ILLINOIS

DTX 251
Intro to Design Thinking

Course Information

- Duration: Full Semester
- Format: In-person
- Credit Hours: 3 Credit Hours

Course Description

Human-Centered Design (HCD) is a problem-solving approach that identifies the unmet needs of a population in order to collaboratively and iteratively develop solutions. Research has continuously shown that learning about and applying HCD processes helps develop 21st-century mindsets such as human-centeredness, metacognition, collaboration, communication, creativity, and experimentation. These mindsets are necessary to effectively solve today's personal and work problems.

This course provides a hands-on introduction to the fundamentals of Design Thinking and Human-Centered Design. In this course, you will analyze and reflect on design challenges that were completed following the Human-Centered Design approach. You will also experience the human-centered design approach while working collaboratively on a semester-long project. As you work on the project, you will learn methods to perform initial research and project scoping, conduct interviews, create journey maps and wireframes, brainstorm and propose ideas, and plan for prototyping. You will also learn, implement, and develop storytelling and critiquing skills.

Learning Outcomes

In this course, students will:

- Accurately define Human-Centered Design and its two key components: Empathy and Iteration.
- Acquire and apply knowledge of performing the major processes of human-centered design to complete a design challenge.
- Develop storytelling and critique skills.

General Education

No.

Prerequisites

None.

Course Materials

Learning Management System (LMS)

Canvas:https://canvas.illinois.edu

- All readings, assignments, discussion boards, and announcements will be posted here

Course Readings

Brown, T. (2008). Design Thinking. Harvard Business Review, 86(6), 1–9.

Pande, S., Kenjale, A., Mathur, A., Kumar, P. D. A., & Mukherjee, B. (2020). Redesign of the Walking Stick for the Elderly Using Design Thinking in the Indian Context. In Innovative Product Design and Intelligent Manufacturing Systems (pp. 29-39). Springer, Singapore. Pressman, A. (2019). Design Thinking: A Guide to Creative Problem Solving for Everyone. Routledge.

Lawrence, L., Shehab, S., Tissenbaum, M., Rui, T., & Hixon, T. (2021, April). Human-Centered Design Taxonomy: Case study application with novice, multidisciplinary designers. Poster to be presented at the American Education Research Association Virtual Conference.

Sonney, J., Duffy, M., Hoogerheyde, L. X., Langhauser, E., & Teska, D. (2019). Applying human-centered design to the development of an asthma essentials kit for school-aged children and their parents. Journal of Pediatric Health Care, 33(2), 169-177.

Materials

Laptop for design activities and digital collaboration

Equipment

Students are required to bring a laptop, iPad, or another digital device (excluding phones) to each class session, as these will be necessary for completing in-class assignments and activities.

Software

Microsoft Office and/or Google Suite, Miro, Figma, and Canvas (accessed via free student accounts or campus lab resources)

Course Requirements and Policies

Grading Breakdown

Instructional Activity	Percent
Presentation 1	20%
Presentation 2	20%
Presentation 3	20%
Presentation 4	20%
Qualitative Understanding	20%
Total	100%

Grading Criteria

As you can see in the table above, 80% of your grade is made up of 4 presentations. You and your group will participate in four presentations.

One week before each presentation, a scoring checklist that outlines expectations from each presentation will be shared with you and your group. Common expectations are clarity, organization, and demonstration of equal contribution to the group's work. In the presentation grade, you will be rated on your participation and group work by your peers collectively.

The final 20% of your grade will be based on your response to questions about the required reading and the class retrospective that will be held on the final day of class. The questions will be posted to canvas based on the schedule outlined below.

Late Assignment Policy

[[[[[Outline your course policy on late assignments (e.g., If you are unable to meet a particular deadline, it is your responsibility to make prior arrangements with the instructors for that given week. Otherwise, work submitted later than # of hours or days will receive a %/# letter grade deduction/penalty, and work submitted later than # of days will not be considered for grading unless consent has been given by the instructor.]]]]]

Class Attendance

Unless otherwise stated, attendance at regular in-person or virtual class meetings is required. If you think that you will not be able to attend one or more of our class meetings, please let me know in advance. Because this course is heavily dependent on

the work that you will begin with your teammates during class meetings, you can only miss one class before you fall behind.

If you get ill, have a family emergency, feel emotionally run-down, have technology problems, lose the internet, whatever, let me know and take the time you need to feel better. (I do NOT need any documentation of illness from a doctor- I trust you.) Please prioritize your well-being over this class, if you need to.

All this being said, please keep in mind two things:

1. Not attending class and missing deadlines will mean that the work you produce by the end of the semester will be weaker. Staying on schedule as much as possible will set you up to succeed.
2. We'll be doing a substantial amount of in-class and/or group work. Getting behind on deadlines puts you and/or your whole group at risk; be sure to communicate with your group members regularly to discuss how to coordinate with and support each other throughout the semester.

Participation

You are welcome to participate in this class in whatever way is most useful to you. In “typical” college classrooms, participation looks like active verbal contributions in large group conversations during class meetings, but I understand that this model doesn’t fit everyone’s personality type, abilities, and cultural norms. If it works better for you to listen attentively and take notes during class, do that. Remember, this class relies heavily on your work in your group. Please, do your best to actively participate in group discussions and activities. Unless I contact you with concerns about your participation, you can assume that you are doing fine and earning all the possible participation points.

