Introduction to Interaction Design

Note that this syllabus is subject to change and updates; students will be notified in class and via Canvas (last update: March 12, 2020).

Learning Objectives

**Knowledge**
- What is interaction design?
- What is the importance of interaction design when developing apps, products, services and systems?

**Comprehension and Application**
- Design methods and skills
- Sketching techniques
- Scenarios and storyboarding
- Wireframing and prototyping

**Synthesis**
- Understand how to think critically about design and design solutions.
- Reflect on and discuss solutions

**Evaluation**
- Justify and defend (design) methods and decisions with a process-focused and context-specific perspective on interaction design

<table>
<thead>
<tr>
<th>Lectures: Thursday, 1-4 p.m.</th>
<th>Location: NQ 1255</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructor: Tonya McCarley</td>
<td>Contact: <a href="mailto:mccato@umich.edu">mccato@umich.edu</a></td>
</tr>
<tr>
<td>Office Hours: Thursday, 4-5 p.m.</td>
<td>Location: Thursday, 4-5 pm</td>
</tr>
<tr>
<td>New Location starting 1-30-20:</td>
<td>The &quot;UMSI Loft&quot;</td>
</tr>
<tr>
<td>715 N. University, Room 201</td>
<td>(above Mama Satto/Seoul/Silvio’s)</td>
</tr>
</tbody>
</table>

Syllabus: Posted to Canvas
GSI: Hope Tambala
Contact: hpbala@umich.edu
Office Hours: Tuesday, 4-6 p.m.
Office Hour Location: North Quad - 1278 Meeting Room

Summary

In this course, students will learn methods and skills involved in designing and prototyping interactive systems. The course covers the design process from the initial formulation of a design problem to creation of digital prototypes. The class structure is a mix of classroom design activities, lectures, and design critiques of student work by peers and the instructor.

Note: This syllabus is subject to change and updates; students will be notified in class and via Canvas.
Materials
No textbook is required for this class; however, I highly recommend the Wiley 4th Edition of *Interaction Design: beyond human-computer interaction*, by Jennifer Preece, Helen Sharp, and Yvonne Rogers. I have revised parts of this course to reflect this newest edition to Interaction Design. Course readings will be posted as PDFs and links on the course website.

Lectures

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<tr>
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<th>Lecture Date</th>
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<tr>
<td>Week 1: What is interaction design? (bio)</td>
<td>January 9</td>
</tr>
<tr>
<td>Week 2: Understanding &amp; Conceptualizing Interaction Design (ps)</td>
<td>January 16</td>
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<tr>
<td>Week 3: Needfinding and Brainstorming (comp analysis)</td>
<td>January 23</td>
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<tr>
<td>Week 4: Sketching to ideate and brainstorm (sketch)</td>
<td>January 30</td>
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<tr>
<td>Week 5: Sketching to prototype (wireframes)</td>
<td>February 6</td>
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<tr>
<td>Week 6: Understanding the user (personas)</td>
<td>February 13</td>
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<tr>
<td>Week 7: Story Mapping (workflow)</td>
<td>February 20</td>
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<tr>
<td>Week 8: Understanding Design Decisions (QOC) And Wireframing &amp; Tools</td>
<td>February 27</td>
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**SPRING BREAK Feb 29-March 8**

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<thead>
<tr>
<th>Overview/Lecture</th>
<th>Lecture Date</th>
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<tr>
<td>Week 9: Paper Prototyping</td>
<td>March 12</td>
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<tr>
<td>Week 10: High-fidelity Prototyping &amp; Digital Prototyping Paper prototyping</td>
<td>March 19</td>
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<tr>
<td>Week 11: Guest Speaker Digital Prototyping</td>
<td>March 26</td>
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<td>Week 12: Iteration &amp; Feedback Session</td>
<td>April 2</td>
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<tr>
<td>Week 13: Presentations</td>
<td>April 9</td>
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<td>Week 14: Presentations</td>
<td>April 16</td>
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## Assignments

