Prototyping the User Experience (Info 691)

College of Computing & Informatics, Drexel University
Course Syllabus, Spring 2023

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> If a picture is worth 1,000 words,
> a prototype is worth 1,000 meetings.
> —David Kelly

Course Overview

My invitation to you

Welcome! In this class, you'll **build your skills in UX design**. Perhaps you want to go into design as a career, perhaps another area in UX, or perhaps something different altogether. No matter what, I believe you'll find something useful in this class—because at heart it's about human creativity.

It's my belief that everyone is creative. **That creativity is a skill we can build, not something that we either have or don't have**. 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 better.

Please come with an open mind—as open as you can manage—and a taste for adventure. Be respectful of your classmates (and teammates, especially), particularly when disagreements arise (they will). Again, if the pandemic has taught us anything, it's that we are all in this together, and that life goes best when we help each other and practice flexibility when unexpected situations come up.

Taking a class is like buying a gym membership: you won't get results if you don't do the work. 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 who are along for the ride with you. Have fun.

Course description

This course introduces students to prototyping techniques and tools for a range of user experience and design contexts. Students will learn about and practice a series of methods such as sketching, wireframing, physical prototyping, functional prototyping and Wizard-of-Oz approaches. Students will learn about how different prototyping techniques serve different purposes in the design process and select or adapt appropriate methods to meet their needs.
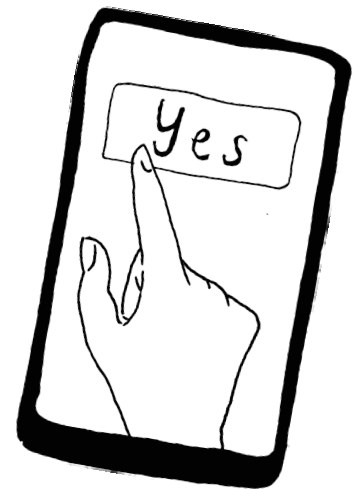
Course purpose

This is one of the five core courses for the Human–Computer Interaction and User Experience major within the Masters of Science in Information degree program. As a **prerequisite** for this course, students should have taken Info 508 or Info 608 (concurrently is fine). This course focuses on specific techniques for generating, exploring and communicating design ideas, while other courses in the program focus on the design process and evaluating designs.

Learning targets

As a result of your experience in this course, you will be able to:
- Create user interface prototypes using a variety of tools
- Select appropriate prototyping methods and tools for different projects
- Adapt prototyping techniques when appropriate
- Explain the role of prototyping in user experience design
- Demonstrate the relationship between prototyping tools and designed products

In addition, as your instructor I will help you to:
- Self-reflect on your work and cultivate a growth mindset
- Receive and respond to feedback gracefully
- Build your confidence in presenting your ideas in physical, tangible form, including through sketching
- 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 design team successful

What I think about teaching and learning

I love being a teacher, I love the material I get to teach, and I love bringing new voices into the fold. So my goal is not to "cover course content," but to welcome you into a community of learning that will serve you well for life. This goal guides my teaching philosophy and my choices as an instructor.

For example, the vast majority of our time this quarter will be in activities and conversations. You will be talking, making, doing, teaching… This is what we call *active learning,* and it will help you develop your skills in collaboration, solidify your learning for the long term, spark creative thinking, and get you to have fun along the way. Long story short, this class centers activity over watching videos (though we will have some of those).

How to be a part of this class

Learning happens best in community. For our purposes, this means being present and being caring. In an online, asynchronous class, this primarily means working with your teammates, though we will also make use of the discussion boards. This quarter, let mutual respect guide our time together, so that everyone can participate and enjoy the class. To be a part of this class, strive to do the following:
- **Read the assigned readings and give yourself time to mull them over**, so you can participate meaningfully in the other activities.
- **Do your best to get to know your classmates as the course goes on**. These are your allies—and future colleagues in life. The world is small. If you're on the shy side, challenge yourself to step just outside of your comfort zone when you're able. If you're local, see if you can connect in person.
- **Go out on a limb**. In design, taking creative risks is the best way to learn. This will be a safe environment to try something new. Even when you make mistakes, you'll learn.

Course mechanics

Course structure

This course has two sections under one roof: one online and asynchronous (section 900); and another that meets in person on Thursdays (section 001). 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 by 9:00 p.m. Eastern. (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. For those in the synchronous section (001), we'll do many of these things during class. For those in the online section, all of this can be done according to your own schedule. There will be some elements of teamwork in the course; online students will be matched with teammates who have a similar schedule as much as possible.

