CS 124 – User Interface Design – Spring 2015

Who, When, and Where

Instructor: Jim Boerkoel, boerkoel@cs.hmc.edu, Olin 1265
When: M/W 9:35 – 10:50;
Lab F 10:00-10:50
Where: SHAN 3425
Grutors: Michael Culhane, Kate Finlay

About

This course is for students interested in designing computer systems that are both useful and usable for solving real-world problems. You will learn about four core principles of user-centric design: user and task analysis (needs finding), ideation, prototyping, and user testing (iterative refinement). Additionally, we will discuss the latest advances in cognitive and social psychology, HCI, UX technologies, and graphic design in an attempt to answer the questions:

- Who is your user?
- What makes for a natural, intuitive user experience?
- What makes design beautiful?
- What are our ethical and social responsibilities as designers?

Through a series of design investigations, you will work in teams to design applications that solve real problems facing our local community in a way that uniquely caters to specific user groups.

Please note: gaining programming experience and learning specific development technologies are NOT among the goals for this class.

Course Goals

By the end of the semester, students should gain:

- a basic understanding of traditional user interface design principles;
- experience with methods encompassing the full interaction design lifecycle;
- the ability to critique a design based on principles of human-computer interaction;
- practical experience communicating with real clients and users about design;
- the ability to think, speak, and write critically about advantages/disadvantages of new or emerging UI technologies and paradigms;
- an appreciation for socially-significant areas of Interaction Design current research.

Textbook

Copies of all required/recommended texts will also be available through the CUC library and in our own course library, which will be housed in Olin 1261.

Required – Coursepack (Available at Huntley Bookstore);
Design of Everyday Things (Revised and Expanded Edition), Norman. 0465050654

Recommended – Don't Make me Think (Revisited). Krug. 0321965515
http://www.usability.gov

Office Hours, Help Sessions, and Other Help

There are many opportunities to get help on assignments and course material:

- Jim will offer regular office hours. These are tentatively scheduled from 2:00 - 4:00PM on Thursdays. You are of course also invited to schedule 1-1 time to meet with Prof. Jim, please visit http://www.cs.hmc.edu/~boerkoel/index.php#calendar for details.
- Grutors are available to consult with teams about their projects as technical and other challenges arise. Please contact staff through Canvas to schedule a consultation.
- You may post requests for clarifications using the Canvas discussion or messaging tool. Please be careful not to post "spoilers". However, if you have a conceptual question about the material or a relatively "big" question about a homework problem, you should come and talk to one of us in person.
- **Communication Policy:** *We ask that you use Canvas rather than e-mail to communicate with the course staff so that we can answer your questions as quickly and efficiently as possible. Jim and the course staff will check Piazza at least once a day. If it has been longer than 48 hours and you have not received a response, please follow up by e-mailing Jim directly.*

Course Management Sites

- Reading assignments and design projects will be hosted and submitted online through our course's Canvas site: https://canvas.instructure.com/courses/909937

Course Requirements

- Reading Responses / In-class participation: Each lecture will be accompanied with a reading assignment and associated discussion questions. You are responsible for completing the reading, responding to the discussion questions, and coming to class prepared to contribute your ideas to the class discussion. You will submit your responses through Canvas prior to class.

  10% Extra Credit: 10% Extra-Credit will be rewarded if you read the additional optional reading (or find a relevant article on your own) and write a short 3-5 sentence summary.
- Investigations: Investigations are your opportunity to explore one or more of the ideas that we discuss in class either on your own or as a group. Many investigations are designed to help your group make meaningful progress on your course project and to provide opportunities for feedback and further discussion. Investigations will be submitted through Canvas. Typically, Investigation deadlines will on the Thursday after their introduction, at 11:59PM.
- Design Notebook: Everyone will keep an individual design notebook. This notebook will document your design process over the course of the project: important design decisions, changes to previous decisions, open questions, exciting milestones, preliminary results, etc. Feel free to include images (e.g., a sketch or prototype) or any other resources that you think will help clearly convey your design process.
- Midterm: There will be one exam (tentatively scheduled for the week of April 6-10). Details about this exam will be announced later in the semester.

- Final Project Deliverables: In addition to the Investigations, you will be required to make presentations about your project and to turn in code, documentation, and all supporting files. These final deliverables will be in lieu of a final exam in this course.

Grading

- Reading/Participation: 25%
- Investigations: 40%
- Midterm: 15%
- Design Notebook: 10%
- Final Project Deliverables: 10%

Please note: To receive a passing grade in this class, you must submit *all* Investigations and also pass each of the above course components.

Late Submission Policy

In general, work will not be accepted late. However, for individual (non-group) Investigations only, you have two free 24-hour extensions that you can use for any reason. You do not need to ask me in advance to take your extension. Beyond these free extensions, each Investigation will lose 33% of its value for each 24-hour period that it is late (weekends count). For group Investigations, please note on your submission if a particular group member is unable to make reasonable contributions.

Investigation Resubmission Policy

Students may resubmit up to one Investigation for regrade. Your new Investigation grade will be the average of the original score and the regrade score. Resubmissions cannot be used to recover late submission penalties. Resubmissions should be completed alone and e-mailed or given directly to Jim. The deadline for resubmissions is Monday, 4/24

Attendance

Due to the participatory and discussion-based nature of this course, attendance is mandatory. Unexcused absences will be handled as followed:

- Up to 2 unexcused absences: no penalty
- 3 or more unexcused absences: your final grade will drop by half grade (e.g., B+ to a B) for each unexcused absence

The mechanism we will use to enforce the 2 free absences will be to drop your two lowest Reading Response / Participation scores from the semester. Please use absences wisely; you never know when an unexpected clinic trip or job interview will pop up!

