Course Overview
ISYS 310 Human Computer Interaction II
Winter 2004, Dr. Gerry Stahl

Course Description

This course focuses on *the design and evaluation* of *interactive systems* from a user-centered perspective. You will explore and learn about how people and groups of people perceive, use, share and communicate about information in work and non-work situations, and you will learn how interaction technologies can take these human issues into account. You will become familiar with basic design principles and evaluation techniques in the field of human-computer interaction (HCI).

When you have completed this course, you should be able to:

- Describe the scope of study of HCI and Interaction Design
- Recognize the importance of User-Centered Design -- and the consequences of not paying attention to it
- Understand basic principles of human memory, perception and learning and how these relate to graphical user interface design
- Describe the interaction between people, the work they do, the information systems they use, and the environments in which they work
- Adopt a user-oriented approach to the design of interactive computer systems
- Adopt a user-oriented approach to the evaluation of interactive computer systems
- Find and interpret the current literature in human-computer interaction

Focus this Term

This course is about how to conduct research about users of software. You will experience such research from the perspectives of a user, an experimental subject and a researcher. This term, a section of ISYS 310 and a section of INFO 610 will be coordinated in performing a number of research activities such as videotaping, interviews, surveys and focus groups. Because ISYS 310 is primarily about design and INFO 610 is primarily about analysis, students in INFO 610 will analyze some of the activities of the student groups in ISYS 310, who will act as users and designers in these research activities.

The goal of the course this quarter is to explore interaction design for a particular problem:

> With the growth of the Internet and digital libraries, there are new potentials for collaborative learning. For instance, people coming to a digital library could join together with other people who have similar interests

to learn together. We will investigate the task of designing software for the formation and support of teams of students to engage in collaborative problem solving of mathematics at mathforum.org.

This problem is a topic of leading-edge research. We will approach this real-world problem systematically using HCI methods of task analysis, system design and user-centered evaluation. During the quarter, teams of students in the course will develop a web-based portfolio presenting their solutions to this problem.

Course Approach to Learning

This course will engage in *collaborative learning*. You will learn by applying HCI methods in projects conducted by small groups of students.

There will be weekly activities for hands-on engagement with the topics of interaction design. After you form into small project groups, you will have projects to try out the ideas you are studying by sharing, discussing and negotiating your creative ideas with the other members of your group. Your group will decide on a presentation of the work you do to share with the rest of the class. By the end of the course, your group will have a portfolio of small projects, including documentation of the ideas, sources and interactions that went into your group work process.

You will learn by reading, reflecting, applying, explaining, sharing, critiquing. Because interactions are carried out on-line and results are displayed on the Web, you will have a record of your learning.

Please note: This course requires extensive online group work, supported by Blackboard. You will be required to use the Blackboard "virtual classroom" chat/whiteboard software. You will have to meet online with your group throughout the week and to develop a website with weekly presentations (if you have not done this before, you will learn how to do it in the course). You may have to use the computers in the CRC if you do not have a high-speed Internet connection on your own computer. You will work hard and learn a lot. In addition, this term, the project groups in your class will be studied by students in another HCI course. You will cooperate with them and you will be able to see the results and conclusions of their studies. This section of ISYS 310 is taught differently from what you might be used to. Taking this course means you have agreed to try the approach of this course as described in this Course Overview.

Course Textbook

The course content is presented by the textbook. There will be no lectures on HCI topics. You are expected to read the book carefully, take notes and be critical. There will be a threaded discussion area to raise questions, make comments and discuss the reading with other students and the instructor.

There is one required textbook, and some supplementary readings that will be made available on-line. You will be reading the textbook carefully from cover to cover. The textbook that you must purchase is:

> Preece, Rogers & Sharp (2002) "***Interaction Design: Beyond Human-Computer Interaction***." Wiley. Note: This is a new book; do *not* get the 1994 book by the same authors entitled "Human-Computer Interaction" by mistake.

This is an excellent, up-to-date and thorough book. It is very carefully designed to give you a systematic introduction to the broad field of interaction design, which has replaced the more traditional narrow definition of HCI as user-interface design.

Course Assignments

The main reading assignments are from the textbook and are listed below. They will be supplemented by short additional readings. There will be weekly project assignments – mostly group projects. All projects are due online by midnight Sunday night.

