

4.S00 THE HUMAN FACTOR IN INNOVATION AND DESIGN STRATEGY



Julian Opie. Walking in the rain, London 2015 (detail)

National Gallery of Victoria, Melbourne © Julian Opie

SYLLABUS

Course Information	Course Year: Fall 2017 – Design Minor Course Type: Lecture Credit Hours: 3-0-9 U Schedule: Friday 9:00-12:00 Location: 3-442 Prerequisites/Co-requisites (if any): None
Instructor Information	Instructor Name: Lee Moreau Instructor Email Address: LMoreau@MIT.edu Twitter: @moreaulee

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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 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: Building Empathy (Human Understanding) – 2 weeks

Exercise 2: Analyzing Field Research – 2 weeks

Exercise 3: Envisioning Experiences – 3 weeks

Exercise 4: Prototyping to Learn – 3-4 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 team work will be necessary to fulfill the course requirements.

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Evaluation Criteria	<p><u>Requirements</u></p> <p>The readings are highly recommended, but not required. Each student is expected to attend all lectures and spend 3-6 hours per week on assignments and projects outside of class.</p> <p><u>Grading Criteria</u></p> <ul style="list-style-type: none">• Attendance for all lectures is mandatory.• 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. <p>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.</p> <p>For students, the final grade is based on:</p> <p>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.)</p> <p>Note: For assignments or projects requiring teamwork, each student will be graded individually based on their performance.</p>
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Course Schedule:

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

Week 1 Friday 9/08	Introductory Lecture: Understanding Human-Centered Design Readings: <ul style="list-style-type: none">• Brown, Tim. Design Thinking. Access, IDEO.org, August, 2008.• Polaine, Andy and Løvlie, Learns, and Reason, Ben. Service Design: From Insight to Implementation. New York: Rosenfeld Media, 2013.• Martin, Roger. The Design of Business: Why Design Thinking is the Next Competitive Advantage. Cambridge, Harvard Business Review Press, 2009.• LUMA Institute. Innovating for People Handbook of Human-Centered Design Methods. Pittsburgh, LUMA Institute, 2012.• Lahey, Jessica. "How Design Thinking Became a Buzzword at School." Access, The Atlantic, January 4 2017.• Martin, Roger; Brown, Tim; Berger, Shoshana. "Capitalism Needs Design Thinking." Access, Harvard Business Review, December 8 2014. Assign Exercise 1: Building Empathy (Human Understanding) – 2 weeks <i>Assignment Deadline: Week 3</i>
----- Week 2 Friday 9/15	Lecture 1: Empathize Readings: <ul style="list-style-type: none">• Chipchase, Jan. Hidden in Plain Sight: How to Create Extraordinary Products for Tomorrow's Customers. HarperCollins Business, 2013.• Fulton Suri, Jane and IDEO. The Little Book of Design Research Ethics. Boston, IDEO, 2016• Manning, Harley and Bodine, Kerry, Outside In: The Power of Putting Customers at the Center of Your Business. Seattle, New Harvest, 2012.• Portigal, Steve. Interviewing Users: How to Uncover Compelling Insights. New York: Rosenfeld Media, 2013.• IDEO.org. The Field Guide to Human-Centered Design. Design Kit, 2015.• Govindarajan, Vijay and Trimble, Chris. Reverse Innovation: Create Far From Home, Win Everywhere. Harvard Business Review Press, 2012.• Patnaik, Dev. Wired to Care: How Companies Prosper When They Create Widespread Empathy. FT Press, 2009.• Kolko, John. Well-Designed: How to Use Empathy to Create Products People Love. Harvard Business Review Press, 2014. Work Session
----- Week 3 Friday 9/22	Lecture 2: Analyze Readings: <ul style="list-style-type: none">• Kalbach, James. Mapping Experiences: A Complete Guide to Creating Value through Journeys, Blueprints, and Diagrams. O'Reilly Media, 2016.• Dubberly, H. and Evenson, S. Designing for Service: Creating an Experience Advantage. Access, Dubberly Design, February 2010.• Stickdorn, Marc. This is Service Design Thinking: Basics, Tools, Cases. Wiley, 2012.• Lichaw , Donna. The User's Journey: Storymapping Products That People Love. Rosenfeld Media, 2016. Group Critique: Exercise 1: Building Empathy (Human Understanding)
----- Week 4 Friday 9/29	NO CLASS – STUDENT HOLIDAY

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Week 5
Friday 10/06

Guest Lecture: TBD Ethnographic Research

Readings:

- IDEO.org. The Field Guide to Human-Centered Design
- 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
- Helfand, Jessica. Design: The Invention of Desire. New Haven, Yale University Press, 2016.
- Heller, Steven and Vienne, Veronique. Citizen Designer: Perspectives on Design Responsibility. New York, Allworth Press, 2003.
- Shea, Andrew. Designing For Social Change: Strategies for Community-Based Graphic Design. Princeton, Princeton Architectural Press, 2012.

Assign Exercise 2: Analyzing Field Research – 2 weeks
Assignment Deadline: Week 7

Week 6
Friday 10/13

Guest Lecture: TBD Service and Systems Design

Readings:

- Brown, Tim. Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation. HarperCollins Business, 2009.
- Martin, Roger. The Opposable Mind: How Successful Leaders Win Through Integrative Thinking. Harvard Business Review, 2009.

