Introduction to Human-Centered Design

Course number: IEME E4200
Spring Semester 2017, second half (B Term), 5 consecutive Fridays
March 24 – April 28, 2017, [9:00 am- 12:00noon + 1:00 – 2:30pm]
1.5 credits, 1-2 hours homework assigned per session
Class will meet in CEPSR 750
Students are strongly encouraged to attend Columbia Maker Space safety training in advance of the class.

Today design has emerged as a key differentiator among the most valuable brands, products, and services in the world. The reason for this is customers, consumers, constituents, employees - the users - are now in control. Users are more discerning, they have more choices and are more comfortable exercising their choice. Users are demanding that their products and services work for them in the fullest sense: that their total experience is as good as it can be. Companies, other organizations and even governments are finding that they have to address the demands of their users, and do so with an unaccustomed urgency. If they do not, their users will exercise their choices and change brand, change behavior, or even change their government.

Human-Centered Design is an approach that puts the customer, consumer, citizen or employee at the center of the process and designs around them rather than asking human beings to adapt to technological, process, tradition or other constraints. By putting the customer at the center of the enterprise, you establish a shared meaning that brings teams together and guides their work. Human-centered design teams develop better products and services which are more likely to succeed.

The design challenge will be to work as a team to explore scenarios for how new markets will evolve over the next 5 years as a result of a new technology, and then develop a vision for a product or service to serve that new market. You will then backcast from your vision to an MVP (minimum viable product) you could launch within 6-12 months. Final presentations will include a prototype MVP. Over the course of five weeks you will learn human-centered design techniques to help you do this. An example of a scenario is the impact of autonomous vehicles on urban infrastructure.

Each class will meet for 4.5 hours divided into three 1.5 hour blocks with one 15-minute break and one 1-hour lunch break. Students will be expected to attend all parts of all sessions and participate in team activities, presentations, sharing and critique. Outside of class, each week there will be reading and homework assignments, as well as group project work.

This class is open to graduate students, as well as advanced undergraduate students, with permission of instructor. Students must apply for entry into the course.

Class Schedule, Topics and Assignments

March 24 – Session 1 – Framing Design

- Introduction to Human-Centered Design
- Ethnographic research
- Reframing and creating a well posed problem
• Immersion in a single-day design challenge from ideation to prototyping

Homework
• Conduct human centered design research with the prototypes developed in class. Summarize that research and use it to frame an interesting area for design. Post results to course site.
• Watch - Design Thinking: https://www.lynda.com/Creativity-tutorials/Welcome/433738/462405-4.html
• Reading Assignment - Harry West, A Chain of Innovation

March 31 – Session 2 – Understanding the Human in Human Centered Design
• Journey Maps
• Archetypes
• Ecosystems
• Scenario planning and Territories
• Immersion in the course design challenge

Homework
• Take refined territories and initial concepts areas from class, and return to potential users to define the user’s journey today and develop at least 2 archetypes of users. Post results to course site.
• Reading Assignment - Chris Bangle, How BMW turns Art into Profit, HBR - https://hbr.org/2001/01/how-bmw-turns-art-into-profit

April 7 – Session 3 – Prototyping and Iteration
• Prototype to learn
• Refining journeys, archetypes, ecosystems and territories
• Prioritization and evaluation
• Application of theory to the course design challenge

Homework
• It’s time to prototype your concept. Spend time between the classes creating and testing your prototype with potential users. Bring your prototype to share in class.
• Make a video of at least one user test of your prototype and come to class ready to discuss what you learned in that test. Post video to course site.

• Reading Assignment - Roger Martin, The Design of Business

April 14: (no class – Columbia Startup Festival – do consider attending)

April 21 – Session 4 – Venture Design

• Show video of test and prototype and pitch your idea as a business

• Exploitative vs. explorative business

• Venture design

• Pitching

• Application of theory to the course design challenge

Homework

• Prepare and practice your final **pitch**, and refine your **prototype** for the final presentation.

• Record one practice pitch **on video** and post to the course site.


April 28 – Session 5 - Final

• Team Presentations of Pitches and Prototypes

• Discussion of use of the tools taught in the course in business environments

• **Please note**: Session location will be at frog, 55 Prospect St, 7th Floor, Brooklyn NY 11201. Allow adequate time in your schedule to arrive at frog. Class will start ½ hour later than normal to accommodate your travel, and end ½ hour early to enable your return to campus.

• **Please note**: this session will be filmed with either video or still photography. Please indicate to the course TA if you are not comfortable with being filmed.

• **Please note**: frog requires visitors sign a Non-Disclosure Agreement for visits the ‘back of house’ working area of the studio. Students are not required to sign the NDA, but anyone who does not will be asked to remain in the public area of the studio to protect the confidentiality of our clients. (thanks!)

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**Grading**

Grading will be based on a combination of:

• 50% Final presentation
  (prototype + research and testing + viability of concept as a business + concept)
• 30% Class participation
• 20% Homework assignments

Readings
Sample of Reading Assignments that will be posted on CourseWorks:

• Chris Bangle, How BMW turns Art into Profit, HBR
• Roger Martin, The Design of Business
• Harry West, A Chain of Innovation

Instructors

• Harry West, CEO, frog
  Harry leads frog. He helps organizations see what people will want in the future and envision how to transform their business to make that future real.

• Turi McKinley, Executive Director, frog
  Turi leads the design research and co-creation practices in the NY studio. Globally she leads frogCamp, and partners closely with companies seeking to develop new skillsets and capabilities for human centered design and innovation.

• Ethan Imboden, VP Creative & Head of Venture Design, frog
  Ethan invests frog’s deep talent and diverse capabilities in the service of entrepreneurial efforts both large and small.

About frog
frog is a global design and strategy firm. We transform businesses at scale by creating systems of brand, produce and service that deliver a distinctly better experience. We strive to touch hearts and move markets. Our passion is to transform ideas into realities. We partner with clients to anticipate the future, evolve organizations and advance the human experience.

frog’s twelve studios across three continents house a creative community that includes interaction design, industrial design, visual design, design research, design technology, mechanical engineering, copywriting, film, software engineering, quality assurance, solutions architecture, business strategy, and program management. We take on the biggest challenges for many of the leading companies in the world. Our design vision and executional focus pull these organizations through large-scale transformations driven by new technology and changing customer expectations. We design new systems for these companies and work with them to build new capabilities.

https://www.frogdesign.com/

For more information, contact
Nicole Loo, nicole.loo@columbia.edu

Applications due by: January x at midnight
Applications should include information about student’s undergraduate or graduate status; school affiliation; 1-paragraph explanation of reasons for being interested in taking the course and commitment to attending all parts of all 5 sessions.