INF 385P – Introduction to Usability

Syllabus

Unique Number:	24915
Semester:	Spring, 2005
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Office:	SZB 562BB
Office Hours:	Thursdays, 11:00 a.m. – noon And by appointment.
Class Time:	Thursdays, 12:00 – 3:00 p.m.
Classroom:	SZB 546
TA:	I-Fan Chou ifan@mail.utexas.edu
Textbooks:	Norman, Donald A. (1990). The design of everyday things. New York: Doubleday. Mayhew, D. J. (1999). The usability engineering lifecycle. San Francisco: Morgan Kaufmann.
Three readings on reserve in the iSchool IT lab:	Carroll, J. M. (1997). Human-computer interaction: Psychology as a science of design. Annual Review of Psychology, 48, 61-83. Markman, A. B., & Gentner, D. (2001). Thinking. Annual Review of Psychology, 52, 223-247. Olson, G. M., & Olson, J. S. (2003). Human-computer interaction: Psychological aspects of the human use of computing. Annual Review of Psychology, 54, 491-516. Other readings will be added along the way.

Synopsis:

The rapid expansion of the Internet and e-commerce has brought software usability engineering into prominence. As more and more information exists in electronic form (and sometimes ONLY in electronic form), the storage and retrieval of information is increasingly a human-computer interface (HCI) design problem. As computing oozes into every nook of citizenry, it's increasingly important for software developers NOT to depend on their own intuitions as to what product designs are likely to be seen as usable. The way web and other user interface designers and developers address this intentionally is by pursuing a course of "user-centered design" (UCD). UCD involves employing a collection of usability engineering methods across the life-cycle of a software product.

The class will cover three major areas:
1 – the perceptual psychological, cognitive psychological, and other scientific underpinnings of usability (i.e., the emerging "usability science"),
2 – the usability engineering methods used in the pursuit of UCD, and
3 – the justification for the application of usability engineering in a software development project.

The course will entail three major instructional techniques:
1 – lecture on the scientific underpinnings and the methods of usability engineering,
2 – site visits to and from local companies that have usability labs, to see and hear demonstrations of methods as applied to real-world software design problems, and
3 – individual usability engineering projects, to be carried out by each student, with the results to be shared with the class.

Objectives:

The student successfully completing this class will:

- understand and be able to explain the rudimentary aspects of how human beings take in and process information,
- know what the methods of usability engineering are and have experience with some of them,
- understand and be able to explain why software developers should NOT depend on their own intuitions for what is a usable design,
- be able to make the arguments for cost-justifying a user-centered design approach,
- have had exposure to a variety of usability labs,
- know how to carry out a usability evaluation and write a usability test plan and report.

Grades:

Your grade will be based on three things:

1. your general contribution in class (30%),
2. a "white paper" on some topic in the area of science applied to the design of human-computer interfaces (30%), and
3. a final project (work in pairs) entailing the usability engineering of a web site or traditional software user interface (40%).

Late Assignments:

Your grade will be docked one grade per day late, for your written assignment. As for make-up exams, I will truly hate to have to create a second exam. But if you're sick, or have some other good excuse, please call me in advance.

Etc.:

- If you have a question, please ask. I will be very receptive to emails at any time, and phone calls before 10:00 p.m.
- Attendance matters. When you aren't here, you deprive your classmates of your shared wisdom.
- Any student with a documented disability (physical or cognitive) who requires academic accommodations should contact the Services for Students with Disabilities area of the Office of the Dean of Students at 471-6259 (voice) or 471-4641 (TTY for users who are deaf or hard of hearing) as soon as possible to request an official letter outlining authorized accommodations.

Schedule (note, the site visits are tentative as of now – 1/22/2004):

Week	**Date**	**Topics**	**Due at the beginning of class**
1	1/20	- Introduction: What is usability engineering? - The context of usability. - Course logistics, and syllabus review.	
2	1/27	- Norman book - Mental models	- Read Norman book. - Read Markman and Gentner article. - One example each of good and bad design.
3	2/3	- The science and practice of usability - Perception and cognition	- Read the Carroll article and the Olson and Olson article.
4	2/10	- Lab visit: SBC - Host: Phil Kortum, Bob Bushey - Method: Needs analysis	- Read Chapters 1 - 6 in the Mayhew book.
5	2/17	- Kate McLagan, How to make a presentation; advocating for your usability data	
6	2/24	- Lab visit: UT Usability Lab - Hosts: Bias, and John Slatin - Methods: End-user testing, Accessibility testing	- Read Chapters 7 – 17 of the Mayhew book.
7	3/3	- Class presentations on white papers.	- White paper on a topic in

			the science of usability.
8	3/10	- Lab visit: BMC Software - Host: Scott Isensee, Eugenie Bertus - Method: Prototyping. - Method: Bridge Methodology.	
9	3/24	- Discount usability engineering methods	- Test plan for project.
10	3/31	- Panel discussion of local usability professionals	
11	4/7	Workshop – We'll help each other with our usability evaluations. Run as test subjects. Review test plans. Review test reports. Whatever.	
12	4/14	- Game interfaces - Aaron Thibault, IC^2 - Shannon Lucas, on some work we've done for Ion Storm	- Read Chapters 18 – 21 of Mayhew book.
13	4/21	Oral presentations of projects	- Written projects
14	4/28	Oral presentations of projects	
15	5/5	Oral presentations of projects	

Possible Topics for White Paper:

- Is the web special, for UI design? Web vs. GUI design.
- Usability engineering of user documentation.
- Usability and training.
- Usability and internationalization.
- Accessibility.
- Organizational challenges for usability.
- Wireless usability.
- PDA usability.
- Usability and kids.
- Special concerns for e-commerce.
- Gaming interfaces.
- Cost-justifying usability: Measuring return-on-investment for your usability engineering dollar and hour.
- Color and culture.
- Motion perception.
- Remote usability testing.
- Automated usability evaluation tools.
- Web UI standards.
- Scientific comparisons of the effectiveness of various usability engineering methods.
- Usability vs. learnability vs. discoverability.
- What's new on the usability horizon?

Many, many other topics would be good. Get verification of paper topic from class professor.