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# INTERACTION DESIGN + A GLOBAL PANDEMIC

FAMST 109-ID

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Film and Media, UCSB  
Spring 2020

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**I will teach you in a room.  
I will teach you now on Zoom.  
I will teach you in your house.  
I will teach you with a mouse.  
I will teach you here and there.  
I will teach you because I care.  
So just do your very best.  
And do not worry about the rest.**

## ZOOM HELD OFFICE HOURS

TUESDAYS FROM 4-5 PM + BY APPT

## MY PERSONAL ZOOM ROOM

<https://ucsb.zoom.us/my/vjumamel>

## ALL COURSE MATERIALS ON GAUCHOSPACE

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## SUMMARY

In this production course, students will learn methods and skills involved in designing and prototyping interactive media systems. The course covers the design process from the initial formulation of a problem to creation of digital prototypes. Students will learn about the fields of interaction design, design methods and skills, sketching techniques, user-interface design, wireframing and prototyping. The goal is to teach critical thinking about interaction, automation, media, and data through a design practice.

# COURSE SYLLABUS

## EXPECTATIONS

Each week students will write 1,200 word blog posts, comment on their peers posts, and work in groups of 3 on a series of assignments towards developing one interactive prototype for the final. Blog posts are due on Mondays; comments to the posts and group assignments are due on Wednesdays.

We will meet as a class synchronously for 20 minutes each Monday and Wednesday at 1pm PST on Zoom unless otherwise specified. These 20 minutes are to answer questions and make sure we stay on track. Otherwise, students are expected to do the readings, video watching, media interacting, and designing collaboratively in groups of 3 on their own timeline while adhering to social distancing practices.

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Working in **GROUPS** of three, the centerpiece of this course is a design project that you will develop, over the course of the quarter, from the conception of the problem you want to solve, through design research and ideation, to the stage of a digital prototype. Along the way, you will create a number of artifacts that represent different stages of the design process (sketches, personas, low-fi prototypes, etc.). We will use the class activities and homework to move the projects forward. Over the course of the quarter, your project will be to design a system to support one particular kind of relationship that is important to you but which is not sufficiently well supported by current tools. As an additional design constraint, assume that the technology will be used to support this relationship while the people in the relationship are living under quarantine during this global pandemic.

# PROTOTYPE DESIGN

One way to think about **SCOPING** is in terms of the number of steps or interactions that your system will support. Think about the process of shopping on Amazon. You first search, then the results page appears, then you click on a result to see the details for that item, then you add the item to cart, then you click to check out, etc. Each of these steps--entering a search term, clicking on a result, adding an item to cart--is a user interaction. Some of these interactions happen on the same page (e.g., adding to cart and clicking the Check Out button both happen on the item details page), while other interactions move the user to a new page (clicking on an item in the results list open the page with the detailed information for that item).

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Blog posts are short, critical exercises to help students articulate the research questions they are having as they read and experience the course materials. They are expected to be well-written, thoughtful, and engaged. Each blog post should provide one “golden nugget” (an insight gained, or lesson learned) for each assigned reading and discovery activity. Average blog post length is 1,200 words and may be longer. Upload blogs and assignments to blog on Gauchospace with a title, and 3 meta tags for each entry.

# BLOGS AND ASSIGNMENTS

**Blogs are due each Monday by 12:00 Midnight.**

**Group assignments and blog commenting (two comments on peers' blog posts) are due each Wednesday by 12:00 Midnight.**

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You are invited to a Zoom meeting.  
When: Mar 30, 2020 01:00 PM Pacific Time (US and Canada)

Register in advance for this meeting:  
<https://ucsb.zoom.us/meeting/register/v5Qrf-mrrTgr3jgcrQ5N28MbSteMGaCazw>

After registering, you will receive a confirmation email containing information about joining the meeting.

**Synchronous meetings each  
Monday and Wednesday on  
Zoom from 1:00-1:20pm PST.**

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Monday  
March  
30

**Read**

Cross, Nigel (October 1982) "[Designerly Ways of Knowing](#)." In *Design Studies*, vol 3 no 4, pp. 221-227.

Roger Martin and Hilary Austen (1999) "[The Art of Integrative Thinking](#)" Rotman Management.

# Week 1 - Relationships

**Discover**

[Helvetica](#) (Documentary Film)

[The UX Planet](#) (Website)

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Wednesday  
April  
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**MOTION SKETCH ASSIGNMENT** begins with Sir Isaac Newton: *Philosophize Naturalis Principie Mathematica*, William Dawsons Sons, 1687 (also known as Newton's Laws of Motion).

