

INFO/COMM 345: Human-Computer Interaction Spring 2006

Teaching Staff

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Times and Locations

Lecture: Tuesday, 10:10 – 11:25, 213 Kennedy

Lab: Thursday, 10:10 – 11:25, 213 Kennedy

Course Overview

This course focuses on the design of computer interfaces and software from the users' point of view and is organized around a sequence of weekly topics. Using assigned readings, demonstrations, and group projects, students will study human-computer interaction, cognitive and social psychology, technical issues and other topics.

Prerequisites

Permission of instructor.

Readings

All readings will be available on electronic course reserve and Blackboard. With special request, the teaching team will provide paper copies of the readings to borrow.

Course Website

Announcements, course information, assignments, and links to external sources will be posted on the course website via Blackboard (<http://blackboard.cornell.edu>). Any changes to the syllabus will not be updated on the syllabus document itself, but they will be reflected on the course website. **It is your responsibility to check the Blackboard website regularly.**

INFO/COMM 345: Human-Computer Interaction

Spring 2006

Goals

The overriding goal in this course is for each student to creatively and thoroughly examine the different areas related to human-computer interaction. There are multiple objectives intended for a wide variety of interests and goals, including:

- Developing an awareness of the range of general human-computer interaction issues that must be considered in developing a system that people will use;
- Experimenting with creative solutions not necessarily limited to current technologies or contexts;
- Developing a framework for formulating, refining and implementing HCI designs;
- Synthesizing design concepts from a wide variety of sources, including theories from this and other courses, personal experience, and trade literature;
- Understanding the context, use, and implications of specific design choices;
- Developing teamwork experience during the project process

Course Structure

The course will be divided into two major sections: Methods of HCI and Issues in HCI. There will be a midterm examination between the two sections. Course material builds on itself as the semester progresses, and students will be expected to continue to incorporate previous topics into all assignments and discussions.

Group Projects

This class will be project-oriented. The project will involve the creation of a mockup of a computing interface in an iterative design process. In this process you will brainstorm, analyze and set the requirements for your system, design and construct a prototype, test it with users, and improve the design based on the evaluation results.

Group composition: Cross-disciplinary project teams will be assigned by the teaching staff. Your group will also be assigned to a project theme. The group project will adhere to the initial requirements of the theme, but the theme will be broad enough to allow you develop it into a variety of projects.

Teamwork skills: Working in a team can be difficult. It demands that team members clearly communicate their concerns, duties, and areas of expertise, but it also allows for the creation of more ideas and more carefully thought out projects. For these reasons, the group portion of the project is very important. You should consider working in your assigned team as an opportunity to develop your teamwork skills by contributing your expertise and receiving insights from your team members.

It is *imperative* that you bring any issues that arise in your group to the attention of the teaching staff as soon as possible. If you are having problems and you do not make them known, your project is likely to suffer and your group experience will be very frustrating. Please contact us before small issues become large conflicts that affect your ability to work together.

INFO/COMM 345: Human-Computer Interaction

Spring 2006

Grading

Course grades will be based on the following distribution:

- **Participation and Attendance: 10%**

Class Attendance: On-time class attendance is required. Please e-mail the TAs if you are unable to attend class. Absences without satisfactory explanation will result in reduction of the participation portion of your grade.

Class Discussions: You are expected to complete all required readings before each class discussion. Active participation in class discussions is expected and will be reflected in your participation grade.

- **Lab Exercises: 10%**

The class includes weekly lab exercises to provide students with an opportunity to apply design principles and concepts. Requirements for each lab assignment will be detailed on each assignment handout.

- **Midterm Exam: 20%**

The exam will allow students to demonstrate an understanding of the design principles, concepts and theories covered in this course by linking theory and practice.

- **Group Project: 60%**

1. **Brainstorming ideas (5%) – Due Thursday, February 16**

Students will present ideas based on the group's selected project theme, along with a brief description of their background, knowledge and skills that could be helpful in defining and working on design projects in these areas.

2. **User analysis (10%) – Due Tuesday, March 7**

Groups will identify potential users, apply techniques to gain insight into how they would use the system, and report on the user requirements for their project.

3. **User scenario & initial prototype (10%) – Due Tuesday, April 4**

Groups will produce user scenarios, capturing how the user is expected to interact with the system, and design an initial prototype of the system.