<table>
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<tr>
<th>Assignment (value)</th>
<th>Assignment Due Date</th>
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<tr>
<td>1 Short Bio (4)</td>
<td>January 15</td>
</tr>
<tr>
<td>2 Problem Statement (4)</td>
<td>January 22</td>
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<tr>
<td>3 Competitive Analysis (4)</td>
<td>January 29</td>
</tr>
<tr>
<td>4 High-level Sketches (based on brainstorming) (4)</td>
<td>February 5</td>
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<tr>
<td>5 Detailed (40) Sketches (4)</td>
<td>February 12</td>
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<tr>
<td>6 Personas (4)</td>
<td>February 19</td>
</tr>
<tr>
<td>7 Story mapping (4)</td>
<td>February 26</td>
</tr>
<tr>
<td>8 QOC (4)</td>
<td>March 11</td>
</tr>
<tr>
<td>Paper Prototyping (Draft)</td>
<td>March 18</td>
</tr>
<tr>
<td>Paper Prototyping Submission (10)</td>
<td>March 25</td>
</tr>
<tr>
<td>Digital Prototype (Draft)</td>
<td>April 1</td>
</tr>
<tr>
<td>Final Presentation (6)</td>
<td>April 9</td>
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<tr>
<td>Final Presentation</td>
<td>April 16</td>
</tr>
<tr>
<td><strong>Final Write-up and Digital Prototype (20)</strong></td>
<td><strong>April 8</strong>&lt;br&gt;DUE BY MIDNIGHT 11:59 PM</td>
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</tbody>
</table>
INDIVIDUAL PROJECT

The centerpiece of this course is a design project that you will develop, over the course of the semester, from the conception of the problem you want to solve, through design research and ideation, to the stage of a digital prototype. Along the way, you will create a number of artifacts that represent different stages of the design process (sketches, wireframes, storyboards, low-fi prototypes, etc.). We will use the class activities and homework to move the projects forward.

The project for this class is an individual project. The idea is for you to focus on a problem you really care about—whether because it connects to your research interests or it is an aspect of your personal life—and then get the experience of going through the steps of systematically developing a solution to that problem. A side effect of this setup is that at the end of the semester, you will have a body of your own design work that you can use in your portfolio or as a starting point for developing the project further.

Note: My advice to you is that you preview other student and professional portfolios for inspiration on how to best present your work. Use these as baselines—you will want to submit far better material. A link is provided here
https://docs.google.com/document/d/1Q8GFPpkTgyHj72zzGrTLpTtz2FKjp8og9dek_XHAr3l/edit

Design Problem: Digital technologies pervade our daily lives, shaping with whom we connect, the news to which we are exposed and the entertainment with which we amuse ourselves. Yet in addition to our online social networks of friendship and shared interests, everyone also lives in a specific physical community -- a neighborhood. Each neighborhood is a locale with a distinct mix of individuals, resources (or lack thereof) and needs, with the particular configurations of space, social norms and values, environmental issues and constraints, and privacy concerns that go along right in hand. What kinds of applications, interactions or services can we design that are deeply embedded in local neighborhoods, concerns and issues?
Over the course of the semester, your project will be to design a system that supports an activity, a relationship within or a critical reflection on the particular context of a neighborhood that is important to you. This context may take many forms, such as sharing of resources (i.e. a
book exchange, carpool system, parking swap), organizing neighborhood events (i.e. a block party, picnic or holiday celebration), providing social support (i.e. sharing duties for childcare or eldercare) or encouraging local civic engagement (i.e. organizing a park clean-up day or community garden or hackathon). These ideas are a starting point, but do not feel limited by them.

As part of your project, you'll need to define what your particular "local context" is and what the specific neighborhood-focused activity or concern is. Think about if and how that activity is currently supported via technology (or other means), what doesn’t work about current ways of supporting it, and how your solution will do this better. The specificity of addressing a particular neighborhood allows you to think deeply about what makes the location/community unique and how you would best want to support it. So, dive in and see what you can come up with.

Scoping: One way to think about scoping is in terms of the number of steps or interactions that your system will support. Think about the process of shopping on Amazon. You first search, then the results page appears, then you click on a result to see the details for that item, then you add the item to cart, then you click to check out, etc. Each of these steps--entering a search term, clicking on a result, adding an item to cart--is a user interaction. Some of these interactions happen on the same page (e.g., adding to cart and clicking the Check Out button both happen on the item details page), while other interactions move the user to a new page (clicking on an item in the results list open the page with the detailed information for that item).

For your project, you should aim to prototype between 15 and 30 user interactions (steps through the system) that take place across 5 to 10 panels (e.g., web pages, screens of a mobile application). Most of the panels should be unique.

Final note: this is an interaction design class, which means that we are focusing on the user-facing aspects of technology: web pages, mobile apps, the control interface of a smart home appliance, the interface of a public kiosk, the touch and feel of an end-user device, etc. There are a lot of interesting problems which have a user-experience component, but which are ultimately not user-end problems. For instance, the order in which Yelp or Amazon results appear is fundamental to the user experience of these systems and is something these companies spend a lot of time thinking about and working on. However, determining the results order would not be a good project for this class since this is an algorithmic problem, not a user interaction problem. Pick a project that lets you develop a set of interesting user interactions, not something that is fundamentally about under-the-hood machinery.
GROUP WORK

Peer Critique Group

Effective critique, both giving and receiving, is a key component of the design process. To develop and practice these skills, you will be assigned to a peer critique group, which will provide you with ongoing feedback on your individual project over the course of the term. The group assignments will be finalized on Canvas after the drop/add deadline. Please sit with your peer critique group when you first come to class; we will often begin each session with a check-in and discussion in these groups.