Final Letter Grades

[[[[[Include information about how final letter grades are determined. Additional details on how to approach grade discrepancies or other questions about final grades may be included in this section.]]]]]

Grading Scale

[[[[[Include a grading scale (percentages and/or points) and the letter grade equivalencies. The *example* below could be adapted, used as a guide, or replaced.]]]]]

Percentage	Letter Grade
97 - 100.00	A+
93 - 96	A
90 - 92	A-
87 - 89	B+

Percentage	Letter Grade
83 - 86	B
80 - 82	B-
77 - 79	C+
73 - 76	C
70 - 72	C-
67 - 69	D+
63 - 68	D
60 - 63	D-
59 and below	F

Course Schedule/Outline

Week	Weekly Focus	Topics	Instructional Activities
Week 1 ([[[[[Date – Date]]]]])	Introduction, Syllabus, Decision Jam Activity	• Introduction, Syllabus,Decision JamActivity	**Week Overview:** We will have lectures on the Understand phase and teach methods for building empathy, such as personas, journey maps, and interviews. We will be assigned groups and will start on a project that will be developed over the entire course
Week 2	Understand	• Understand	**Week Overview:** We will have lectures on the Understand phase and teach methods

Week	Weekly Focus	Topics	Instructional Activities
			for building empathy, such as personas, journey maps, and interviews. We will be assigned groups and will start on a project that will be developed over the entire course
Week 3	Understand	• Brown, T. (2008). Design Thinking. *Harvard Business Review*, *86*(6), 1–9. • Pressman, A. (2019). Design thinking overview. In *Design Thinking: A Guide to Creative Problem Solving for Everyone* (pp. 3-12).	**Assignment:** Question set #1 is available in canvas. Questions cover required readings from week 3. - Due by week 5 **Week Overview:** This week will have shorter lectures focusing on empathy activities such as interviews, surveys, etc
Week 4:	Synthesize & Ideate		**Week Overview:** We will learn how to synthesize data received from interviews, surveys, etc., and use it in ideation activities. Ideation activities are used to come up with ideas to our problem
Week 5:	Presentions 101, Prototype & Experiment	• Lawrence, L., Shehab, S., Tissenbaum, M., Rui, T., & Hixon, T. (2021, April). *Human-Centered*	**Assignments:** Question set #1 due in canvas by EOD 9/24 Question set #2 is

Week	Weekly Focus	Topics	Instructional Activities
		Design Taxonomy: Case study application with novice, multidisciplinary designers. Poster to be Presented at the American Education Research Association Virtual Conference. • Pressman, A. (2019). Building blocks of design thinking: Information gathering. In *Design Thinking: A Guide to Creative Problem Solving for Everyone* (pp. 13-23). Routledge.	available on Canvas. Questions cover required readings from week 5. - Due by week 7 **Week Overview:** This class will have a short lecture and overview on best practices for your presentations. We will discuss and implement various prototyping methods and ways to experiment to get data based on our prototypes.
Week 6	**Presentation 1**		**Presentation 1**
Week 7	Understand & Synthesize	• Pressman, A. (2019). Tools and strategies. In Design Thinking: A Guide to Creative Problem Solving for Everyone (pp. 51-62). Routledge.	**Assignments:** Question set #2 is due in canvas by EOD Oct 8 Question set #3 is available in canvas. Questions cover required readings from week 7. - Due by week 9 **Week Overview:** Continued lecturing and hands-on work

Week	Weekly Focus	Topics	Instructional Activities
			with Understand and Synthesize
Week 8	Ideate & Prototype & Experiment		**Week Overview:** Continued lecturing and hands-on work with Ideation/Prototyping /Experimentati on
Week 9	**Presentation 2**		**Assignments:** Question set #3 due in canvas by EOD Oct 22 **Presentation 2**
Week 10	Understand & Synthesize	• Pressman, A. (2019). Building blocks of design thinking: Problem analysis and definition. In *Design Thinking: A Guide to Creative Problem Solving for Everyone* (pp. 23-27). Routledge.	**Assignments:** Question set #4 is available in canvas. Questions cover required readings from week 9.- Due by week 12 **Week Overview:** Continued lecturing and hands-on work with Understand and Synthesize
Week 11	Ideate & Prototype & Experiment		**Week Overview:** Continued lecturing and hands-on work with Ideation/Prototyping /Experimentati on
Week 12:	**Presentation 3**		**Assignments:** Question set #4 due in canvas by EOD 11/19 **Presentation 3**

Week	Weekly Focus	Topics	Instructional Activities
Week 13:	Understand & Synthesize		**Week Overview:** Continued lecturing and hands-on work with Understand/Synthesize
Week 14 - Thanksgivin g Break	Ideate & Prototype & Experime nt		**Week Overview:** Continued lecturing and hands-on work with Ideation/Prototyping /Experimentati on
Week 15:	**Presentation 4**		**Assignments:** Presentation 4
Week 16	Project + Class Retrospective		**Assignments:** Class participation in Retrospective (This is part of your Qualitative Understanding Percentage)