

Instructor

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Course Overview

This is an introductory course on human-centered design. It has been designed to orient you to certain theoretical ideas while instructing key practical methods and tools for approaching interaction and experience design problems. This section of the course will have a few points of focus. These are: (1) design theory, (2) qualitative research methods for designing, and (3) ways to evaluate and improve designs. You will find the concepts and methods covered in this class to be widely applicable. Professional interaction and experience designers and researchers have contributed to the design of this course in an effort to ensure that the methods and tools we discuss will be immediately applicable to you in your careers designing services, information systems, products, interfaces and user experiences, and so forth.

Overall Aims for the Course

- Explain the value of a human-centered design perspective
- Understand how individuals and groups use technological artifacts in different contexts
- Develop a personal understanding of the design process

Learning Objectives

- Use ethnographic and interview methods to collect information about users
- Take detailed field notes and develop a thick record based on field observations
- Build an exemplar collection of different technological artifacts
- Develop a semi-structured interview protocol and conduct semi-structured interviews with users
- Present design work in accordance with the PRiNciPLes framework
- Create low (pen/paper) and hi-fidelity prototypes of mobile and web-based applications
- Generate cogent, actionable design insights through different data analysis techniques, such as: affinity diagramming, personas, and storytelling
- Critique theoretical ideas about human-centered design and describe their relevance for practical design work

Required Books & Materials

[Universal Methods of Design](#) (Martin & Hanington, 2012). There are two versions of this book, one of which is a 'pocket' edition. This class will make use of the full size, hardcover edition and not the pocket edition. We will also make use of [Designing with the Mind in Mind, 2nd Edition](#) (Johnson, 2014).

Sketchbook and pen(s). You are welcome to purchase whatever sketchbook and pen(s) you would like for this course. However, we will talk a little about both during the first week of class. A great, local store for this purpose is [Uncle Eli's Artist Emporium](#). They have a terrific selection of books and pens.

Note: There will be additional course readings posted to canvas as PDFs.

Other Useful Resources

Purdue Online Writing Lab (OWL)

PhD-design Listserv (google this list and subscribe to it)

How Different Artifacts Contribute to your Final Grade:

Your grades will be based on the following breakdown. However, elements that are harder to quantify can also influence your final grade.

Artifacts	Weight
Content Critiques + Sketches	30%
Research and Design Projects	40%
Final Project	20%
Attendance	10%
Total	100%

All assignment/project submissions will be through Canvas, which allows me to set time-specific deadlines for submitting work. I have set up the site so that the assignment dropboxes remain open throughout the semester. However, the submission deadlines are still date/time specific so that I'll be able to see if/when an assignment comes in late. **Late assignments lose points, so be sure you submit your work on time.** If there are extenuating circumstances that prevent you from turning in work on time, then you need to let me know as soon as you find out along with some kind of documentation affirming the circumstances.

A note on academic integrity. Penn State's Code of Conduct & Student and Student Organization Conduct Procedures (revised 8/23/17) describes academic integrity as:

"Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts. Academic integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others.

Violations of Academic Integrity include, but are not limited to, copying, plagiarism, fabrication of information or citations, facilitation of acts of academic dishonesty by others, unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, and tampering with the academic work of other students." (2017, p. 9)

This class involves primary and secondary data collection and analysis as well as analytical writing assignments and design projects. All this stuff presents opportunities for most of the violations listed above. Don't commit any of them. You won't gain anything, and you stand to lose a lot.

If at any time you feel overwhelmed by the work in this (or other) course(s), then please come talk to me or take advantage of some of the other support services offered here at Penn State (<http://studentaffairs.psu.edu/counseling/>).

Final Grades

Cutoffs for final grades are as follows:

Letter	Value
A	93.1 or more
A-	90-93
B+	87-89.9
B	83-86.9
B-	80-82.9
C	77-79.9
C-	70-76.9
D	60-69.9
F	59.9 or less

Course Conduct

The key to doing well in this class is to attend each session and complete the assignments to the best of your ability. Do well, and take pride in your work.

Time. For every hour of lecture, you may want to set aside about three hours of time outside of class to read, sketch, and do other activities. Some weeks you may have to set aside more or less depending on the nature of the work. You are responsible for completing all readings prior to the start of the class in which they will be discussed. Our discussions will be much richer, and you will all take away a lot more from them if you read each text, take notes, and come to class with a few questions or comments ready to share.