You will participate in in-class group or individual exercises each week. These exercises will give you an opportunity to practice skills we learn in class, so you can get some experience with them before you need to apply them to your homework and individual projects. These exercises may also be beneficial for you to practice rapid prototyping skills. Group assignments may be randomly assigned and posted in the Resources section of Canvas.

The purpose of the in-class group activities is not necessarily to generate a perfect or polished end-result, but rather to continually practice the design techniques and topics we will be covering throughout the term. Learning by doing is more effective than through passive listening. To encourage you in this, your participation grade will be determined in part by your consistent and ongoing engagement with your in-class group project.

At the end of each class when we are doing group work, please submit your work from that day via email to the instructor with a list of all group members who were there and worked on the project that day. These artifacts will serve as a base for your participation grade.
Weekly Assignments

Homework:

Each week there will be a homework assignment. **Homeworks will be due before 11:59 pm on WEDNESDAY.** Please post all homework assignments to that week’s homework class assignments on Canvas.

All homework is worth 4 points each. Late assignments will lose 1 point per day. While the focus is on quality instead of quantity, **not following the instructions will result in a deduction of points.** If you submit your assignment as a link (e.g., to a Google Doc), remember to give us edit access so that we can ensure that the homework was completed on time. You should not continue to edit your document after the submission deadline; this will be counted as late.

Reading Response:

Reading Responses must be submitted **by 11:59 PM on WEDNESDAY in Canvas.**

The reading comments should reflect points you found particularly interesting—for instance, because you found them provocative, you disagree with them, you think they relate to your own project in an interesting way, etc. The purpose of the reading comments is to show (1) you did the readings (so you can discuss and utilize them intelligently during class) and (2) you thought critically about them.

Grading Rubric

- Response shows that you engage critically with the material: 2
- Response shows that you summarized the readings without much more thought: 1 point
- Minimal or no response: 0
Zip.crits:

We will begin each class with (up to) 4 5-minute zip.crits.

A zip.crit is a rapid critique of an interface, object, design, etc. We will be rotating through the class roster and choosing two or three people to do a zip.crit each class. That person will select an interface, object, design, etc. At the beginning of the class, that person will introduce the object, interface, or design to us. He or she will have considered 5 pro and 5 con arguments about the design, the social impact, and be ready to discuss these with the rest of the class. You can receive up to 6 points for the zip.crit. Your grade will reflect your presentation, final critiques, and how you made use of the reading material in your critiques.

Grading Rubric

- Scope (critique is not too narrow or too wide): 2
- 5 positive aspects / 5 negative aspects of the item being critiqued and consideration of reading material (past or present material): 2
- Time (2.5 minutes or less): 1
- Impact: 1

Sign up for zip.crits here:
https://docs.google.com/spreadsheets/d/1iqDwq9nxWFyOMAhYVDpbnhX_vmt50EKzhYxhZkDT-iM/edit?usp=sharing

Design Notebook

As you begin to think about your individual project, you should create a design notebook—a place (physical or digital) where you collect as much information that relates to your project as you can find (e.g., screenshots or pictures of other systems that address a similar problem, printouts of messages in online forums where people discuss the problem you are working on, photos of things you encounter in the street, replies from Facebook to a question you posed to your social network, etc.). As you will discover, the design notebook can be a wonderfully effective source of inspiration and will help you generate both more ideas and better ideas for how to proceed with your project.
GRADING

You should do good work in this class because you care about the project you picked and because you want to learn how to design interactive systems. That said, we must adhere to university policy and use grades, so here is how grades will work in this class:

- Individual project: 68 points
  - Paper prototype: 10 points
  - Final digital prototype & write up: 20 points
  - Other project homework: 4 points each (8 weeks * 4 points): 32
  - Final presentation: 6 points
- Zipcrits: 6 points
- Reading comments: (2 points / class * 8): 16 points
- Class participation/In-class group work: 10 points

