Deplastify the Planet

INDENG 190E/290 001
Sutardja Center for Entrepreneurship and Technology, UC Berkeley
Spring 2022, 3 units, Tuesday 2 pm – 5 pm PST
In-Person Instruction

Instructor: Mathieu Aguesse, mathieu.aguesse@berkeley.edu

Course Coordinator: Celine Wherritt, celinewherritt@berkeley.edu

Office hours: Thursday 2pm-3pm or by appointment. Teams will be required to meet with teaching staff once a month

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Course Description

The world is drowning in the plastic that we created, and which takes hundreds of years to decompose. It is a disaster choking our oceans, poisoning our food chains and clogging our landfills. To solve this problem, we must find ways to replace or at least reduce plastic in manufacturing, to reuse, recycle or repurpose the plastic already manufactured, to recuperate discarded plastic from the oceans and landfills, and to destroy plastic responsibly.

Companies who want to accomplish the same goals have partnered with UC Berkeley for this course. Class participants will act as student consultants for companies, who have prepared "deplastification challenges" that align with their respective business models. Student teams will be supported by representatives from the partner companies. Students will gain hands-on work experience as a consultant in teams that are diverse in study and background. Past company sponsors include Whole Foods, Faurecia Automotive, Danone, Nestle, Recology SF, Method Home Products, Samsung and more! Furthermore, the course invites guest speakers who are experts in plastic and/or entrepreneurship to help guide teams with their solution.

The course will cover ethnographic interviewing, design thinking, ideation tools, designing and prototyping products, validation with customer feedback, and business modeling.

Attendance/Participation Policy

Given that this is a consulting project-based class, attendance in classes is mandatory - please attend the first two weeks of classes in order to secure your enrollment. 2 unexcused absences will be allowed, and excused absences will be taken by email. Further persisting absences will result in a significant impact on your participation grade, as group work is essential to your projects with the companies. Please email celinewherritt@berkeley.edu **before** the class if you will be absent.

Assignments

Assignments and deliverables are expected to be submitted on time through Bcourses. If you have troubles with such submissions, please email them to celinewherritt@berkeley.edu before the deadline. Weekly assignments will not affect your grade, but will be looked at for completion and feedback, as well as aid you in your continuation of the corporate project. There are 3 sections of the class, which are also called "Gates." For each Gate, every team will be required to submit an accumulation of their work thus far, which will be peer reviewed and graded. Each gate will include a video and slide deck submission, and you will be graded as a group. Here are links to the grading rubrics:

Gate 1 Grading Rubric

Gate 2 Grading Rubric

Gate 3 Grading Rubric

Due dates for Gates are as follows:

2/15 - Customer Discovery 3/15 - Problem Settings & Solutions 4/26 - Prototyping & Final Work

Grading and Assessments

This class will follow the normal Berkeley grading scale. There will be three larger sections in the class; Customer Discovery, Problem Settings & Solutions, and Prototyping & Final Presentations. Each of these sections will have assignments throughout, but you will be graded on the Summaries turned in at the end of each of these sections. Please bring up concerns on grading as you have them.

25% - Customer Discovery

25% - Problem Settings/Solutions

25% - Prototyping & Final Presentations

25% - Team Peer Reviews/Class Participation/Class Attendance

+ Bonus opportunities available

Team Peer Reviews will first occur in the middle of the semester. Team members will be able to see their team peer grade at this time. These reviews will include positive and constructive feedback from your peers in your team, and students will have the opportunity to earn a higher grade by becoming more involved in the project for the remainder of the semester. Towards the end of the semester, students can request that their team members retake the survey to earn a higher Peer Review grade. An example of the Team Peer Review survey can be found here.

There will be no sit-down exams expected in this class. Instead of a graded midterm, student teams will have a Midpoint Partner Check during the week of 3/8 - 3/15. There is no grading rubric for this Partner

Check, so teams should aim to meet the client's expectations. Instead, your Gate 2 submission will be due to Bcourses, where you will be provided feedback in preparation for your Partner Check. Final Presentations will take place during the last week or class *or* during RRR week. Student teams will meet independently with their corporate partners to present their final findings. **In addition**, all students will be expected to attend a course event called Demo Day, where teams will present their findings to the class in the presence of judges independent of the course.

