Interaction Design Studio - 711
Instructor: Alex Leitch
Office: 4111G
Office Hours: TBD
Email: aleitch1@umd.edu
Tuesday 2-4:45pm
Location: 0302H - Hornbake South

Course Description
Interaction design is the process of defining products and the broad services built around them. When interacting with systems, people build expectations and mental models of how things work. They learn what they can and cannot achieve. This course is about how to design for interactions that will resonate with your audiences: How the features and functions of a product get translated into something people find usable, useful, and desirable.

Through a series of lectures, discussions, in-class design practice, and projects, students will explore the role of interaction designers. Students will learn how to prototype interactive products, systems, and services, and how to defend their work through the cycle of brainstorming and shared critique. This is a studio class, focusing on production processes that are required to develop public-facing work. The studio is important both as a working space and a space for collaborative reflection. Studio practice also describes a working method. As such, the INST711 classroom will focus on two activities:

- Externalization: You will put your ideas and conceptualizations into tangible materials.
- Critique: You will both give and receive constructive feedback on your own work and the work of other students in class.

Student Learning Outcomes
On the successful completion of this course, students will be able to:
- Explain basic concepts, techniques, and knowledge of interaction design.
- Critically discuss common methods in the interaction design process
- Use visual thinking and communication techniques to develop design concepts
- Build prototypes at varying levels of fidelity and can evaluate them using appropriate methods
- Develop critiquing skills to analyze interaction design artifacts and concept design.

**Class Resources**

**Textbooks & Course Materials**

We will use research papers and book chapters from a variety of sources, which will be provided on the course website. There will also be readings from the following texts:


**Software**

- Sketch
- Adobe Creative Cloud
- Figma - http://www.figma.com

**Physical Materials**

A portion of this class will involve you learning to draw effective sketches. You are required to bring the following materials to every class.

- Black ball-point pen
- 40% gray or pale blue marker, 60% gray marker

**Workload Expectations**

You should anticipate that studying and completing class will require at a minimum of 13 hours of working time outside of class per week, or two full working days.

*Imagine that your university career is a demanding full-time job. The expectation would then be that you work 50 hours a week. Between 3 classes per semester, that is 16 hours per class per week. Now subtract the 3 hours of class time from that, and your expectation is thus at least 13 hours per week.*

**Tools for Class Participation**

Often, we will have project, homework, and working briefs in class. Here are some questions you should ask when you receive a brief.
1. Do you understand the project’s requirements?
2. How do you think the project’s objectives relate to interaction design?
3. How do the objectives relate to experience design?
4. Do you know of any other websites or applications that might help you investigate this topic?
5. What would you have thought of the topic the week before?
6. How did you make this design decision?
   a. What rules did you use? Why?
   b. What rules did you break? Why?

Course Schedule

Note 1: In addition to the assignments noted here, students are expected to complete a 200-250 word reading reflection each week, and to come to class prepared to discuss the readings and lecture with one another.

Week 1 - Basics of Interaction Design

Readings

- DoET Chap 1
- ID Chap 3 - Conceptualizing Interaction
- Bruce Tognazzini, First principles of Interaction Design
- “So You Want to Be an Interaction Designer” by Robert Reimann
- www.cooper.com/journal/2001/06/so_you_want_to_be_an_interacti

Lecture: What Is Interaction Design?

In-class: Analyse a pre-existing website using Shneiderman’s design rules.

Homework: In-depth evaluation using design rules of a digital product.

Week 2 - Brainstorming, Sketching and Critique

Readings

- DoET Chap 6
- Sketching User Experience Workbook: Ch 1-1.3, p 1-16.
- ID 2019 Ch. 2 - The Process of Interaction Design
- An Introduction to Design Thinking Process Guide
  - https://d.school-old.stanford.edu/sandbox/groups/designresources/wiki/36873/attachm
  - ents/74b3d/ModeGuideBOOTCAMP2010L.pdf
- “How to Run a Design Critique” by Scott Berkun
  - scottberkun.com/essays/23-how-to-run-a-design-critique
- www.smashingmagazine.com/2011/12/13/* the-messy-art-of-ux-sketching

Lecture: Effective sketching across materials.
In-Class: Develop a problem using Mad Libs Cards. Sketch an interface that could represent that problem. Using evaluation practice, see if the interface solves a problem. 

