

Human-Centered Design Process & Methods (Info 310)

College of Computing & Informatics, Drexel University
Course Syllabus, Winter 2021

Wednesdays, 4:30–5:50 p.m. ET
in our Zoom classroom space
Password: design

Professor
Tim Gorichanaz, Ph.D.

tjg68@drexel.edu
Office hours: Tue 4–6 p.m. EDT

*Everyone needs habits of mind that allow
them to dance across disciplines.*
—David Epstein

Course Overview

This course will introduce you to the process of human-centered design for interactive user interfaces. It teaches some of the basic approaches to the design and evaluation of interactive user interfaces. It delivers practical advice on interaction design challenges, introduces aspects of critical theory and critical design, and applies human-centered design principles in the design of the user interface to an interactive computer system.

Course purpose

This course is required for students in the following majors: Computing & Security Technology, Computer Science, Software Engineering, and Information Systems. It is also an elective, particularly for the Human Computer Interaction minor, but it may be taken as a Free Elective by students in other programs.

Expected learning outcomes

Upon successful completion of this course, you will be able to:

- Apply at least two methods for user data gathering and analysis
- Assess user needs and make design decisions based on user needs assessment
- Explain how critical theory and self-reflectiveness impact design choices
- Explain design principles and the iterative process of user-centered design
- Perform user interface prototyping using at least one prototyping tool
- Perform usability testing and user interface evaluation
- Apply the principles of user-centered design to multiple interaction modes, such as mobile, wearable, and tangible interfaces
- Describe the principles of accessible and universal design

Textbook and readings

The required text for this course is *Interaction Design: Beyond Human–Computer Interaction*, by Sharp, Rogers and Preece (5th ed., 2019). A digital version of this book is [available freely through the Drexel Libraries](#). If you foresee yourself going into a career in interaction design, you may want a copy for your bookshelf. As far as textbooks go, it's not too expensive—about \$30 new on Amazon, and cheaper used.

In addition to the textbook, we'll be reading several articles, all of which will be available on Blackboard. You'll be expected to do the scheduled readings each week prior to our class meeting. The readings are straightforward and relevant, and some are even fun. There will be periodic quizzes to help you gauge your comprehension and keep you on track. You will also have ample opportunity to demonstrate mastery of the readings through your work in the group project.

Structure of the course

This course makes use of both live (synchronous) and self-paced (asynchronous) elements. To begin with the synchronous portion, this course is scheduled to meet Mondays and Wednesdays at 4:30 p.m. We will meet as a class on Zoom on **Wednesdays only** for discussion and activities. Again, you should have completed the week's assigned readings prior to the meeting. As for Mondays, you can use the scheduled time for group meetings and teamwork; as you'll see below, the major substance of this course is a group design project. Besides this, the course materials will be posted on Blackboard; you will be able to complete each week's readings, lectures, etc., according to your own schedule.

Contacting me

Student–instructor interaction is an important part of any course. I am available to you, even in this asynchronous, online setting. I want to help you succeed in this course, in your program at Drexel—and in life. Please contact me with any questions, problems, discoveries or anything else. If your question is general and may be of interest to others in the class (e.g., syllabus, readings, schedule, etc.), please post it on the *Raise Your Hand* Discussion Board so that others can benefit. With personal or urgent questions, email me directly. If you have a technical question, you will be better off contacting [the IT department](#).

My office hours this quarter are Tuesday afternoons from 4 to 6 p.m. Philly time. These are “email office hours,” meaning that if you email me at this time you can expect a quick response. If you would like, we can quickly get onto a private Zoom meeting with voice and video.

Feel free to email me at any time. Note, however, that I do not generally check email on nights or weekends. In our always-on society, it is important to set boundaries—firstly because healthy lives require off-time, and also because our academic activities require uninterrupted periods of time for reading, writing and thinking. Moreover, taking time for rest and pursuing leisure activities have been shown to improve productivity, creativity and accomplishment, as Alex Pang discusses in his book [Rest: Why You Get More Done When You Work Less](#). I hope you will join me in living with more balance.