Awards and Opportunities

During the Demo Day event at the end of the semester, students will vote on one team as finalists for the UC Berkeley Collider Cup. This event is a showcase competition with every SCET entrepreneurship course that takes place during RRR week. Teams who participate will compete for potential seed funding to launch their entrepreneurial venture. See more information about the event here.

Course Evaluations

At the end of the term, students will be asked to fill out an evaluation to give feedback about the course. SCET values and appreciates student responses, which are used to better understand and improve our courses. Students are strongly encouraged to submit the evaluation, with the knowledge that SCET uses these evaluations to determine what courses should continue.

Student Code of Conduct & Academic Integrity

Everyone in this class is expected to adhere to this code: UC Berkeley's honor code states "As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others." As a Cal student, you are held to the University's Student Code of Conduct

Academic Integrity: Any assignment submitted by you and that bears your name is presumed to be your own original work that has not previously been submitted for credit in another course unless you obtain prior written approval to do so from your instructor. In all of your assignments, you may use words or ideas written by other individuals, but only with proper attribution. To copy text or ideas from another source without appropriate reference is plagiarism and will result in a failing grade for your assignment and usually further disciplinary action. For additional information on plagiarism, self-plagiarism, and how to avoid it, see Berkeley Library website.

If you are not clear about the expectations for completing an assignment or taking a test or examination, be sure to seek clarification from your instructor beforehand. Anyone caught committing academic misconduct will be reported to the University Office of Student Conduct. Potential consequences of cheating and academic dishonesty may include a formal discipline file, probation, dismissal from the University, or other disciplinary actions.

Inclusion: We are committed to creating a learning environment welcoming of all students. To do so, we intend to support a diversity of perspectives and experiences and respect each others' identities and

backgrounds (including race/ethnicity, nationality, gender identity, socioeconomic class, sexual orientation, language, religion, ability, etc.). To help accomplish this:

- If you feel like your performance in the class is being impacted by a lack of inclusion, please contact the instructors, your ESS advisor, or the departmental Faculty Equity Advisor (list and information at: https://diversity.berkeley.edu/faculty-equity-advisors). An anonymous feedback form is also available at https://engineering.berkeley.edu/about/equity-and-inclusion/feedback/.
- If you have a name and/or set of pronouns that differ from your legal name, designate a preferred name for use in the classroom at: https://registrar.berkeley.edu/academic-records/your-name-records-rosters.
- If you feel like your performance in the class is being impacted by your experiences outside of class (e.g., family matters, current events), please don't hesitate to come and talk with the instructors. We want to be resources for you.
- We are all in the process of learning how to respect and include diverse perspectives and identities. Please take care of yourself and those around you as we work through the challenging but important learning process.
- As a participant in this class, recognize that you can be proactive about making other students feel included and respected.

Student Accommodations

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 with your instructor or academic advisor 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. The disabled student program is a related resource, listed below.

UC Berkeley is committed to creating a learning environment that meets the needs of its diverse student body. If you anticipate or experience any barriers to learning in this course, please feel welcome to discuss your concerns with me.

If you have a disability, or think you may have a disability, you can work with the Disabled Students' Program (DSP) to request an official accommodation. The Disabled Students' Program (DSP) is the campus office responsible for authorizing disability-related academic accommodations, in cooperation with the students themselves and their instructors. You can find more information about DSP, including contact information and the application process here: dsp.berkeley.edu. If you have already been approved for accommodations through DSP, please meet with me so we can develop an implementation plan together.

Students who need academic accommodations or have questions about their accommodations should contact DSP, located at 260 César Chávez Student Center. Students may call 642-0518 (voice), 642-6376 (TTY), or e-mail dsp@berkelely.edu.

Counseling and Psychological Services (CAPS)

As a student, you may experience mental health concerns or stressful events that can cause barriers to learning, participation and performance. The University offers a broad range of mental health services available on campus via the Counseling and Psychological Services (CAPS). There is no charge to get started, and all registered students can access services regardless of insurance. For details on the CAPS resources, see the CAPS website.