1. Objects at rest will stay at rest and object in motion will stay in a straight line unless acted upon by an unbalanced force.
2. Force is equal to mass times acceleration.
3. For every action there is always an opposite and equal reaction.

### Step 1. Find Motion.

Find three examples of anything in motion that demonstrates at least one of Newton's three laws of motion. Motion must be uninitiated by the student. Students should "look" for motion and not create motion. For example, studying the effects of curtains blowing in a window instead of twirling fabric by hand is an initiated motion.

### Step 2. Observe, Sketch, and Write about.

After finding motion that represents Newton's laws of motion, begin by describing the motion with notes and sketching real-time drawings—drawings done on site that record the motion as it takes place. Students will produce sequential drawings that tell the story. Final story drawn in frames with either pencil, black pen/marker, black ink and white paint. No color or digital means will be used.

### Step 3. Edit Frames

After you made a sequence of drawings that tell the story, start editing the frames in exactly nine frames. The [storyboard](#) of nine frames should tell the story of motion in logical order.

## Two Assignments Bio and Sketch

**BIOGRAPHY:** Add a one paragraph biography of yourself to the blog. Include your prior education, work experience if you have it, and your background in interaction design if you have any. This could be particular skills you have or any software tools you know how to use related to design, prototyping, etc. If you have developed any kind of interactive system before, please note that too.



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Monday  
April  
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**Read**

Cross, Nigel (1993) "[A History of Design Methodology.](#)" M. J. de Vries et al (eds.), *Design Methodology and Relationships with Science*: Kluwer Academic Publishers, 15-27.

Anthony Dunne & Fiona Raby (2013) "[Chapter 9: Speculate Everything](#)" In *Speculative Everything: Design, Fiction, and Social Dreaming*. Cambridge: The MIT Press, 159-189.

# Week 2 - Design Thinking

**Discover**

Ted Talk (2009) "[Tim Brown urges designers to think big](#)" (16:47 min)

[Book Burning Reviews Episode 1 - Design Thinking by Nigel Cross](#) (16:51 min)

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Wednesday  
April  
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# Design Problem

## *PART I - DESCRIBE PROBLEM*

Each group of submits a one-page design problem for your group project. Specify what particular type of relationship you intend to support and describe what the unique aspects of this relationship are for you. Describe what you currently do to maintain this relationship over distance and what works well and doesn't work well about that current practice. Finally, think about what the essential functions are that a tool would need to have that would, from your perspective, help you maintain that relationship in a robust way (e.g., maintaining continuous awareness of the other person/people, being able to keep up with everything that's going on in their lives, being able to see them/hear them, etc.).

Your goal is to consider the human and social nature of the problem and what existing designs lack in addressing the problem. You can optionally cite related work or resources that will not count towards your one page limit.

## *PART II - DESIGN SOLUTIONS*

Each group submits a two-page write-up that describes at least three different design approaches you could take in addressing your design problem. Try to make these approaches as diverse as possible from one another. For instance, consider the different types of technology or infrastructure you could leverage, or different strategies that you could embody in your system (e.g., for an application that helps you maintain context with an elderly relative, you might consider whether other caregivers will be interacting with the system; if the relative has sensory or cognitive impairments that will need to be addressed; whether the individual(s) in question would actually use a given type of technology or tool and so forth). Your approaches should be developed within the context of interaction design. Consider how users might interact with a proposed system, what problem it will solve, and why it would be an improvement over existing solutions.

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Monday  
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**Read**

Löwgren, Jonas and Eric Stolterman (2007) "Chapter 2: The Process" In *Thoughtful Interaction Design: A Design Perspective on Information Technology*. Cambridge: MIT Press.

Zimmerman, Eric (2003) "Play as Research: The Iterative Design Process." In *Design Research*.

# Week 3 - Iterative Process

**Discover**

Iterative Drawing - The Fastest Way to Improve (55 min. YouTube video)

David Kelley-Design as an Iterative Process (1 min. -- look him up)

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April  
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### *SKETCHING ALTERNATIVES*

Take a 11"x17" piece of white paper and divide this paper into 40 2"x2" squares. Sketch 40 solutions to your design problem, one in each square, writing a brief caption for each to help someone else understand the idea each sketch conveys.

A few important guidelines:

- Focus on quantity not quality
- No two ideas should be alike
- Include ideas from existing products or prior research
- Every caption should include an active verb, conveying what the solution does to address the problem.
- If you get stuck, think about different contexts in which your system could be used to inspire new ideas
- Submit a link to a digital version of your 40 squares (a scan, a photograph, etc.).