In light of the pandemic

Against all our hopes, the pandemic is still with us. We all wanted to be back on campus by now, but the world has not cooperated with our wants. Besides this, of course, our lives have been disrupted in so many ways. At this time, we seem to be over the worst of it, but the future is still far from certain.

As such, there are a few agreements I would like us to make as a class. First, remember that nobody signed up for this. We're social distancing, we're learning (and teaching) from home, and our lives are still being disrupted in big and small ways. At times you may be angry, frustrated or fearful. You may fall ill, as might your family members or housemates. Troubles may come up that we can't see yet. It will be difficult. But you're not alone. We're all in this together. We will help each other and do our best to get through this. Let's prioritize supporting each other. Let's do our best to be flexible and understanding when unexpected situations come up. Please practice benevolence with your teammates especially.

Mood and approach

In this class, you'll become a designer. I don't just mean software architecture, and I don't mean graphics. In this class, *design* means something bigger.

Perhaps you're already excited about this course. Perhaps you're intimidated. Maybe you already consider yourself a designer, or maybe you think there's not a creative bone in your body. No matter what, this class will challenge you. It'll ask you to think differently—and work differently. You'll be expected to draw sometimes, and at other times to critically dissect ideas. Sometimes you'll work alone, and sometimes you'll work in a group. In the end, the goal is to give you the tools to be a creative problem solver. It's my belief that everyone is creative—and that creativity is a skill we can build, not something that we either have or don't. What's more, the Digital Age calls all of us to be designers, whether we like it or not. So you're a designer: you might as well learn how to do it well.

This course is interdisciplinary and multimodal. Students with different backgrounds, goals and specialties will work together in teams. We'll mix reading, designing, prototyping and writing; and individual, small-group and inter-group activities—much like what you will experience in industry and organizational design scenarios, so this will be good practice.

Please come with an open mind—as open as you can manage—and a taste for adventure. Be respectful of your classmates (and group mates, especially), particularly when disagreements arise (they will). And don't forget to respect the class itself as well. Some of the assignments and activities may sound trivial, zany, icky or even impossible—but humor me. Do *your* best. I like to say that taking a class is like buying a gym membership: you won't get results if you don't go; and *you* are ultimately responsible for your success or failure. But just as you don't have to go to the gym alone all the time, remember that you've got a whole class full of mates here for the adventure with you. Have fun.

Assignments and Grading

This class will provide you with a platform for learning and trying new things. You will get the chance to connect what we learn and discuss in class with what you have learned and practiced in other classes. Specifically, you will do industry-level work in interaction design with a group. As this is an online class, you'll be working on a distributed team—more and more in the workplace, particularly in tech, distributed teams are becoming the norm. The skills you build in this class will make you a valuable team member.

Group design project

A major portion of this class is a group design project. In this project, you will work with an assigned group of about four people to design something in response to a given theme. Every group will respond to the same theme, but will solve different problems within that theme. With your group, you will go through the design thinking process and come up with a feasible and tested solution for a problem that you identify. The project consists of six major deliverables:

- **GP1: Problem Space and Data Gathering Plan**
- **GP2: User Needs Analysis and Design Requirements**
- **GP3: Prototypes; then Redesigned Prototypes after critiques**
- **GP4: Usability Study**
- **Final group prototype**
- **Final group presentation poster**

Individual journal entries

Throughout the term, you will write four journal entries of about 300 words each. Prompts will be provided on Blackboard. These journal entries will give you the chance to reflect on your ongoing group project and the readings.

Grading

Research has demonstrated that traditional methods of grading diminish students' learning, decrease students' interest in the subject matter, and prevent students from taking creative risks. Moreover, many students experience anxiety about grades. In this class, we are here to learn, to become interested in human-centered design, and to take creative risks by trying new things (not just following a rubric)—and we certainly don't need more anxiety in our lives. So we will take a different approach to assessment.