Homework: Sketch a mobile design version of a desktop application. Improve one specific interface problem in your chosen application.

Week 3 - Low-Fidelity Prototyping

Readings

- ID Ch 11 - Low-Fidelity Prototyping
- Sketching User Experience Workbook: Ch 1.4, p 1-16.
- The Skeptic’s Guide to Low-Fidelity Prototyping
  https://users.cs.northwestern.edu/~hunicke/MDA.pdf

Lecture: Games As Interface Design
In-Class: Using only what is available on your desks or in the room, create a physical game.
Homework: Assignment 1: In small groups, work together to convert a digital experience to a physical one, considering the affective sense you wish to evoke when the game is played.

WEEK 4 - Interfaces, A History

Readings

- ID Chapter 7 - Interfaces
- ID Ch. 4 - Cognitive Aspects

Lecture: Average Fits Nobody
In Class: Using your reading research and considering your work on assignment one, convert an interface from one sense use to another: Consider how a voice command could replace a key press, or how not having a finger might impact touch screen use. Sketch three examples of transmuted commands, then critique for cognitive factors.
Homework: Continue assignment #1

WEEK 5 - Interaction Design Patterns - Critique Week

Readings

- ID Ch. 12 - Design, Prototyping, Construction TKTKTKTK - DOES THIS GO HERE?
- Design Patterns: http://designinginterfaces.com/patterns/
Lecture: Interfaces as Interaction Surface (job talk)
In-Class: **Assignment 1 Due:** Bring in your physical prototypes of a game. Play them in class. Critique and adjust as we go, applying the MDA to consider and critique one another’s work.

Homework: Using your Mad Libs assignment cards, fill in your App Survey. Identify each interaction pattern you’ve placed in your application design.

**Week 6 - Corporate Visual Design & Communication**

**Readings**
- ID Ch. 13 - Interaction Design In Practice
- Google’s Material Design (Android Human Interface Guidelines)
  - [https://developer.android.com/design](https://developer.android.com/design)
  - [https://design.google/library/expressing-brand-material/](https://design.google/library/expressing-brand-material/)
  - [https://material.io/](https://material.io/)
- iOS Human Interface Guidelines

Lecture: Fit and Finish: Hand-made interfaces vs polished work, where to trust tools. What is a component library? How do we handle those?

In-Class: Trade your interaction patterns to a classmate. Convert interaction patterns into specific components and animations via sketching.

Homework: Analyse the individual affordances in your own apps and break out components into simple sketches. Convert three affordances/components into Google, and then into iOS affordances.

**Week 7 - Social Interaction**

**Readings**
- ID Ch. 5 - Social Interaction

Lecture: Sociability In Online Platforms, Gamergate, How do we tell stories and change interfaces, Strengths and Weaknesses of Social Engagement Online, Content Moderation
In Class: Critique of one another’s app surveys. Using these surveys, analyse the expected social affordances of one another’s applications.

Homework:
- Figma for UX Design
  - [https://www.lynda.com/Figma-tutorials/Figma-UX-Design/711832-2.html](https://www.lynda.com/Figma-tutorials/Figma-UX-Design/711832-2.html)
- Adobe XD Basics
Origami Studio for UX Design

Screencasting For Mac
  - https://www.lynda.com/iMovie-tutorials/screencasting-with-the-mac/53851-2.html?src=htrk=index%3a9%0alinktypeid%3a2%0aq%3ascreencast%0apage%3a1%0as%3arelevance%0asa%3atrue%0aproducttypeid%3a2

Assignment #2 - Following the Lynda tutorial and using homework from week 6, design a small library of common interface components in Figma. Ensure these can be shared.
  - You can use Adobe XD or Sketch but must share via Figma.

SPRING BREAK - INDIVIDUAL ASSIGNMENT

Week 8 - Critique Week

Readings

No readings - complete component library IN DEPTH.