Time commitment

This is a graduate course in a professional school. Drexel estimates that the total workload (readings, assignments, notes, exercises) will take 12 to 15 hours per week. Be prepared for a serious commitment of attention and effort. It will pay off!

What books you need

We'll use two books in this class, a textbook and its accompanying workbook:

- Buxton, Bill. (2007). **Sketching User Experiences: Getting the Design Right and the Right Design**. Morgan Kaufman.
- Greenberg, Carpendale, Marquardt and Buxton. (2012). **Sketching User Experiences: The Workbook**. Morgan Kaufman.

Online versions of both are available free to you through Drexel Libraries, but obtaining a hard copy of at least the workbook is highly recommended. These books are not just text—they are visual, engaging and designed for a tactile reading experience.

Other things you'll need

During the first week, you should procure a notebook. (If you've taken Info 508, you can use your same trusty Design Notebook, assuming you have spare pages. Otherwise, get Design Notebook II.) This can be of any size or type; the only requirement is that it must be a physical, paper notebook. Take this opportunity to find a notebook that inspires you. You can personalize it as much as you like, or leave it crisp and clean. It can be expensive or cheap; if you're interested in getting a high quality notebook, some popular brands include Leuchtturm 1917, Midori, Rhodia and, of course, Moleskine.

This course will make use of some free prototyping software, such as Figma (free for students). You will be introduced to a handful of digital tools, but you are free to explore other software as you like. This class involves an open-ended design project, and the hope is that you'll be interested and inspired enough to explore the use of basic image and video editors, perhaps rudimentary prototyping tools, etc.

If you haven't already learned this the hard way, you should back up your work regularly. I recommend using a syncing backup service; Drexel offers all students 5 TB of space in Drexel OneDrive. Other similar services include Dropbox, Google Drive or Box.net.

Contacting me

Student–instructor interaction is an important part of any course. I am available to you, and I want to help you succeed in this course, in your program at Drexel—and in life. Please come to me with any questions, problems, discoveries or anything else you'd like to share. If you have a question that may be of interest to

others in the class (e.g., syllabus, readings, logistics, etc.), please ask it during class so that others can benefit. With personal or urgent questions, email me directly or speak to me before or after class.

I am available to meet with you by appointment, and feel free to email me at any time. I check email twice a day, and I don't do it at night or on 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 <u>Rest: Why You Get More Done When You Work Less</u>. I hope you will join me in living with more balance.

Assignments and Grading

This course includes four main types of assignments, some of which will be individual and some team-based. Full details are provided on Blackboard, but to give you an overview:

- **Sketching Exercises**: You will complete a number of exercises from *Sketching User Experiences: The Workbook*. You'll submit these in five batches spread throughout the term. These assignments should take about one hour per week.
- **Portfolio Website**: You'll create a personal portfolio website to host your design work. No coding is necessary; for this course, you can make use of free hosting platforms such as <u>Weebly</u> and <u>UXFolio</u>, or <u>CCI's own Tux</u>. You'll start this early on in the course, and you'll post the following assignments there.
- **Team Prototypes**: With a small team, you'll create three prototypes responding to design requirements and scenarios that will be provided. Through these assignments, you'll practice storyboarding, mid-fidelity prototyping, physical prototyping and digital interface prototyping. As part of these assignments, you'll provide critiques (constructive feedback) on some of your classmates' work. Critique is an indispensable part of design, and we'll get to practice the skill of both giving and getting such feedback.
- **Innovation and Reflection**: In the final assignment of the course, you'll work solo to create a prototype for a voice- or gesture-based interface in response to design requirements and scenarios that will be provided. To accompany your prototype, you'll write a reflective essay.

Discussion and participation

Learning can be exciting and, at times, confusing. For students in the face-to-face section of the course, we'll be able to do this when we meet each week. For all students, the Discussion Boards will offer you an opportunity for you to share your journey with your classmates—to ask and answer questions, discuss the readings, share resources, etc. There are several forums that will be open throughout the term, and some forums will correspond to topics we'll discuss in particular weeks (e.g., for sharing our prototypes and giving feedback).

In the past, students have also benefited from creating informal learning groups via the Discussion Boards. If you learn better with colleagues, this is highly recommended! You can make use of Zoom or other software to meet or you could connect in person, geography permitting.