My intention with this class is to help you to work in an organic way, as you will after graduation. So while you will get a final grade in the class, I will not put quantitative grades on individual assignments. Rather, when I review your work, I will ask questions and make comments meant to engage your work rather than simply evaluate it. You, too, will reflect deeply on your work and that of your peers throughout this quarter, and we will discuss your learning and effort as the course progresses. We will do this throughout the course, but there are two main reflections I will ask you to complete as anchors for this process:

- **Midterm Reflection:** During Week 5, I will provide you with a link to an online form that will guide you through a reflection on your work thus far—what challenges you've overcome, how you're living up to my, your group's and your own standards, and what your goals are for the coming weeks. At the end, you'll be asked what letter grade you would give yourself for your work thus far. This is your chance to assess yourself realistically and challenge yourself to improve in the second half of the term. I will respond to your reflection, and we'll have a conversation if our respective assessments do not match up.
- **Final Reflection:** During Exam Week, I will provide you with another link to an online form where you'll complete your final self-reflection for the term. Again, I'll ask you what grade you would give yourself. I prefer to give everyone the grade they would give themselves, I do reserve the right to make adjustments.

For reference, here is my interpretation of the letter grades:

- *A – Excellent:* Original and creative thinking, and strong writing. Goes above and beyond in effort and participation, and demonstrates mastery of the course content through application. Supplements required coursework with additional readings, reflections and observations.
- *B – Good:* Demonstrates understanding of the facts and concepts presented in class with few misapprehensions. Most writing is well done with well supported arguments.
- *C – Acceptable:* Meets most expectations. Some learning is shaky or ignored. Not fully present.
- *D – Poor:* Shows flawed understandings of course content. Little participation or effort.
- *F – Failing:* Deep misunderstandings, poor attention, very low participation.

I know this process is quite different from how we usually think about grades. If any of this causes more anxiety than it alleviates, contact me at any time to discuss your progress in the course. As the course goes on, you'll be able to track your progress in the My Grades section on Drexel Learn.

If you are worried about getting a good grade in this class, your best strategy should be to do the readings, dedicate yourself to your group's success, ask questions often, complete the assignments diligently and on time, and engage earnestly with all your classmates.

Notes on Group Work

As you've seen, the group project will constitute a large portion of this class. And this isn't just in terms of formal assignment submissions: the group project has tentacles. Throughout the class, you will often find yourself presenting on and discussing your progress on the group project, both working with your own group and consulting with other groups. In fact, most of the coursework will be closely tied to the group project, which will require good teamwork.

You may not like group projects. Still, there are at least two reasons—one pedagogical, and one professional—for having them. First, the discussion and negotiation that occurs in teams will support your learning. The more you discuss your view and the views of your fellow group members, and the more you challenge them, the better you will come to understand them. Not only that, but

interaction design is about skill and technique just as it is about knowledge, and getting the chance to apply what we discuss in class is vital to learning it. By the end of the course, each group will have a tested, medium-fidelity prototype. (I.e., a portfolio piece!)

Second, teams are a common feature of the workplace, in virtually every industry, and HCI and UX are no exception. Many of you will have been, or currently are, involved in work teams, either formally or informally. In both face-to-face and remote contexts, team members have to practice good communication and collaboration. Job descriptions routinely ask for these skills, and I hope this class will help you to develop and reflect on these skills. (E.g., on a job interview, you might be asked about a successful, or perhaps failed, group project.)

All team members should take part in all project activities, although responsibilities may be divided so that different members take the lead in different activities. No activity should be done exclusively by a single person. While the volume of work of each group member on each project component may not be equal, their contribution to the overall project should even out. You will need to meet with your group multiple times a week, whether that's face to face or online (video chat, Microsoft Teams, Slack, WhatsApp, etc.).