In-Class: Trade Component Libraries via Figma. Critique component libraries. Sketch how you would use a peer’s library to design your own app from your app survey.

Pick groups for final assignment, Narrative Video.

Homework: Implement library critiques with an eye to handing off work to peers.

Week 9 - Dark Patterns

Readings
  - ID Ch. 6 - Emotional Interaction
  - Ruined By Design - Facebook gun reporting chapter
  - Addiction By Design Chapter 1: Interior Design For Interior States.
  - Suzanne Scacca (2018): Dark Patterns And Other Design No-Nos for Mobile.
  - Dark Patterns: darkpatterns.org

Lecture: Misdirection And Persuasion

In-Class: Make a bad design brief. Trade bad design briefs and work to reverse dark patterns while maintaining persuasion. Practice presenting positive patterns over negative ones.

Homework: With an eye to your final narrative project, design a potential dark narrative loop in Figma for your own problem from Week 7.
Week 10 - Storyboards and Concept Validation

Readings
- Lynda Barry - I Can’t Draw
- https://www.youtube.com/watch?v=Xbpb2cxKhaE
- ID Chap 11, specifically Chap 11.6.1
- Wally Wood’s Panels That Always Work

In-Class: Translate Wood’s panels into your own sketchbook, telling a story about application interaction.
Homework: Screen Development Milestone - Upload samples of screens that reveal how you are considering your application in context of narrative. Feel free to use Sketch, Figma, Origami Studio etc.

Week 11 - Data and Narrative

Readings
- ID. Ch. 9 - Data Analysis, Interpretation, and Presentation
- Bring to class everything you need to tell a story about an experience you had over spring break.

Lecture: Data visualization as narrative (Tufte).
In-class: Convert your experiences over break into a data visualization, and then illustrate them instead as a narrative.
Homework: Complete your in-class work. Design at least one data visualization component to be included in your final narrative video. Add in data visualizations to your group project application screens in a way that supports your narrative video goal.

Week 12 - Machine Learning and Data Science

Readings
-- TBD:
- Natural Language Processing to address user intent
- Aliexpress data training model
- Mechanical turk as secret “AI”

Lecture: GUEST SPEAKER: Machine learning and natural language processing in real user experience
In-class: Discussion about AI and what machine learning can and cannot do, how does it work? How does it relate to more traditional data analysis and data visualization?
Homework: Final project rough draft for presentation: Begin working on filmable screencast of application in motion. With groups, receive topic and begin laying out story for final video application.
Week 13 - Evaluation of Design Revisited

Readings
- ID Ch. 14 - Introducing Evaluation
- Disney Principals of Animation: https://td-u.com/the-12-principles-of-animation-according-to-disney/

Lecture: Principals Of Motion Design and why they matter.
In-class: Present applications in class and describe how they solve the problems they have brought up in their narrative design.
Homework: Refine applications based on in-class critique.

Week 14 - Evaluation Studies

Readings
- ID Ch. 15 - Evaluation Studies: From Controlled to Natural Settings

Lecture: Topics could include: VR/AR, games as policy development, real economics in pretend environments, defending your design decisions in real space, working with software developers, Agile Development?
In Class: Present full video storyboards and support work to peers. Work on application design based on story cues.
Homework: Make sure those videos are good to go.

Week 15 - Final Critique

FINAL CRITIQUE
In Class We watch and take notes on group project videos that tell us a complete story, with all relevant applications, of a user going about their day.
Course Evaluation

Projects

Projects — both individual and team — are a major component of your work. We will use in-class time to brainstorm potential project topics, find team members, work on group projects, and get feedback from classmates and the instructor. Each team will consist of 3-4 members.

Project 1: Digital to Physical (20%)
Learning objectives include:
Understanding basic principles of interaction design
Drawing as a means of visual exploration and ideation
Ideation and sketching
Low-fidelity prototyping
Understanding mechanic, dynamic, aesthetic framework

Project 2: Individual component library design (25%)
Learning objectives include:
Practicing component handoff
Framing and reframing a problematic situation
Making a pitch
Ideation with scenarios and storyboards
UI design patterns

Project 3: Team Narrative Design (30%)
Learning objectives include:
Rapid prototyping and iterative design
Narrative in UX
Video as a UX design tool

Participation

I will grade participation based on your engagement in the in-class discussion and attendance.