Prevention of Harassment and Discrimination

The University is committed to creating and maintaining a community dedicated to the advancement, application and transmission of knowledge and creative endeavors through academic excellence, where all individuals who participate in University programs and activities can work and learn together in an atmosphere free of discrimination, harassment, exploitation, or intimidation. For more information on related policies, resources and how to report an incident, see the Office for the Prevention of Harassment and Discrimination (OPHD) website.

Safety and Emergency Preparedness/Evacuation Procedures

As class activities may keep you on campus at night, check out the Cal's Night Safety Services website for details on the University's comprehensive free night safety services. See the Office of Emergency Management website for details on Emergency Preparedness/Evacuation Procedures. The UC Berkeley Police Department website also has information regarding safety on campus. Dial 510-642-3333 or use a Blue Light emergency phone if you need help.

Grievances

If you have a problem with this class, you should seek to resolve the grievance concerning a grade or academic practice by speaking first with the instructor. Then, if necessary, take your case to the SCET Chief Learning Officer, SCET Faculty Director, IEOR Department Chair, and to the College of Engineering Dean, in that order. Additional resources can be found on the Student Advocate's Office website and the Ombuds Office for Students website.

SCET Certificate in Entrepreneurship & Technology

This class can be used towards requirements to earn the SCET Certificate in Entrepreneurship & Technology. For details on the certificate requirements and other opportunities to engage with the Center, see the SCET website.

Additional Resources

See the Student Affairs website for more information on campus and community resources.

Center for Access to Engineering Excellence (CAEE)

The Center for Access to Engineering Excellence (227 Bechtel Engineering Center; https://engineering.berkeley.edu/student-services/academic-support) is an inclusive center that offers study spaces, nutritious snacks, and tutoring in >50 courses for Berkeley engineers and other majors across campus. The Center also offers a wide range of professional development, leadership, and wellness programs, and loans iclickers, laptops, and professional attire for interviews.

Counseling and Psychological Services
University Health Services Counseling and Psychological Services staff are available to you at the Tang Center (http://uhs.berkeley.edu; 2222 Bancroft Way; 510-642-9494) and in the College of Engineering (https://engineering.berkeley.edu/students/advising-counseling/counseling/; 241 Bechtel Engineering Center), and provide confidential assistance to students managing problems that can emerge from illness such as financial, academic, legal, family concerns, and more. Long wait times at the Tang Center in the past led to a significant expansion to include a 24/7 counseling line at (855) 817-5667. This line will connect you with help in a very short time-frame. Short-term help is also available from the Alameda County Crisis hotline: 800-309-2131. If you or someone you know is experiencing an emergency that puts their health at risk, please call 911.

The Care Line (PATH to Care Center)
The Care Line (510-643-2005; https://care.berkeley.edu/care-line/) is a 24/7, confidential, free, campus-based resource for urgent support around sexual assault, sexual harassment, interpersonal violence, stalking, and invasion of sexual privacy. The Care Line will connect you with a confidential advocate for trauma-informed crisis support including time-sensitive information, securing urgent safety resources, and accompaniment to medical care or reporting.

Ombudsperson for Students
The Ombudsperson for Students (102 Sproul Hall; 642-5754; http://students.berkeley.edu/Ombuds) provides a confidential service for students involved in a University-related problem (academic or administrative), acting as a neutral complaint resolver and not as an advocate for any of the parties involved in a dispute. The Ombudsman can provide information on policies and procedures affecting students, facilitate students' contact with services able to assist in resolving the problem, and assist students in complaints concerning improper application of University policies or procedures. All matters referred to this office are held in strict confidence. The only exceptions, at the sole discretion of the Ombudsman, are cases where there appears to be imminent threat of serious harm.

UC Berkeley Food Pantry
The UC Berkeley Food Pantry (#68 Martin Luther King Student Union; https://pantry.berkeley.edu) aims to reduce food insecurity among students and staff at UC Berkeley, especially the lack of nutritious food. Students and staff can visit the pantry as many times as they need and take as much as they need while being mindful that it is a shared resource. The pantry operates on a self-assessed need basis; there are no eligibility requirements. The pantry is not for students and staff who need supplemental snacking food, but rather, core food support.

Disclaimer: Syllabus/Schedule are subject to change.