Here are some suggestions for achieving good teamwork:

- **Choose a team leader.** (Note: not a tyrant.)
- Discuss your individual skills and strengths (graphics, programming, writing, etc.) and see where each of you can best contribute.
- Notify each other as soon as possible of travel, illness, schedule conflicts (including other class assignments), etc.
- Be explicit: In face-to-face, synchronous communication, we can leave a lot of things unsaid. That doesn't work online. Text is ripe for misinterpretation. You should strive to over-communicate. **Explain what you mean, and say why you're saying it.**
- Be proactive: don't just do "what I was told," but also actively look for ways you might contribute that everyone else has overlooked.
- **Set agendas and time limits for your meetings.** It may be a good idea to begin each group meeting with a brief report from each member on their progress.
- Make every effort to ensure that all team members feel comfortable about other members' contributions. Be open about grievances.
- Feel free to use me as a scapegoat: "If we submit something like this, Dr. G will *not* be happy. Why don't we try...?"
- **General policy: if ever in doubt, communicate!** Redundancy is okay. Repetition is good. Keep everyone in the loop.

If your team is not functioning well, this could negatively impact your learning. If you find you cannot resolve the issue on your own, let me know and I will offer some help.

Policies

Academic integrity

You are expected to conduct yourself in a respectful manner as befitting the university environment. This includes academic integrity. In this course, as with any Drexel course, cheating will not be tolerated. This includes plagiarism (using others' intellectual work without reference) and cheating. All work you submit must be your own work, with sources properly cited. Any plagiarism or other academic dishonesty will result in a sanction that may extend to failing the course. I am obligated to report incidents of cheating (including plagiarism) to Drexel administration. A student who is found in violation twice (even if in two different courses) will be expelled from the university. For more information, please refer to the [Provost academic integrity policy](#) or to resources regarding [Student Conduct and Community Standards](#).

Changes to the syllabus

I am here to help you learn, and I want to make sure we achieve the expected learning outcomes in this course. To do this, I may have to make some changes to the syllabus—for instance, if it becomes clear that we need to spend more time on some topic. I'll do my best to honor the syllabus as is, and I'll be sure to let you know about any changes as far in advance as possible.

Dropping the course

If you are considering whether to continue your enrollment in the course, please refer to the [Course Add/Drop Policy](#) and the [Course Withdrawal Policy](#).

Student conduct

Drexel University adopted a student conduct policy requiring that all students have the responsibility to be aware of, and abide by, the University's policies, rules, regulations, and standards of conduct. The Student Conduct and Community Standards policy information is available in the [Official Student Handbook](#).

Appropriate use of course materials

It is important to recognize that some or all of the course materials provided to you may be the intellectual property of Drexel University, the course instructor, or others. Use of this intellectual property is governed by Drexel University policies, including the [Acceptable Use Policy](#). Briefly, this policy states that course materials, including recordings, provided by the course instructor may not be copied, reproduced, distributed or re-posted. Doing so may be considered a breach of this policy and will be investigated and addressed as possible academic dishonesty, among other potential violations. Improper use of such materials may also constitute a violation of the University's [Code of Conduct](#).

Participating in course evaluations

Student evaluations are a required element of every course. Evaluation forms are completely anonymous. They are confidentially used to make improvements in our curriculum and teaching. They are also used by administration in evaluating faculty performance, and in decisions about promotion, tenure and retention. Please take part in course evaluations.

Time management

Drexel University assumes that each credit-unit requires four hours of work per week (i.e., a 3-unit course means a student will spend 12 hours per week on that course), including reading, participation and completing assignments. This is a three-credit course. Please plan accordingly.

Support and Recommendations

If you are experiencing anxiety, depression or other issues

Drexel offers free and confidential support for anxiety-related problems, depression, family concerns, relationship issues, adjustment issues, eating disorders, alcohol- and drug-related problems, and questions about gender and sexual identity, all through the Drexel Counseling Center. The Counseling Center is located at Suite 201 in the Creese Student Center at 3210 Chestnut. The telephone number is (215) 895-1415. **For emergencies, or to reach an on-call counselor after regular business hours, please call (215) 416-3337.** Learn more [on the Counseling Center website](#).

If you need technical support

Get 24/7 technical support for Blackboard Learn from the Instructional Technology group [online](#) or by calling (215) 895-1224. For any other technical support (email, logins, etc.), Drexel University IT is here for you. You can contact them through email at consult@drexel.edu, by phone at (215) 895-2020, or by submitting the online [Problem Report Form](#).