4. **Evaluation (10%) – Due Thursday, April 20**

Groups will evaluate their project prototypes by using your fellow classmates as subjects. Each group will be assigned a partner group, with which they will test their prototype and also act as subjects for evaluating their partner group's project prototype.

5. **In-class presentation (15%) – May 2 or May 4**

Each group will present to the class a short overview of the design process that they completed over the course of the semester. Presentations will be either in the form of a 15-minute talk, including questions and answers, or as an academic poster around which a discussion can be held.

6. **Final report (10%) – Due May 11**

In the final project report your group will reflect on the design process you embarked on during the course of the semester, including the collaborative team process.

INFO/COMM 345: Human-Computer Interaction Spring 2006

Course Schedule

Note: Readings, assignments, and topics are subject to change. Please consult Blackboard for the most up-to-date schedule and readings.

Wk	Tuesday	Thursday
1	<p style="text-align: right;">Jan 24</p> <p>Course overview</p>	<p style="text-align: right;">Jan 26</p> <p>Good design, bad design</p> <p>Readings: 1. Norman, D. (2002). <i>The Design of Everyday Things</i>, pp. 1-33</p>
2	<p style="text-align: right;">Jan 31</p> <p>Understanding and conceptualizing interaction</p> <p>Readings: 1. Dourish, P. (2001). A history of interaction. In <i>Where the action is</i> (pp. 1-23). Cambridge, MA: MIT Press. 2. Cooper, A. (2002). About Face 2.0, ch. 2. (Online via library.cornell.edu)</p>	<p style="text-align: right;">Feb 2</p> <p>Teamwork design process</p>
3	<p style="text-align: right;">Feb 7</p> <p>Supporting social interaction</p> <p>Readings: 1. Barabasi, A. (2003). Hubs and Connectors. 2. Preece, J. (2000) <i>Online Communities</i>, ch. 6</p>	<p style="text-align: right;">Feb 9</p> <p>Begin group project: Brainstorm project ideas</p>
4	<p style="text-align: right;">Feb 14</p> <p>Understanding user requirements</p> <p>Readings: 1. Preece, J., Rogers, Y., Sharp, H. (2002). <i>Interaction Design</i>, ch.7. 2. Chisnell, D. and Brown, M. (2004). Matching user and business goals. CHI 2004 Design Case Study.</p>	<p style="text-align: right;">Feb 16</p> <p>Cultural probes</p> <p>Readings: 1. Gaver et al. (1999). Design: cultural probes. <i>Interactions</i>, 6(1), pp. 21-29.</p> <p>Due: Assignment 1 - Brainstorming ideas</p>
5	<p style="text-align: right;">Feb 21</p> <p>Requirements and prototyping</p> <p>Readings: 1. Cooper, A. (2002) About Face 2.0, ch. 4-6. (Online via library.cornell.edu)</p>	<p style="text-align: right;">Feb 23</p> <p>Methods for understanding user requirements</p>

INFO/COMM 345: Human-Computer Interaction Spring 2006

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6	<p style="text-align: right;">Feb 28</p> <p>Designing for usability and experience</p> <p>Readings:</p> <ol style="list-style-type: none"> Hakim, J. & Spitzer, T. (2000). Effective prototyping for usability. SIGDOC '00. Cooper, A. (2002) About Face 2.0, ch. 7. (Online via library.cornell.edu) McCarthy, J. & Wright, P. (2004). Living with technology. In <i>Technology as experience</i> (pp. 1-22). Cambridge, MA: MIT Press. 	<p style="text-align: right;">Mar 2</p> <p>Discussion of qualitative data</p>
7	<p style="text-align: right;">Mar 7</p> <p>Usability evaluation</p> <p>Readings:</p> <ol style="list-style-type: none"> Dix et al. (1998). Human-Computer Interaction, 2nd ed. Ch 1, pp 405-442 (skip 11.5.1 on pages 416-427) <p>Due: Assignment 2 - User analysis</p>	<p style="text-align: right;">Mar 9</p> <p>Evaluation methods and Midterm review session</p>
8	<p style="text-align: right;">Mar 14</p> <p>MIDTERM</p>	<p style="text-align: right;">Mar 16</p> <p>Work on group projects</p>
	<p style="text-align: right;">Mar 21</p> <p>SPRING BREAK</p>	<p style="text-align: right;">Mar 23</p> <p>SPRING BREAK</p>
9	<p style="text-align: right;">Mar 28</p> <p>Interface design as control</p> <p>Guest lecture: Tarleton Gillespie</p> <p>Readings:</p> <ol style="list-style-type: none"> Lessig, L. (2000). "Architecting for Control." Keynote given at Internet Political Economy Forum, Cambridge Review of International Affairs: 2-13. http://www.lessig.org/content/articles/works/camkey.pdf Samuelson, P. (2003) "DRM {and, or, vs.} the Law." Communications of the ACM, 46(4): 41-45. http://www.sims.berkeley.edu/~pam/papers/acm_v46_p41.pdf 	<p style="text-align: right;">Mar 30</p> <p>Work on group projects</p>