You will submit homework to class assignments on Canvas. Final Grades will be assigned according to the following scale:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Points</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>100%</td>
<td>Extraordinary achievement. Rarely given.</td>
</tr>
<tr>
<td>A</td>
<td>94-99%</td>
<td>Consistently distinguished performance in all course aspects.</td>
</tr>
<tr>
<td>A-</td>
<td>90-93%</td>
<td>Strong, solid achievement in most aspects of the work.</td>
</tr>
<tr>
<td>B+</td>
<td>88-89%</td>
<td>Good performance. Consistent with performance expected of students.</td>
</tr>
<tr>
<td>B</td>
<td>84-87%</td>
<td>Acceptable.</td>
</tr>
<tr>
<td>B-</td>
<td>80-83%</td>
<td>Borderline</td>
</tr>
<tr>
<td>C+</td>
<td>77-79%</td>
<td>Below expectations</td>
</tr>
<tr>
<td>C</td>
<td>73-77%</td>
<td>Well below expectations</td>
</tr>
<tr>
<td>C-</td>
<td>70-72%</td>
<td>Poor performance. This is a marginal grade which alerts students to their limited performance in a particular course.</td>
</tr>
<tr>
<td>Grade</td>
<td>Percentage</td>
<td>Grade Description</td>
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<tr>
<td>D</td>
<td>60-69%</td>
<td>Minimal. Performance not at a graduate student level. Student should review his/her progress in the program with the associate dean for academic affairs.</td>
</tr>
<tr>
<td>F</td>
<td>below 60%</td>
<td>Failed</td>
</tr>
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</table>

**LATE ASSIGNMENTS**

Many of our classroom activities will involve getting feedback from our peers, the GSI, and the instructor on the work you did for your homework. For this reason, it is important that students finish their homework in time and come to class prepared to discuss it. To encourage timely completion of assignments—and, thus, students’ ability to fully participate in the class—late homework assignments (those valued at 4 points each) will be penalized 1 point per 24-hour period. Unexcused zip.crits, late reading responses, and/or late prototypes will not be accepted. Unexcused late assignments will only exist under very special circumstances and with prior arrangement with the instructor.
ATTENDANCE

Students are expected to participate in class sessions as scheduled. Think of this class as part of our professional life and keep in mind that we would not fail to report to work without giving appropriate notice. Students are responsible for finding out what they missed in class by referring to the syllabus and to our peers. In-class group activities and class participation grade both rely on attendance. We will do individual and group activities in class each week. **Missing a significant number of classes, or class disruptions, will result in a deduction from the course grade.**

CLASSROOM ETIQUETTE

To create and preserve a classroom atmosphere that optimizes teaching and learning, we all share a responsibility in creating a civil and non-disruptive forum. Students are expected to conduct themselves at all times in this classroom in a manner that does not disrupt teaching or learning. Classroom participation is a part of your grade in this course. Our in-class discussions should be respectful and courteous to everyone, and relevant to the topic we are discussing. Our discussions are meant to allow us to hear a variety of viewpoints and this will happen if we respect each other and our differences. Our time is valuable and behavior which disrupts our learning process may lead to point reductions and/or removal from class.

This course works best when:

- We are all respectful of each other and each other’s time and ideas,
- When we are active participants in class discussions and activities,
- When we share our past experiences as it relates to the class.

Do your best to be on time to class. Please be in your seat and ready to begin class promptly at 1:00 PM.

*The classroom etiquette clause is an updated and modified version of East Carolina University’s Office of Student Affairs’ disruptive behavior clause here: https://www.ecu.edu/cs-studentaffairs/dos/customcf/classroom_disruption.pdf*
ACCOMMODATION FOR STUDENTS WITH DISABILITIES

If you think you need an accommodation for a disability, please let me know at your earliest convenience. Some aspects of this course, the assignments, the in-class activities, and the way we teach may be modified to facilitate your participation and progress. As soon as you make me aware of your needs, we can work with the Office of Services for Students with Disabilities (SSD) to help us determine appropriate accommodations. SSD (734-763-3000; ssd.umich.edu) typically recommends accommodations through a Verified Individualized Services and Accommodations (VISA) form. I will treat any information that you provide in as confidential a manner as possible.

Student Mental Health and Wellbeing

The University of Michigan is committed to advancing the mental health and wellbeing of its students, while acknowledging that a variety of issues, such as strained relationships, increased anxiety, alcohol/drug problems, and depression, directly impacts students’ academic performance.

If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, contact Counseling and Psychological Services (CAPS) at (734) 764-8312 and https://caps.umich.edu/ during and after hours, on weekends and holidays or through its counselors physically located in schools on both North and Central Campus. You may also consult University Health Service (UHS) at (732) 764-8320 and https://www.uhs.umich.edu/mentalhealthsvcs, or for alcohol or drug concerns, see www.uhs.umich.edu/aodresources.

For a more comprehensive listing of the broad range of mental health services available on campus, please visit: http://umich.edu/~mhealth/"

ACADEMIC INTEGRITY

Abridged version: Unless otherwise specified in an assignment, all submitted work must be the work of each individual student’s own, original work. If students are referencing others’ work, put it in quotes! If students are directly quoting, or building on others' writing, provide a citation. See the Rackham Graduate policy on Academic and Professional Integrity for the definition of plagiarism, and associated consequences.

