

UC-Berkeley
Jacobs Institute
Master of Design (M.Des)

Design Innovation 202
**Technology
Design
Foundations**

SPRING 2021
MW 2PM - 4PM PST
Remote Learning via Zoom

INSTRUCTORS
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GSI
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→ [ZOOM LINK](#)

→ [PIAZZA LINK](#)

→ [bCourses LINK](#)

DESCRIPTION

Technology Design Foundations (TDF) introduces foundational design and technology frameworks and builds skill sets essential to the design of products, services, and experiences enabled by emerging technologies. It follows a human-centered design process that includes research, concept generation, and prototyping, with an emphasis on iteration and refinement. It also develops fluency across a range of core technologies, from fabrication to interactive device design, and how to operationalize them within a design context. These activities are supported by regular practice of design critique. Students engage with a technical semester-long project to create a product-service system leveraging both hardware and digital technologies that addresses a well-defined need.

A NOTE ON REMOTE LEARNING

As of this writing, we've all been doing the best we can with remote collaboration and learning for nearly 10 months due to the global pandemic. We are working hard to ensure that our remote learning experience in TDF is as high-impact and meaningful as in-person learning—and we're delighted to share many initiatives, from remote makerspace access to creative collaboration via Figma, to help make this happen. From you, we ask your attention, generosity, and willingness to adapt to the occasionally challenging scenarios and situations that may arise with remote learning. We can't wait to launch into this semester together.

COURSE LEARNING TOOLS: bCourses, Piazza & FIGMA

bCourses will be essential to the conduct of this class, and will be the primary portal for assignment submission, student contact, etc. Please ensure you have access to our bCourses site, via bcourses.berkeley.edu.

Piazza will be the primary method of communicating with instructors and classmates. Please stay tuned for more details on setting up a piazza account with our class. If you have any problems or feedback for the developers, email team@piazza.com.

FIGMA will provide a creative collaboration space for us to work together, and will be required. Please stay tuned for more details on accessing FIGMA with our class.

CLASS POLICIES

Attendance and Participation

- You will receive **two** no-questions-asked absences during the class
- Any further absences will affect your final grade in the course.

Statement on Honesty, Integrity, and Respect

UC Berkeley's Honor Code is simple and clear, and by participating in our class you acknowledge and agree to abide by the following mantra:

"As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others."

Plagiarism, by the above standards, would constitute a serious affront to your community, peers, academic experience, and professional practice. Pursuant to the above code, academic dishonesty in individual or group work will not be tolerated. If you are unclear about the difference between plagiarism and citation, or have any other questions about our and the UC's expectations, please review UC Berkeley's code of conduct, found here: <http://sa.berkeley.edu/code-of-conduct>

Accommodation policy

We honor and respect the different learning needs of our students, and are committed to ensuring you have the resources you need to succeed in our class. If you need accommodations for any reason (e.g. religious observance, health concerns, insufficient resources, etc.) please discuss it with us or with an academic advisor so we can collaborate on how to best support you. We will respect your privacy under state and Federal laws, and you will not be asked to share more than you are comfortable sharing.

If you have a Letter of Accommodation (LOA) through UC Berkeley's Disabled Students' Program (DSP), it should be made available to us at the beginning of the semester. More information about how to attain an LOA or the extensive other services provided by the DSP can be found at <http://dsp.berkeley.edu>

Support during Remote Education

The Student Technology Equity Program (STEP) is available to help access a laptop, Wi-Fi hotspot, and other peripherals (<https://technology.berkeley.edu/STEP>).

You will be alerted as to when synchronous sessions are about to be recorded. If you prefer not to be recorded, you may turn your video and microphone off.

Please set your Zoom name to be the name you would like the instructors to call you. You may optionally include your personal pronouns.

Please set your Zoom picture to an appropriate profile picture of you to foster a sense of community and enhance interactions. If you are not comfortable using an image of yourself, you may use an appropriate picture of an avatar.

We encourage participating with your video on in order to foster a sense of community and enhance interactions. However, we understand that some students are not comfortable with video or may not be able to participate by video.

Grading Policy

30% on attendance, participation, and contribution to critique

35% on the quality of your individual assignments

35% on the quality of your team's work and final project

Grading rubrics will be provided on a per-assignment basis.

Late Work

Late assignments will be accepted up to 48 hours past the deadline, with a 30% late penalty applied.

COURSE PROJECT

The core of the class is centered on a 9-week intensive team project. You will identify an opportunity for a design intervention inspired by research on people and contexts, propose a solution, and iteratively develop prototypes to embody that solution. At the end of the semester, we expect every team to present:

- A demo consisting of a high-fidelity physical and digital prototype;
- A video illustrating how your project/prototype addresses the opportunity you identified, grounded in your insights about people and their contexts;
- A presentation to illustrate process you followed to identify the opportunity and connect it to the demo
- A portfolio-ready project page, hosted via BeHance, to share your work with the Jacobs community

> Critique forms an essential part of the course. We'll be discussing best practices on how to deliver, receive, and reflect on critique in the context of technology design.

> Our group project starts ~5 weeks into the semester to ensure that all students build a foundation in technical and design prototyping skills individually first.

DATE	TOPIC	ASSIGNMENT DUE
1/20	Design Frameworks & Overview	Survey
1/25	2D Digital Fabrication	2D Fabrication Prep
1/27	3D Digital Fabrication	
2/1	Interactive Device Design: Actuation	2D + 3D Design & Build
2/3	Critique I: Fabrication	Critique I Reflection
2/8	Interactive Device Design: Sensing	
2/10	Interactive Device Design: Programming & Logic	Sensing & Actuation Assignment
2/15	<i>No Class: President's Day</i>	
2/17	Critique II: Interaction	Interaction Build
2/22	Design Process Introduction Team Formation	Critique II Reflection Project Concept
2/24	User Research	Team Roadmap
3/1	User Research II Synthesis	
3/3	Problem Framing	User Research Portfolio
3/8	Concept Generation	
3/10	Prototyping	Concept Generation
3/15	Critique III: Hypothesis to Prototype	Team Opportunity & Concept
3/17	User Research III Iteration	Critique III Reflection
3/22	<i>No Class - Spring Break</i>	
3/24	<i>No Class - Spring Break</i>	
3/29	Reframing Synthesizing Feedback	Prototype & Concept Feedback Portfolio

➤ Our final presentation in the course involves a public critique and showcase to the Jacobs Hall Community - a highlight of every semester. Stay tuned for more details and invite your friends and family.

3/31	Interactive Device Design: Voice & Speech	
4/5	Interactive Device Design: Vision & Labeling	Voice Assignment
4/7	UI Prototyping	Vision Assignment
4/12	Storytelling & Video	UI Assignment
4/14	Studio I	
4/19	Critique IV: Iterated Prototype & Story	Team Prototype & Story
4/21	Studio II	Critique IV Reflection
4/26	Studio III	
4/28	Last Class	
5/5 (TBC)	Showcase & Final Critique	Demo & Final Prototype
5/7	(no class)	Final Materials Due