INFO/COMM 345: Human-Computer Interaction Spring 2006

Wk	Tuesday	Thursday
10	Apr 4	Apr 6
	<p>Appropriation and engagement</p> <p>Readings:</p> <ol style="list-style-type: none"> 1. McCarthy et al. (2004). The experience of enchantment in Human-Computer Interaction. CHI Fringe '04. 2. Brown, B., & Bell, M. (2004). CSCW at play: 'There' as a collaborative virtual environment. CSCW '04. 3. Light, A. (2004). Designing to persuade: The use of emotion in networked media. <i>Interacting with Computers</i>, 16, 729-738. <p>Due: Assignment 3 - User scenario & prototype</p>	<p>Project Check-In</p>
11	Apr 11	Apr 13
	<p>Location-aware computing</p> <p>Guest lecture: Jenn Thom-Santelli</p> <p>Readings:</p> <ol style="list-style-type: none"> 1. Borriello, G., Chalmers, M., LaMarca, A. & Nixon, P. (2005). Delivering real-world ubiquitous location systems. <i>Communications of the ACM</i>, 48(3), 36-41. 2. Consolvo, S., Smith, I., Mathews, T., LaMarca, A., Tabert, J., & Powledge, P. (2005). Location disclosure to social relations: why, when & what people want to share. In <i>Proceedings of CHI'05</i>, 81-90. 3. Eagle, N. and Pentland, A. (2005). Social serendipity: mobilizing social software. <i>Pervasive Computing</i>, 4(2), 28-34. 	<p>Project Check-In</p>

INFO/COMM 345: Human-Computer Interaction Spring 2006

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12	Apr 18	Apr 20
	<p>Alternative User Interfaces: Ambient & Peripheral Displays</p> <p>Guest lecture: Jofish Kaye</p> <p>Readings:</p> <ol style="list-style-type: none"> 1. Weiser, M. and Brown, J.S. (1996). Designing Calm Technology PowerGrid Journal, v1.01 http://www.ubiq.com/hypertext/weiser/acmfuture2endnote.htm 2. Strong, R. and Gaver, B. Feather, Scent & Shaker. In Proceedings of CSCW'96, pp. 29-30. 3. Brave, S. and Dahley, A. (1997). inTouch: A Medium for Haptic Interpersonal Communication. Extended Abstracts of CHI '97 4. Kaye, J. (2004, January). Making Scents: aromatic output for HCI. Interactions, pp. 48-61. 	<p>Work on group projects</p> <p>Due: Assignment 4 - Evaluation</p>
13	Apr 25	Apr 27
	<p>Voice as User Interface for Ubiquitous Computing: A Commercial Perspective</p> <p>Guest lecture: Robert Rieger</p> <p>Readings:</p> <ol style="list-style-type: none"> 1. Ashe, M. (2005). Getting speech right: Six keys to better customer acceptance and enhanced ROI. eLoyalty Corporation. 2. Fluss, D. M. The practical guide to speech recognition. DMG Consulting LLC. <p>Browse these speech technology industry websites:</p> <p>http://www.speechtechmag.com/ http://www.tmaa.com/index.htm</p>	<p>Wrap-up and future directions</p> <p>How to develop a successful presentation and poster</p>
14	May 2	May 4
	Presentations (Assignment 5)	Presentations (Assignment 5)
Assignment 6 – Final Report Due May 11		