Grading

<u>Research has demonstrated</u> 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 design, 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 5, 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**: Ahead of 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:* You have demonstrated significant progress toward the learning targets for this course while exceeding expectations in effort, participation and results.
- *B – Good:* You have demonstrated progress toward the learning targets for the course while meeting expectations.
- *C – Acceptable:* You are making progress toward most of learning targets for the course.
- *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 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.

Policies

Academic integrity

You're here to learn, and the university environment is set up to help you do that in a structured way. Please conduct yourself respectfully, and ultimately you'll learn the most you can. This includes academic integrity. In this course, as with any Drexel course, be honest about the work you did, and do your best with it. All work you submit must be your own work. Of course, we often incorporate ideas and content from others in our work, and that is fine, but you need to cite your sources to give credit where it is due. Strive to make clear your personal contribution and where you drew from others. This goes for books and articles, other people, and also AI tools (discussed specifically in the following section).

In this class, any forms of academic dishonesty will not be tolerated. This includes plagiarism (using others' intellectual work without reference) and cheating. I am obligated to report incidents of academic dishonesty to Drexel administration, and this may result in consequences such as failing the course. Note that 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. Please take this opportunity to learn the most you can this quarter by upholding your academic integrity.

A note on AI tools

We're living at an exciting time. A plethora of exciting AI tools have been released in recent years, including Microsoft 365 Copilot, Microsoft Bing Chat, GitHub Copilot, Open AI's ChatGPT, Facebook's LLaMA, Google's PaLM, Grammarly, Canva and more. Clearly these tools have the capacity to support human knowledge, work and creativity. However, these tools are not magic, and they have many limitations. In this class, you may choose to use these tools to support your work as a student. Doing so responsibly and thoughtfully is a way to increase your learning; but using them haphazardly may actually undermine your learning. If you choose to use an AI tool in your work in this course, please:

1. **Explain which parts of the work came from you and which from the AI tool, and acknowledge the human labor that went into developing the AI tool you used**. If you use AI-generated content or ideas, please don't claim credit for them. AI models have been trained on the work of thousands—if not millions—of under- or unpaid writers and artists and further refined by crowd-workers. By crediting the AI tool and acknowledging the underlying human labor, you are (at least in a small way) giving credit where it is due, just like you'd want someone to credit you if they used your ideas later on.

2. **Explain how the AI tool helped improve the quality and/or creativity of your work**. Remember that AI models can only reproduce the past—they can't imagine new possibilities, whereas humans can. Leverage AI tools as a starting point for your creative process, not an end point. It may even be helpful to spend time generating ideas on your own before allowing your imagination to be directed by the AI tools. If you allow yourself to rely too much on AI tools, you may limit your future self from developing the skills (and neural pathways) needed to be creative on your own: generating new ideas, synthesizing existing ideas, writing compelling text, and designing other types of content. Strive for AI to be a partner, not a crutch.

3. **Fact check any claims you included from AI tools, and cite any primary/original sources**. Remember that AI is not magic. AI-generated content is frequently factually incorrect and often misleading because of inherent limitations in how these models are designed and currently work.

Speaking of attribution, these ideas were developed in discussion with Dr. Sukrit Venkatagiri at the University of Washington. If you're interested in more discussion of these points, see his article here.

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. Remember, assignments listed in a given week are always due by Sunday at the end of that week at 9:00 p.m. Eastern. (After 9 o'clock you can do something fun or turn in for a good night's sleep.)

Wk	Dates	Meeting	Topic	Assignments
1	Apr 3–9	Apr 6	Sketching and Paper Prototyping	Goal Setting
2	Apr 10–16	Apr 13	Storyboarding and Wireframing	Sketching 1 Portfolio Site Setup
3	Apr 17–23	Apr 20	Feedback and Critique in Design	Team Prototype 1
4	Apr 24–30	Apr 27	Physical Prototyping	Sketching 2 TP1 Critiques
5	May 1–7	May 4	Video Prototyping	Midterm Reflection Sketching 3
6	May 8–14	May 11	Functional and Wizard-of-Oz Prototyping	Team Prototype 2
7	May 15–21	May 18	Visual Design, Accessibility and Inclusion	Sketching 4 TP2 Critiques
8	May 22–28	May 25	Design Systems and Prototyping in Practice	Sketching 5 (sec. 6)
9	May 29–Jun 4	Jun 1	New Interaction Paradigms	Team Prototype 3
10	Jun 5–11	Jun 8	Wrap-up	TP3 Critiques Innovation & Reflection
Ex	–	–	–	Final Reflection *due Wed, Jun 14*