Work Session

Week 7
Friday 10/20

Lecture 3: Envision

Readings:

- Dahlström, Anna. Storytelling in Design: Principles and Tools for Defining, Designing, and Selling Multi-Device Design Products. O'Reilly Media, 2017.
- Philips Design Probes: <https://www.90yearsofdesign.philips.com/article/67>
- Fisher-Price: The Future of Parenting: https://youtu.be/2BPidRZ_F5Y
- Microsoft: Productivity Future Vision: <https://youtu.be/wtFdreZB94>
- Corning: A Day Made of Glass 2: <https://youtu.be/jZkHpNnXLB0>
- IDEO Automobility: <https://youtu.be/hqbsL825U7c>

Group Critique: Exercise 2: Analyzing Field Research

Week 8
Friday 10/27 (Continuum)

Lecture 4: Prototype

Readings:

- Hallgrimsson, Bjarki. Prototyping and Modelmaking for Product Design. London, Laurence King Publishing, 2012.
- Burry, Jane and Burry, Mark. Prototyping for Architects: Real Building for the Next Generation of Digital Designers. New York, Thames & Hudson, 2016.
- McElroy, Kathryn. Prototyping for Designers: Developing the Best Digital and Physical Products. O'Reilly Media, 2016.
- Freiberg, Kevin and Freiberg, Jackie. Nuts!: Southwest Airlines' Crazy Recipe for Business and Personal Success. Knutsford, Texere, 2001.

Tour of Continuum's studio in Boston

Assign Exercise 3: Envisioning Experiences – 3 weeks
Assignment Deadline: Week 11

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Week 9
Friday 11/03

Guest Lecture: TBD Product Design

Readings:

- Norman, Donald A., *The Design of Everyday Things*. New York, Basic Books, 2013.
- Hara, Kenya. *Designing Design*. Baden, Lars Müller, 2015.
- Lehrer, Jonah. *Imagine: How Creativity Works*. Boston, Houghton Mifflin, 2012.
- Crawford, Matthew. *Shop Class as Soulcraft: An Inquiry into the Value of Work*. Penguin Books, 2010.

Note: The instructor will be in Madrid this week presenting a lecture.

Work Session

Week 10
Friday 11/10

NO CLASS – VETERANS DAY

Tuesday 11/14
2:00 PM

Optional Guest Lecture: Don Norman

Prof. and Director, DesignLab, UC San Diego, co-founder of the Nielsen Norman Group
“People-Centered Design for Complex Systems”

Location: MIT IDC, 265 Massachusetts Ave., N52–387, Cambridge

Week 11
Friday 11/17

Guest Lecture: TBD Experience Design

Readings:

- Pine II, B. Joseph and Gilmore, James H. *The Experience Economy*. Cambridge, Harvard Business Review Press, 2011.
- Polaine, Andy and Løvlie, Leans, and Reason, Ben. *Service Design: From Insight to Implementation*. New York: Rosenfeld Media, 2013.
- Neumeier, Marty. *The Brand Gap: How to Bridge the Distance Between Business Strategy and Design*. San Francisco, New Riders, 2005.
- Stewart, Thomas A. and O'Connell, Patricia. *Woo, Wow, and Win: Service Design, Strategy, and the Art of Customer Delight*. HarperBusiness, 2016.

Group Critique: Exercise 3: Envisioning Experiences

Assign Exercise 4: Prototyping to Learn – 3-4 weeks

Assignment Deadline: Final Exam TBD

Week 12
Friday 11/24

NO CLASS – THANKSGIVING RECESS

Week 13
Friday 12/01

Lecture 5: Test

Readings:

- Sharon, Tomer. *Validating Product Ideas: Through Lean User Research*. New York, Rosenfeld Media, 2016.
- Petroski, Henry. *Success through Failure: The Paradox of Design*. Princeton, Princeton University Press, 2008.
- Lombardi, Victor. *Why We Fail: Learning from Experience Design Failures*. New York, Rosenfeld Media, 2013.
- Petroski, Henry. *To Forgive Design: Understanding Failure*. Cambridge, Belknap Press, 2012.

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Week 14
Friday 12/08

Guest Lecture: TBD Theatrical Prototyping

Readings:

- Forsythe, William. William Forsythe: The Fact of Matter. Kerber Verlag, Berlin, 2016.
- Blom, Lynne Anne and Chaplin, L. Tarin. The Intimate Act of Choreography. Pittsburg, University of Pittsburgh Press, 1982.

Work Session

Week 15
Date TBD

FINAL EXAM

Final Presentations: Exercise 4: Prototyping to Learn

Additional Readings:

- Ries, Eric. The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses. Crown Publishing Group, 2011.
- Govindarajan, Vijay and Trimble, Chris. The Other Side of Innovation: Solving the Execution Challenge. Cambridge, Harvard Business Review, 2010.
- Thompson, Rob. Manufacturing Processes for Design Professionals. New York, Thames & Hudson, 2007.
- Lafley, A.G. Playing to Win: How Strategy Really Works. Cambridge, Harvard Business Review, 2013.
- Bierut, Michael. Seventy-nine Short Essays on Design. Princeton Architectural Press, 2012.
- Kelley, Tom. The Art of Innovation. Crown Business, 2001.
- Millman, Debbie and Walker, Rob. Brand Thinking and Other Noble Pursuits. Allworth Press, 2015.
- Lockwood, Thomas. Design Thinking: Integrating Innovation, Customer Experience, and Brand Value. Allworth Press, 2009.
- Govindarajan, Vijay and Trimble, Chris. How Stella Saved the Farm: A Tale About Making Innovation Happen. St. Martin's Press, 2013.
- Moggridge, Bill. Designing Interactions. The MIT Press, 2007.
- <https://www.90yearsofdesign.philips.com>
- Weinschenk, Susan M. 100 Things Every Designer Needs to Know About People. New Riders, 2011.
- Berger, John. Ways of Seeing. Penguin Books, 1990.
- Burnett, Bill and Evans, Dave. Designing Your Life: How to Build a Well-Lived, Joyful Life. Knopf, 2016.