Collaboration: UMSI strongly encourages collaboration while working on some assignments, such as homework problems and interpreting reading assignments as a general practice. Active
learning is effective. Collaboration with other students in the course will be especially valuable in summarizing the reading materials and picking out the key concepts. Students must, however, write their own homework submission on their own, in the individual student’s own words, before turning it in. Students who work with others on the homework must list any and all collaborators on the written submission. Each course and each instructor may place restrictions on collaboration for any or all assignments. Read the instructions carefully and request clarification about collaboration when in doubt.

**Plagiarism:** All written submissions must be the student’s own, original work. Original work for narrative questions is not mere paraphrasing of someone else’s completed answer: students must not share written answers with each other at all. At most, students should be working from notes taken while participating in a study session. Largely duplicate copies of the same assignment will receive an equal division of the total point score from the one piece of work and are subject to receiving negative credit. Students may incorporate selected excerpts, statements or phrases from publications by other authors, but they must be clearly marked as quotations and must be attributed. Cite any work that may come from or be inspired by the ideas of prior authors. Students may obtain copy-editing assistance, and may discuss ideas with others; however, all substantive writing and ideas must be the ideas of the individual student’s own, or be explicitly attributed to another. See the student handbook available on the UMSI intranet for the definition of plagiarism, resources to help you avoid it, and the consequences for plagiarism, whether intentional or unintentional.
Schedule

Week 1: What is interaction design? Approaches to design

Readings:
(No reading response due this first week. Week 2 responses should include week 1 AND 2 readings.)

Optional video: David Kelley at IDEO: “Designing Breakthrough Inventions”
http://www.cbsnews.com/video/watch/?id=50138327n

Homework:

Reminder: Sign up for, or be assigned, zip.crits

Short Biographical Statement:
A one paragraph biography of yourself to Canvas.

Include the following:
- Your prior education
- Work experience if you have it (if you no prior work experience, specify)
- Your background in interaction design if you have any. This could be particular skills you have or any software tools you know how to use related to design, prototyping, etc. If you have developed any kind of interactive system before, please note that too.
- A statement of what you hope to gain from taking this course
- A description of your best learning classroom experience (describe the classroom dynamics, interactions, and attributes contributed to this experience).

Grading Rubric: 4 pts.
- Address all five questions (4 points)
- Any missing criterion results in a reduction of -.5
Week 2: Understanding and Conceptualizing Interaction Design

Readings:


Optional/General FYI:

Homework:

*Individual Project Design Problem Statement:*
Submit a 1-page problem statement for your individual project. Specify the given neighborhood context. Describe what is currently done in the local neighborhood that relates to your idea (or what is missing). Finally, think about what the essential goals are that a tool would need to address that would, from your perspective, support this neighborhood activity in a robust way. Your goal is to consider the human and social processes as well as reflect critically on the ethics of your design. You can optionally cite related work or resources that will not count towards your one page limit, but this is not required.

**Grading Rubric:** 4 pts.
- Not describing a specific neighborhood context (-1.5)
- Does not summarize what is currently being done in the local neighborhood (-.5)
- Does not describe the essential functions a tool would need to support this neighborhood in a robust way (-.5)
**Week 3: Brainstorming**

**Readings:**


**Required, but just skim:**

Design Interfaces: [http://designinginterfaces.com/firstedition/](http://designinginterfaces.com/firstedition/)


Mobile-application related patterns:

Android: https://material.google.com/


**Homework:**

*Competitive Analysis (2 pages):*

Regardless of the particular problem/context you are focusing your project around, it is likely that someone has attempted a prior design in response to a similar issue. For this assignment, take a critical look at existing systems (digital and analog) within your context and articulate what their deficiencies are in respect to supporting your target activity. In industry, this is called “competitive analysis” and in academia “related work.” As you research these systems, compile a list of problems or frustrating aspects of the current solutions to your problem. This list can be a starting point for your thinking of how your own solution can do things better. Submit a paper or spreadsheet listing the problems and frustrations with other systems as part of your homework assignment (Bill Buxton calls such lists the “bug list”).


**Grading Rubric:** 4 pts.

- Includes four or more systems and articulates any deficiencies and strengths in respect to your proposed work (3) (-1 points deducted for each missing system)
- Does not discuss deficiencies and weaknesses (-.1 per system)
Week 4: Sketching to Ideate/Brainstorm

Readings:


Design Critiques (Choose 1 out of the 2 to read deeply and quickly skim the second):
Design Critique and the Creative Process, Cassie McDaniel
http://www.alistapart.com/articles/design-criticism-creative-process/

https://www.uie.com/articles/great_critiques/

Optional (though highly recommended):

Homework:
Sketching Alternatives I:
Take a 11”x17”piece of white paper and divide this paper into at least 8 squares. Sketch 8 solutions to your design problem, one in each square, writing a brief caption for each to help someone else understand the idea each sketch conveys. This assignment will help you to prepare for next week’s assignment.

