# Course Information

Course Year: Fall 2020  
Course Type: Lecture  
Credit Hours: 2-2-8 U  

Schedule: Friday 9:00-12:00 AM  
Location: Virtual (Zoom Meeting Information Below)  

Optional Weekly Lab: Time TBA

## Zoom Meeting Information

Join Zoom Meeting  
https://mit.zoom.us/j/99345677420?pwd=ZkREdUZmZlltR0FwUnl5STJ6SVZVdz09

Password: 2020

One tap mobile  
+16465588656,,99345677420# US (New York)  
+16699006833,,99345677420# US (San Jose)

Meeting ID: 993 4567 7420  
US : +1 646 558 8656 or +1 669 900 6833

International Numbers: https://mit.zoom.us/u/aAc9gBCko

Join by SIP  
99345677420@zoomcrc.com

## Instructor Information

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LinkedIn: https://www.linkedin.com/in/leemoreau/

## Teaching Assistant

Yaara Yacoby  
yacoby@mit.edu
### Course Description

**Using Human-Centered Design to Impact the World.**

The Human Factor in Innovation and Design Strategy will expose students to the core methodologies used in human-centered design with a focus on understanding how it can be applied to solve real-world challenges. In the course, students will hear leading design practitioners, thinkers, and business leaders explain how they approach design challenges, and how design brings value to human experiences and to the contemporary marketplace.

The whole point of human-centered design is to tame complexity, to turn what would appear to be a complicated tool into one that fits the task, that is understandable, usable, enjoyable. – Don Norman

Design research both inspires imagination and informs intuition through a variety of methods with related intents: to expose patterns underlying the rich reality of people’s behaviors and experiences, to explore reactions to probes and prototypes, and to shed light on the unknown through iterative hypothesis and experiment. – Jane Fulton Suri

Get closer than ever to your customers. So close that you tell them what they need well before they realize it themselves. – Steve Jobs

Human-centered design has been practiced for decades, but its design research methods have only recently become refined and codified by thought leaders and scholars (Donald A. Norman, Jane Fulton Suri, Roger Martin), design innovation practices (IDEO, Continuum, and Frog) and within academic institutions (Rotman School of Management, the IIT Institute of Design, and Stanford’s d.school). Compared to most artistic and design practices, this is relatively new creative territory…and its rules are still being written.

This course will serve as an introduction to human-centered design through both its theory and its practice. The course will meet once per week in a single 3-hour session. One half of each class will feature a lecture presentation by the instructor or an inspirational guest speaker. A typical guest lecture will include a brief introduction by the instructor to help provide context, a 30-45 minute presentation by the guest speaker, followed by a moderated discussion between the guest and the students. The other half of each class will be a group working session intended to introduce human-centered design methods, present case studies, review weekly assignments, and allow for critique with the instructor(s).

*Inspiration and provocation.*

The course’s four multi-week assignments are meant to provide students with an opportunity to experience the primary aspects of the human-centered design process first hand, engaging from the early stages of in-context qualitative research, through envisioning, to iteratively prototyping and testing new experiences.

**Design Problems**
- Exercise 1: Preparing for Learning – 2 weeks
- Exercise 2: Learning (Field Research) – 2 weeks
- Exercise 3: Envisioning Experiences – 2 weeks
- Exercise 4: Prototyping to Learn – 3 weeks

To succeed in this course, students will need to demonstrate the curiosity, persistence, and craft necessary to engage in human-centered design. Students will frequently be asked to work in teams of 2-4 people, therefore effective collaboration and teamwork will be necessary to fulfill the course requirements.
**4.051 THE HUMAN FACTOR IN INNOVATION AND DESIGN STRATEGY**

<table>
<thead>
<tr>
<th>Specific Area of Focus</th>
<th>Live Performances: Service and Experience Design</th>
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<tbody>
<tr>
<td></td>
<td>A collaboration with Live Nation and the Rockland Trust Bank Pavilion</td>
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For the last 20 years, the growth of digitally-enabled service experiences appeared to show no signs of stopping, especially as the widespread digitization of physical spaces and objects began to erase the subtle differences between the physical and the virtual. Uber, Airbnb, WeWork, and Spotify are all companies that rose during this time and helped redefine our interactions and our associations with the physical world and with each other. Activities like waiting, possessing, using, buying, and even being were all redefined through our physical/digital engagement flow. For example, watching that little car icon move while you’re sitting in the backseat became a “normal” way to experience your commute, but that activity also redefined the relationship between the driver and the passenger (or the driver and “the driven”). That experiential transformation, and every other one like it, has social and political implications that need to be explored as well.

So, what about all of those experiences that struggled to bridge the gap between physical and digital? Right now, COVID-19 has changed our perspectives on all of this, and it has made the relationship (or separation) between the digital and the physical more apparent than it has felt in a generation. Even the word “distancing” has regained its original meaning, more physical than metaphysical.

