

Human–Computer Interaction (Info 608)

College of Computing & Informatics, Drexel University
Course Syllabus, Summer 2022

Professor

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Student hours: Tue 3–5 p.m. EDT and by appointment

Human–computer interaction (HCI) is a research field dedicated to understanding how people use digital technologies and how to design them better. The term is often used interchangeably with **user experience** (UX); but HCI tends to be more academic and research-oriented, whereas UX tends to be more business and design-oriented.

At the heart of HCI are **theories and empirical research techniques** for evaluating the usability of computer interfaces. This class provides an introduction to these topics.

So why is there a picture of a door here? To understand how we interact with computers, we can begin by thinking about how we interact with everyday objects, such as doors.

Why does this door have a **PUSH** sign taped to it? Surely doors aren't so complicated that they need instructions! And yet this one seems to need them. Have you ever experienced a door that took a few tries to open—you find yourself trying to pull even when the sign says **PUSH**. You may be surprised to learn that the lessons we can draw from doors are also relevant for the design and evaluation of computer interfaces!

Please note that **this is not a design class, per se**. In this class, we'll study concepts and theories for describing how easy to use, intuitive or effective a user interface is, and we'll get practice with some hands-on research for the evaluation of existing user interfaces. This research will lead to recommendations for improvement, but we won't be designing those improvements. So think of this course as complementary to other courses that are more squarely about design, such as Info 508, 690, and 691.



Course Overview

This course focuses on the physiological, psychological and engineering basis of the design and evaluation of human–computer interfaces, covering such topics as: theoretical foundation of HCI; cognitive modeling of user interactions; task analysis techniques for gathering design information; iterative design cycles; formative and summative usability testing; and project planning and report writing.

Course purpose

This is a core course in the Human–Computer Interaction and User Experience major of the Masters of Science in Information degree, and it is a required course for the Masters of Science in Information Systems (MSIS) degree. It may also be taken as an elective by students in other programs, such as Data Science (MSDS) and Software Engineering (MSSE).

Expected learning outcomes

As a result of your experience in this course, you should be able to:

- Describe the general areas of study within the field of human–computer interaction
- Describe the interaction between people, the work they do, the information systems they use, and the environments in which they work
- Apply a user-oriented approach to the design of interactive computer systems
- Apply a user-oriented approach to the evaluation of interactive computer systems

In addition, as your instructor I will help you to:

- Self-reflect on your work and receive feedback gracefully
- Develop your skills of good thinking and related habits of mind, such as love of learning, intellectual courage, intellectual humility, and practical wisdom
- Contribute to a team effort and learn what makes a team successful
- Explain the evolution of computing machinery and its changing role in human society—and what the future may hold!
- Advocate for a human-centered approach to technology design

Course structure

This is an online, asynchronous course. The course is organized into weeks, each running Monday to Sunday. You can find an at-a-glance view of each week’s topic on the final page of this syllabus. Assignments are always due on Sunday at the end of the week by 9:00 p.m. EDT. (After 9 o’clock you can do something fun or turn in for a good night’s sleep.)

Each week will include readings, videos and activities that can be completed according to your own schedule. Discussion is a central component of the class; we’ll conduct our discussion via the Discussion Boards on Blackboard (a.k.a. Drexel Learn or BbL).

Readings

There are two textbooks that will be used in this course. Both can be accessed freely through the university libraries (find a direct link on Blackboard). That said, if you prefer reading on paper, both books are pretty affordable and readily available used. If you foresee yourself going into a career in UX, you may want a copy of these for your bookshelf—both are great to have on hand for reference.

The first is Don Norman’s The Design of Everyday Things (revised and expanded edition, 2013). This is a detailed, lively book which you will be asked to read and summarize over the first three weeks of the course. Norman’s work—especially this book—is seminal to HCI and UX (in fact, Norman coined the term UX!), and it is vital that you master its content. We will revisit ideas from this book throughout the term.