- Focus on quantity not quality
- No two ideas should be alike
- Include ideas from existing products or prior research
- Every caption should include an active verb, conveying what the solution does to address the problem.
- If you get stuck, think about different contexts in which your system could be used to inspire new ideas
Be sure to refer to Point and Throw Pet Toy Sketch Examples in Canvas

**Grading Rubric:** 4 points

- 8 unique solutions (4 pts.)
- 6-7 unique solutions (3 pts.)
- 3-5 unique solutions (2 pts.)
- 1-2 unique solutions (1 pt.)

Note: In each case, it must be clear that each solution is unique. If you need to verbally explain the differences, it will not be considered unique.
**Week 5: Sketching to prototype**

**Readings:**

Dan Brown, "*Developing Web Site Documentation for Design and Planning*": Chapter 7: Wireframes

**Homework:**

*Sketching Alternative II:*

Take a 11”x17” piece of white paper and divide this paper into 40 2”x2” squares. Now, take your 8 solutions from last week (or 8 refined solutions). For each solution, sketch 5 workflows to help convey your design problem and solution. You should draw one workflow in each square and write a brief caption for each to help someone else understand the idea each sketch conveys.

A few important guidelines:

- Focus on quantity not quality
- No two ideas should be alike
- Include ideas from existing products or prior research
- Every caption should include an active verb, conveying what the workflow solution does to address the problem.
- If you get stuck, think about different contexts in which your system could be used to inspire new ideas

Submit a link to a digital version of your 40 squares (a scan, a photograph, etc.).

**Grading Rubric:** 4pts.

- Used 5 squares to represent a workflow for each of the 8 unique solutions (4 pts.)
- Used 3-4 squares to represent a workflow for each of the 8 unique solutions (3 pts.)
- Used 1-2 squares to represent a workflow for each of the 8 unique solutions (2 pts.)
- Used 1 square to represent a workflow for each of the 8 unique solutions (1 pt.)
- Used 5 squares to represent a workflow for each of the 6-7 unique solutions (3 pts.)
- Used 3-4 squares to represent a workflow for each of the 6-7 unique solutions (2 pts.)
- Used 1-2 squares to represent a workflow for each of the 6-7 unique solutions (1 pt.)
- Used 1 square to represent a workflow for each of the 6-7 unique solutions (1 pt.)
• Used 5 squares to represent a workflow for each of the 3-5 unique solutions (2 pts.)
• Used 3-4 squares to represent a workflow for each of the 3-5 unique solutions (1 pts.)
• Used 1-2 squares to represent a workflow for each of the 3-5 unique solutions (.5 pts.)
• Used 1 square to represent a workflow for each of the 6-7 unique solutions (1 pt.)
• Used 5 squares to represent a workflow for each of the 1-2 unique solutions (1 pts.)
• Used 3-4 squares to represent a workflow for each of the 1-2 unique solutions (.5 pts.)
Week 6: Personas

Readings:

Chapter 3 - *Modeling Users: Personas and Goals*, Alan Cooper


Chapters 2, 7, 8, 9 in Quesenbery, W. & Brooks, K. (2010). *Storytelling for User Experience: Crafting Stories for Better Design*. Brooklyn, NY: Rosenfeld Media. (Don’t worry, they are short.)


Homework:

*Personas:*

Develop 3 to 5 sample personas of sample users for your design. These may be chosen to be particularly emblematic of the audience(s) you are targeting. To make them as useful as possible, consider maximizing the diversity of characteristics amongst the personas you develop, such that they are illustrative of a wide range of user needs, motivations, skill levels and so forth. For example, three of these personas should be “pro” personas (e.g., this is who you are designing for) and at least one of these personas should be an “anti” persona (this is who you are not designing for).

**Grading Rubric:** 4 pts.

- 3-4 “pro” personas and 1 “anti” persona (4 pts.)
- 3-4 “pro” personas and 0 “anti” persona (3.5 pts.)
- 3 “pro” personas and 0 “anti” persona (3 pts.)
- 2 “pro” personas and 1 “anti” persona (3 pts.)
- 2 “pro” personas and 0 “anti” persona (2 pts.)
- 1 “pro” personas and 1 “anti” persona (2 pts.)
- 1 “pro” personas and 0 “anti” persona (1 pts.)
Week 7: Story Mapping

Readings:
“Chapter 5: You Already Know How” in Jeff Patton. *User Story Mapping*

Case Study: [http://vesperapp.co/blog/how-to-make-a-vesper/](http://vesperapp.co/blog/how-to-make-a-vesper/)

Note: You are not assigned to do the two readings below but may find it helpful to skim while selecting which digital prototyping tool best suits your needs.