In this process-driven studio, we are going to apply this renewed perspective onto some of those service experiences whose physical embodiments just never bridged the digital divide, and we will also look for ways to transition services effectively in our new COVID-19 context. These experiences might be digitally-enabled, but they will still exist in our physical world and will be burdened by the challenges that our COVID reality has placed on all physical interactions. Along the way, we will also consider the sustainability and social implications of these experiences, using this unprecedented period as a critical moment to address some of the shortcomings in the way we created these experiences in the past.

For this course, our partner (or client) will be with one of the world’s largest live music and events promoters Live Nation and we will specifically focus our attention on the Rockland Trust Bank Pavilion, their venue on the Boston waterfront. We will apply our service and experience design explorations to a range of different activities related to this venue, from ticketing, concessions, queuing, and parking to dancing, singing, food & beverage, and the green room experience. As a class, we will not only be looking for ways to improve the overall experience or increase safety, but we will ask ourselves critical questions related to the feasibility, desirability, and viability of our concepts and try to understand how our solutions will impact the larger aggregate experience.

This collaboration will allow us to have access to real-world constraints, actual respondents (including facility staff and concert attendees), and feedback on our work, but it will also require strict adherence to research protocols and respect for the venue’s time and resources. Along the way, our partner (our client) may also provide additional requirements, areas of focus, and feedback for students during the semester as the project’s develop. Please honor these requests within the development of your design research process.
### COVID-19 Implications

This is an unprecedented time for everyone, though not everyone is impacted in the same way. To try to create the most equitable context for learning in this class, some adjustments that have made to the course expectations, schedule, resources, and tools:

#### Course Schedule

The course will meet once per week during our officially scheduled class time on Fridays from 9:00 to 12:00 Eastern time. (We will discuss this timing together in the first class session.) Each class session will begin 5 minutes after and end 5 minutes before the official times. Additionally, each session will be recorded, and relevant portions of these recordings will be posted to enable asynchronous learning of course content.

#### Miro Collaboration Tool

In addition to using our Canvas site for posting lectures, assignments, readings, and announcements, we will be using Miro extensively throughout the semester for conducting ethnographic research, analysis, brainstorming, and team interaction. Miro is user-friendly and students will spend time experimenting in the first couple of weeks to get everyone comfortable with the platform.

Though not a requirement, students are encouraged to apply for their own free Miro Education Account here: [https://miro.com/education](https://miro.com/education)

To apply for this account, you will need to provide proof of your student status (a photo of your student ID) and confirmation of MIT's Accreditation, or similar confirmation from your university.

#### COUHES Human Subjects Training

All students will be required to take MIT’s Human Subjects Training (or similar program) before the second week of class: [http://couhes.mit.edu/training-research-involving-human-subjects](http://couhes.mit.edu/training-research-involving-human-subjects)

#### Prototyping and Fabrication Resources

Though there are no fabrication requirements for this course, students are encouraged to “think-through-making” by creating rough sketches and prototypes throughout the creative process. It is understood that many students will not have access to traditional lab tools and supervision, and therefore students will be supported in finding appropriate means of exploration within their own living/working situations.

Regardless of the environmental constraints, students are encouraged to consult MIT’s Project Manus and MIT’s Department of Environment, Health and Safety (MIT EHS) if they have questions about fabrication, materials, and safety for either lab-based or remote making activities.

MIT EHS has also created this helpful website for workplace ergonomics resources, assessment tools, and safety guidance for remote work.
Evaluation Criteria | Requirements
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Each student is expected to attend all lectures and spend approximately 6 hours per week on assignments and projects outside of class. Readings are required when they are in the weekly calendar.

Grading Criteria
- Attendance for all lectures is mandatory. (Recordings will be available.)
- Most of the assignments in this course will be iterative in nature. Students will be expected to take risks, attempt new things, work in new ways, and play out a number of scenarios before arriving at the optimal solution. The design process takes work.
- You are expected to present substantial new work at each class. Make progress every week.
- The design process is progressive in nature. Late work is not acceptable and will affect grading.

Students will be graded on originality of concept, quality of design work, clarity of communication, participation in class activities and lecture discussions, improvement during the course, ability to work as a team, and helpfulness to other students in class.

For students, the final grade is based on:

30% Class Attendance and Participation (Showing up and contributing to the course’s positive chemistry.)
30% Communication of Concepts and Ideas (Clarity of thought and communication.)
20% Conceptualization and Execution of Design (Great ideas rendered beautifully.)
20% Teamwork and Collaboration (Working well with others.)