Assessment

Grade is based on the following breakdown:

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>15%</td>
</tr>
<tr>
<td>Critique Participation</td>
<td>10%</td>
</tr>
<tr>
<td>Project #1 - Game</td>
<td>20%</td>
</tr>
<tr>
<td>Project #2 - Library/App</td>
<td>25%</td>
</tr>
</tbody>
</table>
Syllabus Change Policy
This syllabus is a guide for the course and is subject to change with advance notice.

Academic Integrity
What is academic dishonesty?
Academic dishonesty is a corrosive force in the academic life of a university. It jeopardizes the quality of education and depreciates the genuine achievements of others. Apathy or acquiescence in the presence of academic dishonesty is not a neutral act. All members of the University Community - students, faculty, and staff - share the responsibility to challenge and make known acts of apparent academic dishonesty.

Students have a responsibility to familiarize themselves with violations of the Code of Academic Integrity. Among these include:
- Cheating: “Intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise.”
- Fabrication: “Intentional and unauthorized falsification or invention of any information or citation in an academic exercise.”
- Facilitating Academic Dishonesty: “Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.”
- Plagiarism: “Intentionally or knowingly representing the words or ideas of another as one’s own in an academic exercise.”

For further clarification or information on the Code of Academic Integrity:
http://www.studenthonorcouncil.umd.edu/code.html

Students with Disabilities
The University is legally obligated to provide appropriate accommodations for students with disabilities. The campus’ Disability Support Services Office (DSS) works with students and faculty to address a variety of issues ranging from test anxiety to physical and psychological disabilities. If a student or instructor believes that the student may have a disability, they should consult with DSS (4-7682, email Dissup@umd.edu). Note that to receive accommodations, students must first have their disabilities documented by DSS. The office then prepares an Accommodation Letter for course instructors regarding needed accommodations. Students are responsible for presenting this letter to their instructors.

Classroom Environment
TBD

Attendance Policy
University policy excuses the absences of students for illness, religious observances, participation in University activities at the request of university authorities and compelling circumstances beyond the student’s control. Students who miss a single class for a medical reason are not required to provide medical documentation, but students who are absent more than once are responsible for providing
various forms of documentation, depending on the nature of the absence. Course syllabi should specify the nature of the in-class participation expected and the effects of absences on students’ grades. For more information, see University Policy V-1.00G on Medically Necessary Absence.

**Extensions**

- Late work is not acceptable except in the case of a documented illness or extraordinary circumstances. All late work will be assessed a minimum penalty of 20% per week.
- Even with prior permission, no late work will be accepted more than 7 days after the initial due date. Students may not re-submit previously graded work or work produced for other courses for evaluation.

**Emergency Preparedness**

[http://www.umd.edu/emergencyprepareredness/](http://www.umd.edu/emergencyprepareredness/)

**CourseEvalUM**

Course evaluations are a part of the process by which the University of Maryland seeks to improve teaching and learning. The University Senate approved the implementation of a standard, online, University-wide course evaluation instrument. Each course evaluation contains a set of universal questions, and some are supplemented by questions from specific colleges. Across the University, course evaluations are being administered through a web-based system dubbed CourseEvalUM. Students who leave no “Pending” evaluations in their Evaluation Dashboard each semester can view the aggregate results of a sub-set of universal items online.

Across the University, course evaluations are being administered through a web-based system dubbed CourseEvalUM. All information submitted to the Evaluation System is confidential. Instructors and academic administrators can only view summarized evaluation results after final grades have been submitted. Instructors and academic administrators cannot identify which submissions belong to which students. This standardized set of evaluation results provides the University with useful information on teaching and student learning across the campus.

For additional info see Student Fast Facts at:
[https://www.irpa.umd.edu/Assessment/CourseEval/stdt_faq.shtml](https://www.irpa.umd.edu/Assessment/CourseEval/stdt_faq.shtml)