Optional:

Homework:

*Story Map:*

Create a story map of your project, creating tasks and a narrative flow. Use your primary personas to capture variations of the tasks in the flow. Label groups of tasks as activities. Your work should be at the granularity that you use 50 Post-It size items in your story map of your individual project. Take a photo of your story map.

Write out your story map in PDF (or another program), include your photos in the document. Make sure it’s readable or won’t be graded!
Week 8: Wireframing & Tools

Homework:

QOC defense:
Using your sketches and/or storyboards (HW4) and scenarios (in-class activity), and the QOC method, work through the design considerations for one critical feature of your project. In ~2-3 pages of text, describe your design rationale: articulate 3 different approaches to this feature and consider the tradeoffs between these approaches and which one you want to adopt. Illustrate each with a diagram or wireframe of one complete interaction within your application.

Grading Rubric
- List of possible features of system and why: (.25)
- Critical feature is clearly stated (.5)
- Feature 1 approach and rationale: 1 (.5 for each)
- Feature 2 approach and rationale: 1 (.5 for each)
- Feature 3 approach and rationale: 1 (.5 for each)
- Design Defense: Explanation of final decision (.25)

You Lose Points if the following is missing:
- Target audience: (-.25 if not present)
- Project Statement: (-.25 if not present)
- Target Solution: (-.25 if not present)

Readings:

Optional resources
Case Study: Wii: http://iwataasks.nintendo.com/interviews/#/wiiu/miiverse2/0/0
Week 9: Paper Prototyping and Tool Selection

Readings:


Chameleon: From Wizadry to Smoke and Mirrors, Bill Buxton


Other resources

- GUI Prototyping Tools: http://c2.com/cgi/wiki?GuiPrototypingTools (Links to an external site.)


Paper Prototype:

The goal of this assignment is to learn how to use low-fidelity prototyping in the early stages of design. Using paper, sticky notes, scissors, tape, and any other supplies you may want to use, create a paper-prototype of your project solution. Focus on tasks and interactions. You do not have to prototype the whole system, but try to prototype as many of the interactions you are planning to implement in your medium-fi prototype as you can. Prototype at least 10 tasks and at least 10 interactions (interactions can be as small as clicking a button to select an item and as large as searching for an item and having an entirely new screen show up). Try to have a reasonable balance of some bigger and some smaller interactions--I want to see a rich and diverse set of interactions in your prototypes. To make this exercise as useful to you as possible, make sure to prototype all the interactions about which you are uncertain and for which you’d like to get feedback from your peers and me. In your write-up, describe the design decisions you made and what you might do differently if you re-designed your prototype. Your submission on Canvas should include a write-up of at least 1 page of single-spaced.

Bring your paper prototype to class next week.
**Week 10: Paper Prototype Peer Walkthrough + Working Session**

This week will be a working week. For the first portion of class, we will be evaluating each other’s paper prototypes. Any additional time will be allocated for all to catch up on their individual projects, to receive feedback from the instructor (and your peers) on the current direction of your design and to receive peer support on prototyping software. See grading rubric added to the final assignment for details.

**Readings:**

Chameleon: From Wizadry to Smoke and Mirrors, Bill Buxton

**Other resources**


**Homework:**

*Paper Prototype:*

The goal of this assignment is to learn how to use low-fidelity prototyping in the early stages of design. Using paper, sticky notes, scissors, tape, and any other supplies you may want to use, create a paper-prototype of your project solution. Focus on tasks and interactions. You do not have to prototype the whole system, but try to prototype as many of the interactions you are planning to implement in your medium-fi prototype as you can.

**Prototype at least 10 tasks and at least 10 interactions (interactions can be as small as clicking a button to select an item and as large as searching for an item and having an entirely new screen show up).**

Try to have a reasonable balance of some bigger and some smaller interactions--I want to see a rich and diverse set of interactions in your prototypes. To make this exercise as useful to you as possible, make sure to prototype all the interactions about which you are uncertain and for
which you’d like to get feedback from your peers and me. In your writeup, describe the design decisions you made, what did or did not work well in the process, and what you might do differently if you re-designed your prototype. Your submission on Canvas should include a write-up of at least 1 page of single-spaced text plus a video (using a phone camera is perfectly fine) of your paper prototypes. Bring your paper prototype to class for next WEEK.

Grading Rubric:

Paper prototype as demonstrated via video

5 points:
- Student prototyped at least 10 tasks and at least 10 interactions (interactions can be as small as clicking a button to select an item and as large as searching for an item and having an entirely new screen show up).

