DTX 451 Introduction to Design Thinking
FA2024

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

- 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.

Readings/Required Texts

- 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.

Evaluation

1. 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.

2. 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.

3. **Classroom conduct**

Section 1-201(b) of the UIUC Student Code states that "It is expected that students enrolled in

the university will conduct themselves at all times in accordance with accepted principles of responsible citizenship and with due regard for the rights of others." Additionally, my goal is to run an inclusive, safe, and accommodating classroom and to provide a supportive learning environment for all students. I have a zero-tolerance policy for attacks of a personal nature or statements denigrating another on the basis of race, sex, religion, sexual orientation, age, linguistic background, ability or disability, physical appearance, or national/regional origin. Those who engage in such behaviors will be asked to leave the classroom and counted absent for the day.

I respect each student's right to respond to the name and pronoun of their choice and the right of all people to be treated with dignity and respect. If you see a way to make the class feel more inclusive, safe, and accommodating, I encourage you to share your ideas with me.

4. Strategies for success

Your success is important to me. Quality and growth demand effort and commitment. I suggest the following strategies not just in this class but in every class you embark on at UIUC:

(1) Make every effort to engage in the course content.
(2) When doing collaborative work, schedule time for it.
(3) Be accountable to yourself and your working group. Design challenges are inherently collaborative. Rely on one another and be there for each other.
(4) Ask questions (in class and/or via email) whenever you need further insight. I welcome your questions, feedback, and suggestions. Developing a dialogue with your instructors should be a top priority for all students.
(5) If you have trouble understanding or completing the course material, please consult me ASAP. I can be reached by email to schedule an appointment.
(6) Observe, share, discuss, and debate ideas. Please think of your instructor and fellow students as your colleagues.
(7) Cultivate an open mind, a desire to learn, and a passion for excellence.
(8) Take ownership. You are in control of your destiny. If you have an outcome that you didn't expect or wasn't to your expectations, ask yourself these questions to help improve for next time
    - How could I have better prepared for this situation?
    - What behavior could I have changed before, during, and after this happened?
    - How could I have communicated better?

In essence, I'm looking for you to...	**Not…**
Be open to learning	Already know it all
Dare to try	Limited by timidity
Work hard	Half-hearted effort
Honest engagement	Polite observation
Pay attention, listen, and explore the material thing	Careless egotism, do your own

5. Grading Criteria and Grading scale

As you can see in the table below, 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.

Undergraduate

Presentation 1	20%
Presentation 2	20%
Presentation 3	20%
Presentation 4	20%
Qualitative Understanding	20%

Graduate

Presentation 1	15%
Presentation 2	15%
Presentation 3	15%
Presentation 4	15%
Qualitative Understanding	20%
Presentation Feedback and Review	20%

The grading scale for this class is based on 100 total possible points. And at the end of the semester, your final grade will be assigned using a standard A, B, C, D, F scale, including pluses and minuses.

A+, A	93 - 100	**C**	73 - 76
A-	90 - 92	**C-**	70 - 72
B+	87 - 89	**D+**	67 - 69
B	83 - 86	**D**	63 - 66
B-	80 - 82	**D-**	60 - 62
C+	77 - 79	**F**	Below 60

Land Acknowledgement Statement

As a land-grant institution, the University of Illinois at Urbana-Champaign has a responsibility to acknowledge the historical context in which it exists. We are currently on the lands of the Peoria, Kaskaskia, Peankashaw, Wea, Miami, Mascoutin, Odawa, Sauk, Mesquaki, Kickapoo, Potawatomi, Ojibwe, and Chickasaw Nations. It is necessary for us to acknowledge these Native Nations and for us to work with them as we move forward as an institution with Native peoples at the core of our efforts.

Academic Integrity

The University of Illinois at Urbana-Champaign Student Code should also be considered as a part of this syllabus. Students should pay particular attention to Article 1, Part 4: Academic Integrity. Read the Code at the following URL: http://studentcode.illinois.edu/.

Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policy: https://studentcode.illinois.edu/article1/part4/1-401/. Ignorance is not an excuse for any academic dishonesty. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor(s) if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity.

Use of AI

While I am a fan of using AI to help solve problems, AI cannot be used to solely do work in this course. You can and should use it as an assistant to help in your coursework. It is highly likely that during this course you will receive guidance on how to use AI in your projects.