Note: For assignments or projects requiring teamwork, each student will be graded individually based on their performance.
Course Schedule:

The course is based upon a 14-week semester and breaks down as follows. Each exercise identifies its particular meeting schedule and work requirements:

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<tr>
<th>Week</th>
<th>Core Lectures</th>
<th>Exercises</th>
<th>Guest Speakers</th>
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<td>Week 1</td>
<td>Introductory Lecture</td>
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<td>Week 2</td>
<td>Lecture 1: Empathize</td>
<td>Assign Exercise 1: Preparing for Learning</td>
<td>Ela Ben-Ur, Innovators' Compass</td>
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<td>Week 3</td>
<td>Lecture 2: Analyze</td>
<td>Exercise 1 Due</td>
<td>Q&amp;A with Jason Sandoval, Live Nation</td>
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<td>Week 4</td>
<td>Lecture 3: Envision</td>
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<td>Week 5</td>
<td>Lecture 4: Prototype</td>
<td>Assign Exercise 2: Learning (Field Research)</td>
<td>George Aye, Greater Good Studio</td>
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<tr>
<td>Week 6</td>
<td>Lecture 5: Test</td>
<td>Exercise 2 Due</td>
<td>Prajakta Kulkami, EPAM Continuum</td>
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<td>Week 7</td>
<td>NO CLASS</td>
<td>Thanksgiving Weekend</td>
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<td>Week 8</td>
<td>Assignment Deadline: Week 4</td>
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<td>Week 9</td>
<td>Lecture 6: Envisioning</td>
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<td>Judith Anderson, Mass College of Art</td>
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<tr>
<td>Week 10</td>
<td>Lecture 7: Test</td>
<td>Exercise 3 Due</td>
<td>Wayne Suijer Matamoros, Fjord/NYU</td>
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<tr>
<td>Week 11</td>
<td>Assignment Exercise 4</td>
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<td>Week 12</td>
<td>Assignment Exercise 5</td>
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<td>Week 13</td>
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<tr>
<td>Week 14</td>
<td>Assignment Exercise 7</td>
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Note: Guest Lectures Dates and Times are subject to chance due to speaker availability.

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Week 1  
Friday 9/04
Introductory Lecture: Understanding Human-Centered Design
Readings:

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Week 2  
Friday 9/11
Lecture 1: Empathize
Readings:

Assign Exercise 1: Preparing for Learning (Human Understanding) – 2 weeks
Assignment Deadline: Week 4
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Week 3
Friday 9/18

Guest Speaker: Ela Ben-Ur, Innovators’ Compass and Olin College (Human-Centered Innovation)

Readings:

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Week 4
Friday 9/25

Lecture 2: Analyze

Readings:

Q&A with Jason Sandoval, Live Nation

Group Critique: Exercise 1: Preparing for Learning (Human Understanding)

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Week 5
Friday 10/02

Guest Speaker: George Aye, Greater Good Studio (Social Innovation)

Readings:

Assign Exercise 2: Learning (Field Research) – 2 weeks
Assignment Deadline: Week 7

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Week 6
Friday 10/09

Lecture 3: Envision

Readings:

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Week 7
Friday 10/16

Guest Speaker: Prajakta Kulkarni, EPAM Continuum (Innovation Capability in Organizations)

Readings:

Group Critique: Exercise 2: Learning (Field Research)

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Week 8
Friday 10/23

Lecture 4: Prototype

Readings:

Assign Exercise 3: Envisioning Experiences – 2 weeks
Assignment Deadline: Week 10

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Week 9
Friday 10/30

Guest Speaker: Judith Anderson, Mass College of Art

Readings:

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Week 10  Lecture 5: Test
Friday 11/06
Readings:

Group Critique: Exercise 3: Envisioning Experiences

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Week 11  Guest Speaker: Wayne Suiter Matamoros, Fjord and NYU (Service Design and Innovation Consulting)
Friday 11/13
Readings:

Assign Exercise 4: Prototyping to Learn – 3 weeks
Assignment Deadline: Week 14

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Week 12  Group Project Feedback Sessions
Friday 11/20
Readings:

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Week 13  NO CLASS – THANKSGIVING RECESS
Friday 11/27

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Week 14  Final Presentations: Exercise 4: Prototyping to Learn
Friday 12/04

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Notes:  There is no final exam for this course.
Guest lectures are subject to change based on speaker availability.
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Additional Readings:

- https://www.90yearsofdesign.philips.com
- Weinschenk, Susan M. 100 Things Every Designer Needs to Know About People. New Riders, 2011.


- Patnaik, Dev. Wired to Care: How Companies Prosper When They Create Widespread Empathy. FT Press, 2009.

- Stickdorn, Marc. This is Service Design Thinking: Basics, Tools, Cases. Wiley, 2012.

- Govindarajan, Vijay and Trimble, Chris. Reverse Innovation: Create Far From Home, Win Everywhere
- Patnaik, Dev. Wired to Care: How Companies Prosper When They Create Widespread Empathy
- Philips Design Probes: https://www.90yearsofdesign.philips.com/article/67
- Coming: A Day Made of Glass 2: https://youtu.be/iZkHpNnXLB0
- IDEO Automobile: https://youtu.be/hqbsL825U7c