Exemption for Illness

If you get sick or confront some other emergency and can't attend class or turn in an assignment on time, we understand! To be fair and consistent, here's the policy. Visit Student Health Services or Monsour Counseling Services, get a note from a doctor or Dean Jacobsen

(or a dean at your home college if you're not a Mudder), and send it to Jim as a Canvas note. We'll work together to find an appropriate arrangement.

Collaboration and Appropriate Use Policy

You are encouraged to discuss problems you encounter with classmates, grutors, and Jim. Verbal collaboration with other students on individual assignments is encouraged. However, all submitted work should be completed by yourself individually and not a collaborative effort or copied from a common source (e.g., whiteboard).

You must indicate on each submission the names of people with whom you collaborated (project partners, discussion groups, etc.). You do not need to credit Jim or the grutors, however. The use of Internet resources (e.g., online tutorials) to aid in course work is acceptable as long as it does not substituted for an understanding of the course material. Plagiarism and direct use of external materials (e.g., books, online resources, or solution sets from previous offerings of this or other courses) to find hints or answers to any assigned work is strictly prohibited.

Questions About Grading

You may have questions or concerns about grading on occasion. When such issues arise, please send a Canvas note to the instructors indicating the specific problem and the nature of your question/concern. If you have a regrade request for an Investigation, please write a detailed justification and submit it directly to Jim. Regrade requests will not be accepted on reading responses. Please send any concerns regarding exam grading directly to Jim.

Writing Center

Many Investigations this semester will involve significant writing. You will be graded, in part, for the quality of your exposition.

The Writing Center provides a welcoming space for writers to get feedback on their composition projects, whether written, spoken or visual pieces. Writing Center Consultants are prepared to assist students in any discipline with any stage of the writing process, from developing an idea to polishing a final draft. Even the most accomplished writers benefit from seeking feedback at the writing center. The center is open Sunday through Thursday evenings from 7-11 and Saturday and Sunday afternoons from 3-5. It is located in Shanahan 1470, just up the walkway from the cafe. You may schedule an appointment through their website, www.hmc.edu/writingcenter, or you may simply drop in during normal hours. If you'd like an appointment outside of normal hours, you may email writing_center@hmc.edu with your request.
YOU WILL LIKELY FIND YOUR WRITING CENTER VISIT MORE VALUABLE IF YOU GO EARLIER THAN THE NIGHT BEFORE YOUR FINAL DRAFT IS DUE.

Acknowledgements
This course has adapted and adopted content from many wonderful sources, including Bjorn Hartmann, Maneesh Argawal, Janet Davis, and Christine Alvarado. Thanks to each for helping me create this course!

Tentative Schedule

This is a prospective course schedule, and is subject to change. All readings and assignments will be posted at least a week in advance.

Week 1: Introduction

W – 1/21: Introduction
Investigation 1: *Individual Design Assignment* — Due: 1/29

Week 2: Design Cycle

M – 1/26: Design Cycle
W – 1/28: Interfacing with Community
Investigation 2: *The Box* — Due: 2/5

Week 3: Sketching / Brainstorming / Task Analysis

M – 2/2: Sketching, Storyboarding and Critique
W – 2/4: Task analysis
F – 2/6: Brainstorming / Project Introductions
Investigation 3: *Group Brainstorm & Collaboration Plan* — Due: 2/12

Week 4: Conceptual Models

M - 2/9: Conceptual Models 1
W – 2/11: Conceptual Model 2
Investigation 4: *Individual Heuristic Review* — Due: 2/19

Week 5: Evaluation

M – 2/16: Heuristic Evaluation
W – 2/18 Human Information Processing
Investigation 5: *Contextual Inquiry, Task Analysis, Competitive Analysis* — Due: 2/26

Week 6: Input Devices and Prototyping

M – 2/23: Input Devices and Input Models
W – 2/25: Prototyping
Investigation 6: *Low-Fidelity Prototype* — Due: 3/5
Also Due: Team Assessment 1

Week 7: User Testing, Statistical Analysis

M – 3/2: Usability Testing
W – 3/4: Statistical Analysis / Engineering Review
Investigation 7: *Low-Fidelity Test and Iteration* — Due: 3/12

Week 8: Graphic Design / Visual Information Design

M – 3/9: Graphic Design
W – 3/11: Information Visualization
Investigation 8: *Graphic Design / Best Feature Redesign* — Due: 3/26

SPRING BREAK!!

Week 9: Historical UI

M – 3/23: Design Team Critiques and Discussions
W – 3/25: Historical UI
Investigation 8: *Interactive Prototype* — Due: **Sunday**, 4/5

Week 10: Future UI & Social Computing / Midterm

M – 3/30: Future UI / Social Computing
W – 4/1: Midterm / Presentation Prep – NO CLASS
Also Due: Team Assessment 2

Week 11: Interactive Prototypes

M – 4/6: Interactive Prototype Presentations 1
W – 4/8: Interactive Prototype Presentations 2
Investigation 9: *Advanced Topics Presentations* — Due: 4/16

Week 12: Advanced Topics / Future Interactions

M – 4/13: ATFI Presentations / Design Team Critiques and Discussions
W – 4/15: ATFI Presentations
Investigation 10: Pilot Usability Study — Due: 4/23

Week 13: Advanced Topics / Future Interactions

M – 4/20: ATFI Presentations / Design Team Critiques and Discussions
W – 4/22: ATFI Presentations
Final Presentation— Due: 4/27

Week 14: Final Presentations

M – 4/27: Final Presentations 1
W – 4/29: Final Presentations 2
Team Assessment, Final Video & Code