## 40 Squares

### *DESIGN SYNTHESIS ACTIVITY*

Take the alternatives you sketched out and cluster them into ~3--5 high-level functional categories. Explain why these are clustered in this way. What is consistent? What was redundant? What is unrelated? Pick an approach: choose the one functional category that you want to develop for the remainder of the term, and articulate why this is the one chosen (best fit, most realistic address to constraints, etc.) Type, handwrite, or photograph your results and turn them in through your web page (you can scan/photograph sketches or hand-written notes).

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Monday  
April  
20

**Read**

Löwgren, Jonas and Eric Stolterman (2007) "Chapter 5: Methods and Techniques" In *Thoughtful Interaction Design: A Design Perspective on Information Technology*. Cambridge: MIT Press.

Nielsen, Lynn (2018) "30. Personas" *The Encyclopedia of Human-Computer Interaction, 2nd Ed.*

# Week 4 - Personas / Users

**Discover**

[Personas -- a Simple Introduction](#)

[A Closer Look At Personas: What They Are And How They Work \(Part 1\)](#) and [\(Part 2\)](#)

[Better User Experience With Storytelling](#)

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#### *STORYBOARD:*

Design a [storyboard](#) that shows how a user or users will interact with your design. The storyboard should highlight important aspects of how your design will be used along with transitional frames that show how a user will navigate through the system. Submit at least 1 storyboard with 5 frames (or 2 storyboards with 3-5 frames). The scenario is the story or script of how a user will use your system and the storyboard is a graphic depiction for how the story will play out in the system. A storyboard is an early version of paper prototypes of the screens in your system.

NB: To make storyboards useful, try to think about what you can learn from drawing your solution out, over what you can get from just a narrative scenario. In other words, a storyboard should be a little more than just a drawn scenario. Try to represent physical environment or other type of context (e.g., location of other people).

## Storyboard + Scenario

#### *SCENARIO*

Create a set of task scenarios that demonstrate the sequence of actions the user(s) will have to go through in order to achieve their practical goals. You will use these scenarios both to guide your designs and to assess your designs throughout the rest of the project. You should end up with 3 to 5 primary scenarios; more than this will make it difficult to focus. You will also have to make a judgement call about how detailed to make the task descriptions.

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Monday  
April  
27

**Read**

Woletz, Julie (2018) "[Interface of Immersive Media](#)" *Interface Critique Journal*, Vol. 1.

Shapiro, Alan N. (2018) "[Gestalt-Ideas at the Interface Between Theory and Practice](#)" *Interface Critique Journal*, Vol. 1.

# Week 5 - Interfaces

**Discover**

[The Design Justice Network](#)

[The Field Guide to Human Centered Design](#), 2015.

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Wednesday  
April  
29

**AVATARS:** Create 4 different personas/users/characters/avatars for your project. On an 8.5X11" paper, create a card/sketch for each persona using the examples from last week's readings.



## Avatars and Wireframes

**WIREFRAME:** Based on the personas and sketches you have created over the last couple of weeks, as well as the feedback you received during peer critiques, create wireframes of one to two full interactions within your system. The wireframe should cover at least 5 panels (screens of a mobile application, webpages, etc.). Upload the pdf or image file, or provide a link to an online version of your wireframes. May use [gomockingbird.com](http://gomockingbird.com).



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Monday  
May  
4

**Read**

Anthony Dunne & Fiona Raby (2013) "[Chapter 2: A Map of Unreality](#)" In *Speculative Everything: Design, Fiction, and Social Dreaming*. Cambridge: The MIT Press, 11-32.

Anthony Dunne & Fiona Raby (2013) "[Chapter 3: Design as Critique](#)" In *Speculative Everything: Design, Fiction, and Social Dreaming*. Cambridge: The MIT Press, 33-46.

# Week 6 - Critique 1

**Discover**

[Design Is \[Speculative\] Futures Design Thinking - a new toolkit for preemptive design](#) (50:44 min)

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Wednesday  
May  
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Presentation length: **10-15 minutes**.

The above is a suggested format, but this format is not required.

- A brief description of what problem you tried to solve in your project and why this problem is important.
- A high-level overview of your solution. (e.g., “I created a prototype for a mobile-phone application that enable users to do X, Y, and Z.”)
- A walkthrough of one of two key features of the application. You can do this with screenshots in your slides, or you can create a video that walks the audience through these features. Please don’t try to do a live demo. Script what you want us to see and then either video-record it or practice to do the walkthrough effectively with slides.
- The design rationale for an important design decision you had to make during the project. This is to give us a flavor of the kind of thinking that went into the project.