2 points:
- Students demonstrated a reasonable balance of some bigger and some smaller interactions (I want to see a rich and diverse set of interactions in your prototypes. To make this exercise as useful to you as possible, make sure to prototype all the interactions about which you are uncertain and for which you’d like to get feedback from your peers).

Writeup

3 points
- Students described the design decisions that were made (based on their target audience’s feedback), what did or did not work well in the process, and what you might do differently if you re-designed your prototype.

Points will be deducted IF:
- -1 point for every 30 seconds over : Prototyping video is greater than 2.5 minutes
- -.5 to -2 points : -2 If students did not specify what feedback they received from anyone (-2 if they didn't get feedback from anyone, -.5 if they only received feedback from their peers)
Week 11: High-Fidelity Prototyping

Readings:


Homework:
*Test your Paper Prototype:*
Take your paper prototypes back to potential users, stakeholders, audiences or other suitable representative if you do not have immediate access to your potential users. The goal is to talk with relevant stakeholders early in the process, before finalizing the design. This is central to any iterative design practice and crucial for understanding, if your project risks to not be used or receive resistance and for what reasons.

Submit new video to reflect the changes.
**Week 12: Possible Guest Speaker**

**Readings:**


Optional


**Homework:**

*Digital Prototype Version 1:*
First version of digital prototype. This should be based on the results from your final paper prototypes. By now you should have considered what tools you want to design your prototype in and start to translate your paper prototypes into a digital interactive prototype. Your final digital prototype should have at least 15 interactions, where an interaction is defined as having a trigger (e.g. click, button) cause an event (e.g. new screen). Your digital prototype should look polished and visually appealing, but the focus is on the interactions. It should look like something that you would be excited to show a client, or colleague, or boss. (Version 1 is a feedback-only assignment; it is a process step to ensure you are making progress on this large deliverable)
Week 13: Iterations and Feedback Session

Readings:
None.

Homework:

*Digital Prototype Version 2:*

Keep plugging away on your digital prototypes. Upload link to the current state of your project.
Week 14: Presentations

Readings:
None.

Homework:
While the final prototype and write-up are due by midnight on Wednesday, April 8, presentation of your projects will begin on Thursday, April 9 in class.

Presentation details
Presentation length: 6 minutes. This length will need to be strictly followed to ensure that everyone gets a chance to present their project and that we finish the class on time.
Presentation content: The main purpose of the presentation is to showcase to the class what you have been working on this term. To do this effectively in such a brief time, I’d suggest something like the following structure:

* A brief description of the social context of your design, of the goals of your project (e.g. “I created a prototype for a mobile phone app that enables X people to do X, Y, and Z”)

* Your design philosophy

* A high-level overview of your system.

* A walkthrough of one of two key features of the application. (Don’t try to do a live demo!)

* The rationale for an important design decision you had to make during the project.

The above is a suggested format, but this format is not required. If you think you can give an effective introduction to your project using a different format, go for it. Feel free to do whatever you think will give your peers and me a good understanding of what you did and how you thought about your project. (As long as it doesn’t take any longer than 5 minutes!)

Logistics: please provide a link to your presentation in the sign up sheet to be provided at least two weeks before this class. We’ll need to transition between people pretty quickly.
**Final Digital Prototype:**
Upload a link to your prototype or a video of your prototype to Canvas in your write-up. See below.

- Pros and cons of these approaches and tools for your project

4. **Design Process (10 points)**
- Describe how your design changed from in **Final Write-up:** Your write-up should be 3-5 pages single-spaced with sketches and screen shots as appendices, these don’t count for the page limit. Please don’t feel the need to add as many screenshots as you possibly can. Select ones that convey useful information. Focus on quality and polish as if you were delivering it to a client.

Suggested outline for write-up:
1. Problem statement (2.5 points)
2. Solution overview (1.5 points)
3. Describe the final design (4.5 points)
   - Describe the functionality (i.e., what you can do with it)
   - Provide a description of the main parts of the design flow. This is important because it will provide you with a record of how the design worked or was intended to work, long after the implementation no longer works. It could in principle also act as a deliverable to hand off to an implementer.
   - What was left unimplemented?
   - Sketching techniques and approaches
   - Tool(s) you used to develop the design
   - Show what the major changes were and why they were made.
   - Relate your design process and choices to the readings.
   - Reflect on your role as designer. What is your design philosophy and how did you apply it to this project? What values or societal norms did you intend to embed in your system? What values or societal norms did you intend to challenge or promote?

5. Impact (1.5 points)
- Discuss the (societal) impact that your design has on your selected context.

*Please upload your write-up as a PDF document to the Assignments section of Canvas (i.e., not the forum, as have been doing for previous assignments). Make sure that your write-up contains the link to your prototype.*
Optional Course Readings