Timeline

The link to the official Spring 2022 Timeline sheet can be found here.

01/18	Introduction + Team Building
01/25	Introduce the Challenges
	Meet the Partners
02/01	Alumni discussion + Customer discovery
02/08	History of Plastic + Human Centered Design
02/15	Chemistry of Plastic, Idea Generation + Iteration
02/22	Design Research + Mockups
03/01	Business Models in Innovation & Sustainability
03/08	Mid-Term rehearsal
03/08 - 03/15	Midterm Presentations
03/15	Prototyping
03/21 - 03/25	Spring Break - No Class
03/29	Testing Your Prototype/ Business Plans
04/05	Iterations & User/Customer Feedback
04/12	Innovation in a corporation
04/19	Rough Pitches + Feedback
04/26	Pitch Coaches + Demo Day Rehearsal
05/02 - 05/06	RRR Week
05/02 - 05/04	Demo Day
05/06	SCET's Collider Cup (TBD)

Week	Day/Date		Lecture Topic	Lecturer	Toolkit	Lecture Inputs	Student Inputs & Homework
Week	Tuesday						
Week	01/18		Introduction + Team Building	Mathieu	1 slide with the team building exercise	Syllabus overview, grading, intro about plastic, team building exercise	Get to know your team & join all communication channels --> fill out survey in order to help create teams
Week	01/25	**Introduction, kick off**	Introduce the Challenges	Recology virtual tour	1 slide with the challenges + questions to ask about the challenge (what we don't know...)	Introduce teams and challenges, discuss what they should be doing before their partner meeting	Research industry + partners, come up with questions - what do you know/don't know
Week			Meet the Partners	Partners	Challenge grid		
Week	02/01		Alumni discussion + Customer discovery	Alumni	Insights from alumni	Alumni fireside chat, customer discovery + what does a good interview look like	Establish stakeholder map, outreach & interview, create user personas
Week	02/08		History of Plastic + Human Centered Design	Derek Popple	Plastic background and insight on research	Design and plastic / User centric approach	Continue interviews, start identifying problems/researching what you don't know
Week	02/15		Chemistry of Plastic, Idea Generation + Iteration	Martin Mulvihull	Chemistry of plastic	The chemistry of plastic / diving deeper in the observation phase	Problem Settings
6	02/22	**Observation**	Problem setting (according to syllabus, Design Research + Mockups)	Imani	Contents from Sway	How to set your problem, change your perspective on the challenge	Group ideas + start to narrow down solutions - what will work and what won't
7	03/01		Presentation Design	Jan Veicht	Presentation design content	Team Time - Midterm/Gate 1 Prep (accordir	Idea generation + narrow to 3 solutions, really work on how those pan out
8	3/8		Mid-Term rehearsal	No speakers but rehearsal and creativity session		Rehearse your midterm / Feedback on the Gate #1 deliverable / Cross-pollination live creativity session	Teams each present 3 specific ideas or ways to approach the challenge -- with feedback, one is chosen for the rest of the semester
	03/08 - 03/15		Midterm Presentations	Partners			
9	3/15	**Ideation**	Prototyping	Makers Space	Solution grid / Prototyping toolkit	Reflection on your role and responsibility / Generating solutions / Creating a prototype and meaningful tests	Low - fidelity prototypes
10	03/21 - 03/25		Spring Break: No Class				
11	03/29		Solution prioritization	Chris DeAmritt	Prototyping strategy		Incorporate + iterate
12	4/5		Iterations & User/Customer Feedback	Natasha Podogova	Test & Learn approach	Test prototypes / Gather feedback	Create final versions / start drafts of final pitches
13	04/12		Innovation in a Corporation				
14	4/19	**Prototyping**	Rough Pitches + Feedback	No speakers		Iterate on prototypes and solution	Continue editing, working on final + getting info to fill holes in pitch + make tweaks
	4/26		Demo Day Rehearsal	Pitch Coaches	Pitch structure	Rehearse your pitch	Pitch coaches
15	05/02 - 05/06		***RRR Week***				Demo Day + Partner Meetings
	05/02 - 05/04		Demo Day	Partners			
	05/06		SCET's Collider Cup				