignment 1 (Needfinding), presented in studio 1/13 or 1/14</td>
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<td>Exploration</td>
<td>Early Stage Prototyping</td>
<td>Concept Video Crit, Sketching</td>
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<td><em>Visual design workshop 1 (Figma skills) this week.</em></td>
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<td>Working on Assignment 4 (Video), presented in studio for critique 1/27 or 1/28</td>
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<td>Film Festival!</td>
<td>Visual Info Design</td>
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<td>A5 Presentation, Design Systems</td>
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<td>Working on Assignment 5 (Low-fi &amp; Test), presented in studio 2/3 or 2/4</td>
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<td>A4 Video Revisions</td>
<td>A5 Presentation, Design Systems</td>
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<td>Assignment 6 (Med-fi) released, due Monday 2/14 @ 5 PM</td>
<td><em>Visual design workshop 2 (Design Systems) this week.</em></td>
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ASSIGNMENTS OVERVIEW

See corresponding colors on the calendar to see when these projects will occur during the quarter.

Assignment 1
Needfinding
In this assignment you will plan, develop, and execute the first needfinding round for your quarter-long team project. You will present your interview plan (methodology), data gathered from your initial interviews, and the key insights and inferences you have made. You will capture this analysis in an empathy map that you will share in your studio presentation.

Assignment 2
POVs and Experience Prototypes
You will revisit the findings from A1, interview more participants based on a deeper focus, and formulate points of view for your potential users. From there, you will craft several “How Might We” statements to frame the problem area and intended design goal. Based on the best HMW statements, you will brainstorm several solutions. You will then create and test 3 “experience prototypes” to learn more about these ideas.

Assignment 3
Website
The goal of this assignment is to learn how to present your work in a professional, engaging, and appealing manner. Previous students have used their websites to talk about their project when on the job hunt! Your website will be hosted on Stanford AFS.

Assignment 4
Concept Video
The goal of this assignment is to continue to learn how to brainstorm novel design ideas and turn these ideas into a concept video. You will start by conducting market research to find other apps in your space (ensure you’re thinking up a novel product). You will then shoot a video that will

Assignment 5
Low-fi Prototype and Usability Test
Learn how to use low-fi prototyping in the early stages of UI design. You will first sketch many different design realizations

Assignment 6
Interactive Medium-fi Prototype
Learn how to build medium-fidelity, interactive prototypes of UI ideas using an interactive UI design tool. Understand the tradeoffs compared to low-fi prototyping or even creating a prototype through coding. You will revise your UI ideas based on the insights from your low-fi prototype user testing and feedback from your studio peers and CA. Then, you will use interactive tools to
Books

We will give you web links to all necessary readings/videos

Recommended textbook (if you need one)

*Designing the User Interface: Strategies for Effective Human-Computer Interaction* by Shneiderman et. al, 6th edition (2016)
Assignments

• Individual
  - 1 presentation each
  - 1-2 written (handed in online)
  - class & studio participation (graded)
    • in class exit tickets to show you came to lecture & are paying attention

• Group
  - 10 assignments
    • 4-5 presentations with 3-4 write-ups + video + poster
  - all group work handed in online
    • team web site & online submission site
Grading

• A combination of
  - individual assignments & presentation (10%)
  - class/studio participation (10%)
  - midterm (20%)
  - group project (60%)
    • presentations/poster (group component)
    • project write-ups

• No final
  - must be present at project fair on Fri., 3/11 instead
Tidbits

- **Late Policy**
  - no lates on group assignments
  - individual assignments lose one letter grade/day

- **Course web site**

- **Studio preferences & team signups (you do *not* need a team in advance!)
  - due Wed at 5 PM

- **Attendance**
  - you are expected to be in lecture & studio synchronously (and eventually in person)
  - If you have a small conflict (less than 30 min), we will consider how to resolve it
    - fill out [https://bit.ly/cs147-conflicts](https://bit.ly/cs147-conflicts) for us to review & approve conflicts
  - we drop 1 studio miss, after that it comes out of your participation grade
  - if you get sick, we will figure it out. Contact me & our head CA (Kristina)
Summary

• UX design is an important part of most software

• Getting the interface right is hard, but…

• Solution is *Iterative Design* including repeated cycles of
  - Design
  - Prototyping
  - Evaluation
Next Time

- Design Discovery

- Read
  - Margaret Gould Stewart, *From tecnho-optimism to techno-realism: What it means to innovate responsibly*
  - Holtzblatt & Beyer, Ch. 3 from *Contextual Design*
  - d.school’s *Empathy Fieldguide*
  - If any readings are password protected, it should be “hcid”

- Watch
  - [ABC News Nightline IDEO Deep Dive, July 1999](#) (22 minutes)
  - optional: [ABC News, IDEO Design Thinking](#), January 2013 (13 minutes)