## Midterm Critique

Each group presents their design in progress for constructive feedback via Zoom. Presentations should be 10-15 minutes each.

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Monday  
May  
11

**Read**

Camburn, Bradley & Viswanathan, Vimal & Linsey, Julie & Anderson, David & Jensen, Daniel & Crawford, Richard & Otto, Kevin & Wood, Kristin. (2017). Design prototyping methods: State of the art in strategies, techniques, and guidelines. *Design Science*. 3. 10.1017/dsj.2017.10.

Moggridge, B. (2007) "Prototypes." In *Designing Interactions*. Cambridge, MA: The M.I.T. Press, pp. 682-723.

# Week 7 - Paper Prototype

**Discover**

Case Study: Wii: <http://iwataasks.nintendo.com/interviews/#/wiiu/miiverse2/0/0>

GUI Prototyping Tools: <http://c2.com/cgi/wiki?GuiPrototypingTools> + Selection of tutorials

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Wednesday  
May  
13

The goal of this assignment is to learn how to use low-fidelity prototyping in the early stages of design. This is super helpful for rapid prototyping. Using paper, sticky notes, scissors, tape, and any other supplies you may want to use, create a paper-prototype of your project solution. Focus on tasks and interactions. You do not have to prototype the whole system, but try to prototype as many of the interactions you are planning to implement in your medium-fi prototype as you can. Prototype at least 10 screens and at least 10 interactions (interactions can be as small as clicking a button to select an item and as large as searching for an item and having an entirely new screen show up). Try to have a reasonable balance of some bigger and some smaller interactions--I want to see a rich and diverse set of interactions in your prototypes.

## Paper Prototype

To make this exercise as useful to you as possible, make sure to prototype all the interactions about which you are uncertain and for which you would like to get feedback from your peers and me. In your write-up, describe the design decisions you made, what did or did not work well in the process, and what you might do differently if you redesigned your prototype. Your write-up needs to be 1,200 words plus a **video** (using a phone camera is perfectly fine) of your paper prototypes.

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Monday  
May  
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Join the live lecture online  
“Glitch Art + Technology”  
Media Arts & Technology Seminar Series

# Week 8 - Media Arts & Tech

1 - 2pm via Zoom  
Details to follow.

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Wednesday  
May  
20



## Digital Prototype Version 1.0

First version of digital prototype. This should be based on your scenarios and storyboards and your designs from earlier assignments. Figure out what tools you want to design your prototype in and start to translate your storyboard into an interactive prototype. Your final digital prototype should have at least 15 interactions, where an interaction is defined as having a trigger (e.g. click, button) cause an event (e.g. new screen). Your digital prototype should look polished and visually appealing, but the focus is on the interactions. It should look like something that you would be excited to show a client, or colleague, or boss.

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Monday  
March  
25

No Zoom Meeting  
Happy Memorial Day

# Week 9 - Digital Prototype

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Wednesday  
May  
27



## Digital Prototype Version 2.0

Keep plugging away on your digital prototypes. Upload link to the current state of your project. (Version 1 and 2 are not graded individually; they are a process steps to ensure you are making progress on this large deliverable.)



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Monday  
June  
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# Week 10 - Critique 2



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# FINAL SUBMISSION

## *Medium Fidelity Prototype:*

Upload a link to your prototype or a video of your prototype to your web page.

*Final Write-up:* Your write-up should be 3-5 pages single-spaced with sketches and screen shots as appendices, these don't count for the page limit. Please don't feel the need to add as many screenshots as you possibly can. Select ones that convey useful information. Focus on quality and polish as if you were delivering it to a client.

## *Suggested outline for write-up:*

1. Problem statement.
  2. Solution overview
  3. Describe the final design
    - Describe the functionality (i.e., what you can do with it)
    - Provide a description of the main parts of the design flow. This is important because it will provide you with a record of how the design worked or was intended to work, long after the implementation no longer works. It could in principle also act as a deliverable to hand off to an implementor.
  4. What was left unimplemented?
    - Sketching techniques and approaches
    - Tool(s) you used to develop the design
    - Pros and cons of these approaches and tools for your project
  5. Design Evolution
    - Describe how your design changed from initial sketches, brainstorming, low-fidelity prototype, to final design
    - Show the major changes were and why they were made.
    - Relate your design process and choices to the readings.
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# THE FINAL

Due Monday, June 8, 2020

By 12:00 Midnight

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