Attendance. Please note that if you miss a class, it is up to you to find out what you missed by asking your classmates. You are also responsible for checking Canvas daily to keep abreast of important announcements or schedule changes. Three missed days won't impact your grade, but, after missing three classes, your grade will start going down. One more time: missing more than three classes will drive your grade down.

Tech. This is an IST class, and, as such, we will make use of technological tools during class sessions. However, we have to establish and maintain a standard of courtesy whereby we use laptops and/or smartphones *only* for activities related to the course readings, discussions, or design activities. Set your

phones to vibrate or silent during class meetings, and resist the urge to check them.

Course Design

This version of 331 has been iterated from previous years' designs. It draws on ideas from Eun Kyoung Choe, who now teaches and does research at the University of Maryland, and Frank Ritter, who currently teaches here at PSU. In addition, a team of design practitioners worked with me to curate a core set of methods and tools and other resources. They include:

- Emily Baumgartner (UX Researcher at Innovatemap)
- Barb Belsito (Product Designer at Lyft)
- Adam Williams (UX Designer at IBM)
- Michael Moreau (Interaction Designer at GE Digital)
- Sarah Ng (UC Irvine)

Some of these folks may teleconference in as guest speakers throughout the semester. I will update the syllabus when dates have been arranged, and we will modify our coursework as needed. I have planned the course to provide the flexibility we need to accommodate guest speakers.

I have developed this course in order for you to work independently, in pairs, and in a group. Conversations with current practitioners and my own background in learning experience design lead me to believe that mixing these different ways of working reflect the realities of being a design practitioner in a variety of domains (interaction, experience, learning, architecture, graphic, and so forth). Moreover, much of the work has overlapping timelines. You'll start some projects before finishing others. This can be frustrating and overwhelming. I understand that both as the course designer and as someone who experiences such overlap first hand in my own work. Figuring out effective strategies for managing time and for dealing with complex work is an important (though for the most part tacit) part of the course. I will do my best to share insights and manage these things as they come up.

Important: When you work in a pair or in a group you are expected to pull your weight. In an effort to ensure that this happens, I incorporate peer evaluations into each pair and team assignment and I factor these evaluations into your assignment grade. So, if you work in a pair but you don't do any work you can expect to get a low grade even if your partner gets a high one. Same for group work. If you don't do much then your grade will be lower while your group mates will earn higher scores. Support each other. You're in this together.

Finally, while I do have concrete ideas about the requirements of the different activities we will engage in this course, my standpoint as a design theorist requires me to acknowledge that these frameworks can and should change. What this means is that I will provide you with guidelines for the work you do in this class. You will have a sense for how I might go about grading your work, and thus you will have a sense for what you need to do in order to do well. But these guidelines are flexible. In the same way that I might iterate on the syllabus, I also might iterate on guidelines for the work that you do. This does not mean I have unrealistic expectations for what you can/will do in response. It means my thinking has changed based on the natural progression/evolution of the course. When things change, I will do everything I can to make sure that the changes are fair and that they do not result in any undue hardship for you.

If you have questions or concerns about your ability to do the work in this class then come see me asap.

Do not wait until the middle or near-end of the semester to come talk to me.

Course Schedule

Week	Topic	Readings	Due
1	Introduction		
	Personal Intro Presentations		Personal Intro Presentations
2	Design Process + Designer Interviews + Content Crit I	<i>What is design?</i> (Heskett) <i>What is the design process?</i> (Aquino) <i>Biased Perception</i> (Johnson)	Sketches I
	Interpreting Design Briefs + Design Critique	<i>A Practical Guide to Running Effective Design Critique</i> (Royer & Yu) <i>Four Things Working at Facebook has Taught me About Design Critique</i> (Christensen) <i>Vision and Structure</i> (Johnson)	Content Crit I Sketches II
3	Rapid Design Project I + Interview Presentations		Interview Presentations
	Interview Presentations		Sketches III
4	Fieldwork and Interviews	<i>Design Ethnography</i> (Martin & Hanington) <i>Developing a thick record</i> (Carspecken) <i>Interviews</i> (Martin & Hanington) <i>Open-ended vs. closed-ended questions</i> (Farrell) <i>Color/Peripheral Vision</i> (Johnson)	Sketches IV
	RDP I Presentations		Exemplars RDP Presentation
5	RDP I Presentations		Fieldwork Plan Sketches V
	Presenting design concepts	<i>PRInCiPleS design framework</i> (Blevis) <i>Limits on attention</i> (Johnson)	Content Crit II
6	Problem setting + Reflective Practice +	<i>The Design Process</i> (Schön) <i>Frame Innovation</i> (Dorst) <i>Donald Schön: Learning, Reflection and Change</i> (infed.org)	Interview Protocol Sketches VI
	Team Protocols	<i>Design Thinking</i> (Cross)	Thick Record