Support for equality and diversity

Drexel University strives to promote an environment of equality of opportunity and compliance with university policies and federal, state and local laws prohibiting discrimination based upon race, color, religion, gender, marital status, pregnancy, national origin, age, disability and veteran status. If you have a question or complaint concerning discrimination, harassment, and/or retaliation, contact the Office of Equality and Diversity [online](#) or at (215) 895-1405.

Coaching, mentorship and tutoring

The [Center for Learning and Academic Success Services \(CLASS\)](#) serves as the organizing department for a variety of programs and services that promote coaching, peer mentoring and tutoring at Drexel. The Center is located on campus at the Creese Student Center (3210 Chestnut Street), Suite 050.

Campus activities and community

Find the Student Handbook, conduct and community standards, and the Counseling Center at [on the Student Life website](#). Consult this site for information on campus activities and student programs.

English help

The [English Language Center](#) offers English language instruction and support services to students, especially those who speak English as a second language. They are located at 229 N. 33rd Street. The telephone number is (215) 895-2022.

If you have a disability or are facing other challenges

Students [requesting accommodations](#) due to a disability at Drexel University need to request a current Accommodations Verification Letter (AVL) in the [ClockWork database](#) before accommodations can be made. These requests are received by Disability Resources (DR), who then issues the AVL to the appropriate contacts. For additional information, [visit the DR website](#), reach them by phone at (215) 895-1401, or by email them at disability@drexel.edu.

Free health services

The [Student Health Center](#) is located at 3401 Market St, Ste 105. You can call them at (215) 220-4700.

Career counseling

[CCI Career Services](#) offers help with job placement, job postings and credentialing. Outside our college, the [Steinbright Career Development Center \(SDLC\)](#) offers individualized career counseling, career fairs, career programs and resume workshops. The office is located at 3201 Arch Street, Suite 250, Philadelphia, PA 19104. The telephone number is (215) 895-2185.

Course Schedule

In the schedule below, assignments listed as “due” in a given week are due by the time of our live session in that week, i.e., Wednesday at 4:30 p.m. Philly time.

For the Sharp et al. text, the chapters listed in the table below are from the 2019 edition. If you’re using an older edition, verify the chapter topic before reading. The other readings will be on Drexel Learn; but for your reference, the complete citations are:

- Berkun, S. (2003). How to run a design critique [blog post]. Available at <http://www.scottberkun.com/essays/23-how-to-run-a-design-critique/>
- Microsoft Design. (2016). *Inclusive* [manual]. Available at <https://www.microsoft.com/design/inclusive/>
- Vorvoreanu, M. (2019). Guidelines for human–AI interaction. *Medium*. Available at <https://medium.com/microsoft-design/guidelines-for-human-ai-interaction-9aa1535d72b9>

Wk	Dates (M–Su)	Meeting	Topic	Readings	Major Assignments
1	Jan 11–17	Jan 13	Introduction	Sharp ch. 1	–
2	Jan 18–24	Jan 20	Data gathering	Sharp chs. 2 and 8	Journal 1 due
3	Jan 25–31	Jan 27	Data analysis	Sharp chs. 9 and 11	GP1 due
4	Feb 1–7	Feb 3	Interfaces and prototypes	Sharp ch. 12; Vorvoreanu 2019	Journal 2 due
5	Feb 8–14	Feb 10	Design principles	Sharp ch. 3; Microsoft 2016	GP2 due; Midterm Reflection due
6	Feb 15–21	Feb 17	Evaluating interfaces	Sharp ch. 14 (and skim chs. 15–16)	GP3 Part I due
7	Feb 22–28	Feb 24	Design critiques	Berkun 2003	GP3 Part II due; Journal 3 due
8	Mar 1–7	Mar 3	Design ethics	–	GP4 due; Journal 4 due
9	Mar 8–14	Mar 10	Review and frontiers	–	Final Prototype and Poster due
Ex	Mar 15–21	–	–	–	Final Reflection due by 4:30 p.m. on Mar 17