The second book is Interaction Design: Beyond Human-Computer Interaction, by Sharp, Rogers and Preece. This is a core textbook for HCI and UX courses internationally. It’s now in its fifth edition, published in 2019 (with the green cover). Note that this book covers the breadth of HCI and UX design topics, but we will only be reading select chapters for this course.

Contacting me

Student–instructor interaction is a vital part of any course. I am available to you, even in this online, asynchronous 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 *Questions About the Course* Discussion Board so that others can benefit. With **personal or urgent questions**, you should email me directly (tjg68@drexel.edu). If you

have a **technical question**, you will be better off contacting the Instructional Technology Group. See <http://www.drexel.edu/irt/help/learn> or call (215) 895-1224.

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 reflection. 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.

My **office hours** this quarter are Tuesday afternoons from 3 to 5 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.

Time commitment

This is a graduate course in a professional school. It is estimated that the total workload (lectures, readings, assignments, note-taking, etc.) will take 12 to 15 hours per week. Enrolling in a class is like signing up for a gym membership; you won't get results if you don't go. Be prepared for a serious commitment of attention and effort. It will pay off.

Assignments and Grading

There are nine assignments in this course, each of equal importance. These assignments fall into two categories:

- **DOET Digests:** In the first three weeks of term, you'll read and respond to assigned portions of *The Design of Everyday Things*. For each portion, you'll participate in a discussion board and write a summary of that section of the book.
- **Group Project:** As part of a group, you'll emulate an HCI professional to evaluate and suggest improvements for a system of your choice. This project will unfold over six assignments, some of which are prepared and submitted individually and others as a group.

Besides these, you'll complete three self-reflective activities: at the beginning, midpoint and end of the course. More on these in the Grading section below.

A note on group work

As you've seen, the group project will constitute a large portion of this class. You may not like group projects. Still, there are at least two reasons—one pedagogical, and one professional—for doing them in class. 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 HCI 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.

Second, teams are a common feature of the workplace, in virtually every industry, and the information/computing professions 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 them. (E.g., on a job interview, you might be asked about a successful, or perhaps failed, group project!) Learning to work online with distributed teams is going to be a boon to you, particularly in a post-pandemic world.

If at any point in the quarter your team is not functioning well, this could negatively impact your learning. Please try to solve the issue together first by talking it through. If you find you cannot resolve an issue on your own, let me know and I will offer some help.

Here are some suggestions for achieving good teamwork:

- Select what technologies you'll use as early as possible.
- **Choose a team leader.** (Note: not a tyrant.)
- Discuss your individual skills and strengths 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.
- Relatedly, be explicit about who is doing what and when, and what's next.
- 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.
- Don't try to hold long meetings online—use a strategic mix of synchronous and asynchronous, putting technology to its best use.
- Schedule very brief regular check-ins to keep everyone in the loop (maybe synchronous, maybe not).
- Make every effort to ensure that all team members feel comfortable about other members' contributions. Be open about inchoate grievances.
- **General policy: if ever in doubt, communicate!** Redundancy is okay. Repetition is good, even. Keep everyone in the loop.

Work standards

Your work will be assessed according to the Universal Intellectual Standards published by the Critical Thinking Community. These include how well you responded to the requirements of the assignment (relevance), the quality of your argument (clarity, logic and fairness), your grasp of the subject matter (accuracy and precision), the depth of your analysis, and the effective use of the literature to support your arguments and observations (breadth). Moreover, I expect your work to be well-written and polished. If you are interested in improving your writing, I recommend the book The Sense of Style, by Steven Pinker.

Grading

Research has demonstrated that grades 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 HCI, and to take some creative risks by trying new things (not just following a rubric)—and we certainly don't need more anxiety in our lives. So in this class, 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 three things I will ask you to do as anchors for this process:

- **Goal-Setting:** During Week 1, we will set goals for our learning this quarter to give us each a concrete place to aim for in addition to the general course learning outcomes listed above.
- **Midterm Reflection:** During Week 4, I will provide you with a link to an online form that will guide you through a reflection on your work thus far—particularly with respect to the goals you set for yourself. At the end, you'll be asked what letter grade you would give yourself for your work to date. 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.