Week	Start date	Topic	Chapter	Project	Deadline
1	Jan 6	Intro to HCI	1	Lab math problem	Jan 11
2	Jan 13	Foundations	2 & 3	BB math problem	Jan 18
3	Jan 20	Foundations	4 & 5	F2F math problem	Jan 25
4	Jan 27	Design	6 & 7	Understand group work	Feb 1

5	Feb 3	Design	8 & 9	Establish requirements	Feb 8
6	Feb 10	Evaluation	10 & 11	Conceptual design (individual assignment) BB math problem	Feb 15
7	Feb 17	Evaluation	12 & 13	Interactive prototype	Feb 22
8	Feb 24	Examples	14 & 15	Heuristic evaluation (individual assignment)	Feb 29
9	Mar 2	Review	--	Cognitive walkthrough	Mar 7
10	Mar 9	Reflection	--	Portfolios & reflection report (individual assignment)	Mar 17

Course Requirements

- Read the textbook carefully. Take notes. Think about the exercises in the chapters.
- Discuss the textbook and other course issues in the class discussion board. Each week, as soon as you have finished a reading, enter a comment or question in the Blackboard discussion board; return a couple days later to respond to the discussion.
- Collaborate actively in a project group. Participate fully in all group projects.
- Search for other resources (interactive designs in commercial products, informative websites, research papers, etc.) related to the readings and share these with the rest of the class in the discussion board.
- Document your design rationale and the use of techniques from the textbook or other sources that led to your weekly designs.
- Conduct your collaboration on-line, and archive chats and other interactions, so that you and other course members can review and reflect on the design process.
- At the end of the term, submit a reflection paper of about 10 single-spaced pages. This should be a reflection from your personal, individual perspective on what you accomplished in this course, what you learned, and how you would continue the research of your group if your group had another 10 weeks to work on it. You should prepare notes for this throughout the term.

Course Grading

The course work will involve class discussions and weekly group or individual projects. Grading will be based half on your individual participation in the class and in your group, and half in the grade of your project group for its portfolio of solutions to group projects.

50%	**individual**	
	20%	Participation in project group
	5%	Careful study of course readings
	5%	Participation in class discussions
	10%	Participation in Blackboard discussions
	10%	Individual Web portfolio
50%	**group**	
	10%	Quality of group products
	10%	Rationale for approach and write-up
	10%	Use of techniques from textbook and other sources – e.g., review of the research literature
	10%	Creativity of presentations to class
	10%	Group Web portfolio

grades	
A	91-100%
B	81-90%
C	71-80%
D	51-70%
F	0-50%

Course Web Space

A special web space has been set up for this course: http://iisweb.cis.drexel.edu/stahl/winter04/

This includes personal, group and course spaces. You will set up your personal web space for use in preparing materials for the course. You will work with your group to develop a group portfolio during the quarter.

To set up your personal web space, go to ftp://iisweb.cis.drexel.edu/stahl/winter04/ and login with username=isys310 and password=310isys. You may want to set up a directory on your local harddisk to mirror what goes in the web space – or you can use a tool like FrontPage or DreamWeaver. Create a subdirectory and name it with your first name – all lower case and no spaces. Then create your homepage as a file named index.html and save it in this new subdirectory. You can use Word to design your homepage, including formatting, diagrams and digital pictures. If you use Word, do a SaveAsWeb. This will save your page as an HTML page for the Web. Be sure that any pictures and linked files are included in your subdirectory. Then publish your homepage, etc. to your Web Space. To do this you can open your IE browser to the ftp address above and drag your new subdirectory and its files into the ftp site. Then close your browser and re-open it with the http address above, followed by your first name to see if it looks like you intended.

Privacy Notice

- Your work in this course will be studied by students taking another HCI course, INFO 610. You will be expected to participate in videotaping, interviews, surveys and focus groups about collaborative math problem solving.

In general, all work and communication in this course should be considered public.

- Any communication on the Internet may end up being seen by people for whom it was not originally intended.
- The web spaces for this course can be viewed by anyone in the world through the World Wide Web.
- The instructor and other Drexel faculty, students and staff may have access to anything in Blackboard or the web spaces.
- Chats and discussions should be archived so that students in the class can analyze them as part of our reflection on the collaborative activities we are trying to support.
- Future researchers may have access to these materials as data. Although they do not have permission to publish any data about you and although they should ensure anonymity and confidentiality of all personal data, you should assume that activities taking place in this course may be subject to viewing.
- Students in future courses may have access to your work, particularly the group portfolios.

Instructor's Background

Hi. My name is Gerry (pronounced like "Jerry"). For urgent or personal questions, you can contact me directly by email at Gerry.Stahl@drexel.edu . However, it is often better to ask questions about the textbook, weekly assignments or other aspects of the course through the class discussion board so that everyone in the class can see and respond to your questions and my answers.

My professional research area is the field of CSCL (Computer-Supported Collaborative Learning). I think that collaborative learning is an exciting and especially effective way to learn. I believe that there is great potential to design good computer support for it. I have been experimenting with a number of CSCL prototypes and have written many papers on the theory, design and evaluation of interactive systems to support collaborative learning. We will be taking advantage of what I have learned from my research in this course, and I hope you will benefit from this.

My background is in computer science and philosophy. Last year I taught HCI courses at Drexel; the previous year I worked at a large research organization in Germany; before that I was a Research Professor at the University of Colorado in Boulder. The 2002 international CSCL conference was at Boulder and I was the Program Chair for it; the 2003 one was in Norway and I was in charge of the workshops there; the next one will be in Taiwan and I will be in charge of tutorials there.

Let me know if you have any questions about my background or check out my home page, where you can see more details and read my papers: http://www.cis.drexel.edu/faculty/gerry.