With that said, you cannot and should not use AI to complete your coursework. Specifically, the reading and comprehension assignments. If at any point I suspect you have turned in work produced by AI, I will give you a 0 on that assignment. At that point, you can refute your case by emailing me to set up office hours. To prove your case, I suggest you use Google Docs or any other writing software that will keep a version history.

Disability Statement

Every human being learns, thinks, works, writes, and moves through the world differently. Consequently, I am committed to making this course flexible and accommodating to account for both difference and disability in this classroom, including in instances of physical disability, mental illness, and/or learning disability.

As part of this commitment, I try to present all course materials in multiple modes whenever possible, giving you the opportunity to participate and engage with different materials as you see fit. (And, really, this is one of the things this course is all about!) However, if any class materials, practices, or policies are in any way keeping you from being successful, please let me know by email or in person. I am more than happy to work with you!

Additionally, if you have a disability, I strongly encourage you to work with UIUC's Division of Disability Resources and Educational Services (DRES) to document your needs and request accommodations. They are an invaluable resource, and they can help us both better understand commonly helpful types of accommodations. You can contact DRES at 1207 S. Oak St., Champaign, (217) 333-1970, or via email at disability@illinois.edu.

Family Educational Rights and Privacy Acts (FERPA)

Any student who has suppressed their directory information pursuant to Family Educational Rights and Privacy Act (FERPA) should self-identify to the instructor to ensure protection of the privacy of their attendance in this course. See https://registrar.illinois.edu/academic-records/ferpa for more information on FERPA.

Mandated Reporter Status and Sexual Assault Resources

Please know that while I care greatly for my students and am happy to lend an ear in support when asked, under Title IX, I (along with your other teachers) am designated as a mandated reporter. This means I am required to disclose reports of sexual misconduct to the University or law enforcement. If you are a victim of sexual violence and are ready to speak to an advisor but unsure of whether you want to file a report, you do have access to confidential advisors and other confidential resources through the university and community. You can find information about those and other related resources at http://www.wecare.illinois.edu/resources/students/.

Week-by-Week Course Schedule

Week #	Weekly Focus	Required Readings	Assignments & Week Overview
Week 1: Aug 27	Introduction, Syllabus, Decision Jam Activity		
Week 2: Sept 3	Understand		**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 3: Sept 10	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 #	Weekly Focus	Required Readings	Assignments & Week Overview
Week 4: Sep 17	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: Sep 24	Presentions 101, Prototype & Experiment	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. 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.	**Assignments:** Question set #1 due in canvas by EOD 9/24 Question set #2 is 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 #	Weekly Focus	Required Readings	Assignments & Week Overview
Week 6: Oct 1	**Presentation 1**		**Presentation 1**
Week 7: Oct 8	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 with Understand and Synthesize
Week 8: Oct 15	Ideate & Prototype & Experiment		**Week Overview:** Continued lecturing and hands-on work with Ideation/Prototyping/Experimentation

Week #	Weekly Focus	Required Readings	Assignments & Week Overview
Week 9: Oct 22	**Presentation 2**		**Assignments:** Question set #3 due in canvas by EOD Oct 22 **Presentation 2**
Week 10: Oct 29	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: Nov 5	Ideate & Prototype & Experiment		**Week Overview:** Continued lecturing and hands-on work with Ideation/Prototyping/Experimentation

Week #	Weekly Focus	Required Readings	Assignments & Week Overview
Week 12: Nov 19	**Presentation 3**		**Assignments:** Question set #4 due in canvas by EOD 11/19 **Presentation 3**
Week 13: Nov 19	Understand & Synthesize		**Week Overview:** Continued lecturing and hands-on work with Understand/Synthesize
Week 14 - Thanksgiving Break	Ideate & Prototype & Experiment		**Week Overview:** Continued lecturing and hands-on work with Ideation/Prototyping/Experimentation
Week 15: Dec 3	**Presentation 4**		**Assignments:** Presentation 4

Week #	Weekly Focus	Required Readings	Assignments & Week Overview
Week 16; Dec 10	Project + Class Retrospective		**Assignments:** Class participation in Retrospective (This is part of your Qualitative Understanding Percentage) **Week Overview:** Only class on Tuesday to have a Retrospective on the course and projects.

Changelog

08/25/2024 - Syllabus Created

10/23/2024 - Removed group leadership from the Graduate student grades. This was a copy/paste issue from the online version of this course where that is being rated. It does not apply to the in-person.