• **Final Reflection:** During Week 10, 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 suggest for themselves, I do reserve the right to make adjustments. For reference, here is my interpretation of the letter grades:

- *A – Excellent:* You have demonstrated significant progress toward the learning targets for this course while exceeding expectations in effort, participation and results. You have sought to improve your work continually based on the feedback of me and your peers.
- *B – Good:* You have demonstrated progress toward the learning targets for the course while meeting expectations. You are generally responsive toward feedback.
- *C – Acceptable:* You are making progress toward most of learning targets for the course. Some troubles implementing changes after receiving feedback.
- *D – Poor:* You do not meet the expectations of one or more of the learning targets for the course.
- *F – Failing:* You demonstrate no progress toward the learning targets for the course.

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 and view feedback 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. I hope that as part of our learning experience this quarter, we'll be able to set grades aside and focus on the learning.

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). 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](#).

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](#).

Changes to the syllabus

I reserve the right to make changes to this course or its syllabus during the quarter if circumstances warrant such a change. Topics, readings and dates are subject to change, but only if necessary. Additional topics may be discussed as issues and ideas arise in the news and in discussion. All changes will be provided to students in writing as far in advance as possible.

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.

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

The Office of Disability Resources (ODR) team coordinates reasonable [accommodations for all Drexel students with disabilities](#) to ensure a level playing field on which they can succeed. ODR can also facilitate temporary adjustments for students with short-term impairments such as those due to accident, injury or illness. If you are a student with a disability, you are encouraged to register with ODR to request reasonable accommodations. This office is here to work with you, so reach out to them for assistance.

For any accommodations to be made, you will need to request a current Accommodations Verification Letter (AVL) in the [ClockWork database](#) (if you are new to the system, start by clicking “Online Intake”). These requests are received by ORD, who then issues the AVL to the appropriate contacts, such as professors. For additional information, [visit the DR website](#), reach them by phone at (215) 895-1401 or email at disability@drexel.edu, or visit them in person in Suite 228 in the Main Building.

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. The telephone number is (215) 895-2185.

Course Schedule

In this course, the weeks run Monday to Sunday. Assignments are due on Sunday at the end of the given week by 9:00 p.m. Eastern. In the schedule below, assignments in *italics* are part of the group project; **I** denotes an individual submission, and **G** denotes a group submission. “DOET” refers to the book *The Design of Everyday Things*. “SRP” refers to the Sharp et al. textbook.

Wk	Dates (M–Su)	Topic	Readings	Assignments
1	Jun 20–26	Introduction	DOET chs. 1–2; Myers 1998*	Goal Setting; DOET Digest 1
2	Jun 27–Jul 3	Interaction & Cognition	DOET chs. 3–4; SRP chs. 3–4	DOET Digest 2
3	Jul 4–10	Human-Centered Design	DOET chs. 5–7	DOET Digest 3
4	Jul 11–17	Data Gathering Methods	SRP ch. 8	Midterm Self-Reflection; G <i>Competitive analysis</i>
5	Jul 18–24	Data Analysis Methods	SRP ch. 9	I <i>User research report 1</i>
6	Jul 25–31	Modeling Users and Tasks	SRP ch. 11	I <i>User research report 2</i>
7	Aug 1–7	Heuristic Evaluation	SRP chs. 14 & 16	I <i>Personas etc.</i>
8	Aug 8–14	Usability Evaluation	SRP ch. 15	G <i>Heuristic evaluation</i>
9	Aug 15–21	HCI & Morality	–	G <i>Video Story</i>
10	Aug 22–28	The Future of HCI	–	Final Self-Reflection

* This reading will be available on Blackboard. For your reference, here is the full citation: Myers, Brad A. (1998). A brief history of human-computer interaction technology. *Interactions*, 5(2), 44–54.