			Sketches VII
7	Artifact Analysis LAB	<i>Artifact Analysis</i> (Martin & Hanington)	Transcript Sketches VIII
	Adobe XD + XD Prototype I + Rapid Design Project 2	<i>Adobe XD Cheat Sheet</i> (Beck, 2018)	
8	Secondary Research	<i>ACM Digital Library + Google Scholar Cheat Sheet</i> (Beck, 2018)	
	Final Project Intro	<i>CHI Student Design Challenge</i>	XD Prototype I
9	**Spring break**		
	Spring break		
10	RDP2 Presentations + XD Prototype II		Rapid Design Presentations
	RDP2 Presentations		Final Project Progress Report I
11	Personas and Scenarios	<i>Personas</i> (Nielsen, n.d.) <i>Scenarios</i> (Martin & Hanington)	XD Prototype II
	Content Analysis + XD Prototype III	<i>Content Analysis</i> (Martin & Hanington) <i>Thematic Analysis</i> (Mortensen)	IXD Narratives
12	Affinity Diagram LAB		XD Prototype III
	TBD	TBD	Affinity Diagram + Themes <i>and</i> Progress Report II
13	Prototyping LAB	<i>Prototype VI Design Brief</i>	XD Prototype IV
	Final Project LAB		Draft I of Final Presentation
14	Final Project LAB		Draft II of Final Presentation
	Catch-up day	Catch-up day	
15	In-class presentations		Final Project Presentations

	In-class presentations		Final Project Presentations
16	tbd...		
	tbd...		

Readings

The following readings are also linked (and in some cases available for download) on the course site. Readings with a '**' are available on Canvas. All others should be available via the links provided. If there are issues using the links then reach out to me *and* Ramsha to let us know.

A Aquino (2017, June 3). What is the design process? Retrieved from <https://medium.com/intro-to-digital-product-design/lecture-2-accidentally-uploaded-from-phone-c23ef4aca05c>

**Beck, J. & Ekbia, H. (2018). The Theory Practice Gap as a Generative Metaphor.

**Blevis, E. (2012). The PRInCiPlE S design framework. John M. Carroll (Ed.), Creativity & Rationale. Springer

**Carspecken, P. (1996) Critical Ethnography in Educational Research: A Theoretical and Practical Guide. New York, NY: Routledge.

Christensen, T. (2016) Four Things Working at Facebook Taught Me About Design Critique. Retrieved from goo.gl/5A7xSK

**Cross, N. (2011) Design Thinking: Understanding How Designers Think and Work. New York, NY: Bloomsbury Academic.

**Dorst, K. (2015) Frame Innovation: Create New Thinking By Design. Cambridge, MA: MIT Press.

Farrell, S. (May 22, 2016) Open-ended vs. closed-ended questions in user research. Retrieved from <https://www.nngroup.com/articles/open-ended-questions/>

**Heskett, J. (2002) Design: A very short introduction. New York, NY: Oxford University Press.

How to conduct user interviews (2017). Retrieved from <https://www.interaction-design.org/literature/article/how-to-conduct-user-interviews>

Johnson, J. (2014) Designing with the Mind in Mind (2nd ed.). Waltham, MA: Morgan-Kaufman.

Martin, B., & Hanington, B. (2012) Universal Methods of Design: 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions. Rockport Publishers.

Mortensen, D. (2018) How to do a thematic analysis of user interviews. Retrieved from goo.gl/XL7Gv5

Nielsen, J. (2010). Interviewing users. Retrieved from <https://www.nngroup.com/articles/interviewing-users/>

Nielsen, L. (n.d.). Personas. In The Encyclopedia of Human-Computer Interaction (2nd ed.) Retrieved from <https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed/personas>

Preparing for UX stakeholder interviews. (2016). Retrieved from
<https://www.interaction-design.org/literature/article/preparing-for-ux-stakeholder-interviews>

Randall, D., & Rouncefield, M. (n.d.). Ethnography. In *The Encyclopedia of Human-Computer Interaction (2nd ed.)*
Retrieved from
<https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed/ethnography>