

Course Overview

INFO 608 Human-Computer Interaction

Spring 2007, Dr. Gerry Stahl

Course wiki site: <http://mathforum.org/vmtwiki>

Course Description

INFO 608 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, and 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 interaction 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.

But beyond these standard HCI goals, this course is intended to give you hands-on experience in actually designing and evaluating human-computer interaction and computer-mediated human-human interaction. It should also give you a taste of leading-edge, future-oriented research in HCI, since HCI is a rapidly changing field.

Focus this Term

This quarter, the course will address issues that are important for HCI today and in the future:

- *Social Computing*. How can you design software to support interaction among people in a community?
- *Collaborative Learning*. How can you design software to support learning in and by groups?
- *Knowledge Construction*. How can you design software to help groups of people access relevant information resources and build shared knowledge?
- *Community Building*. How can you design software to increase the sense of community among users?

The hands-on class project this quarter is to explore interaction design for a particular problem that illustrates these course issues. The problem underlying the weekly group assignments is:

How should a particular system that is being designed, developed and researched at Drexel—the Virtual Math Teams (VMT) online environment—be designed to enhance social computing, collaborative learning, knowledge construction and community building?

Students in the course will be divided into project groups working on the following design project for extending the VMT environment:

Social Networking: Design of new functionality for the VMT environment to support social networking among students interested in discussing mathematics. This may include how students can define their own profiles, search for profiles of people they might want to join in a VMT exercise, invite people to new rooms, rank their experiences with different exercises and people, etc. In other words, define ways to make VMT into a social community where middle-school and high-school students will want to go, invite their friends, meet new people, and discuss math.

This design problem is typical of leading-edge research. Your ideas in this course may be adopted within the Virtual Math Teams project at the Math Forum @ Drexel.

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 interface design concepts and present and document their solutions to these design problems.

The goal of the course is the creation of a Wikipedia-like site on the topic of “Designing Social Interaction Software” from an HCI perspective.

Course Approach to Learning

This course will engage in *problem-based collaborative learning*. You will learn primarily 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 assignments 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 prototype and scenarios for testing a design of new social networking functionality.

You will meet online with your group several times a week in a VMT chat room. You will produce two group presentations most weeks: (1) a presentation of a phase of design work on the course project and (2) a group analysis of a related reading or small set of readings. Most course work will be closely tied to the group projects, which will require good group collaboration. You will work with a group of other students who can meet online at mutually convenient times.

The course will be taught collaboratively: most of your learning will be from interaction with the students in the class. The group work will be organized and conducted by you and the other students. The readings will be discussed by you. By participating actively in the teaching of the course, you will learn much more than by passively observing.

Because we will be studying computer support for online social networking, you will need to review your own networking activities in this course. Therefore, it is important that all your contact with other students on the class about the course take place through the special online environment (chat, whiteboard, wiki, messaging system) used for the course, where your interactions will be persistent

and visible. Do not discuss the projects or make meeting arrangements using IM, email, telephone or face-to-face.

Please note: This course requires extensive synchronous online work in small group sessions—scheduled to be as convenient as possible for all participants. The course is about interaction via networked computers and you will have to experience quite a bit of this yourself. You will have to meet online with your group throughout the week—probably for three hour-long sessions most weeks. You will need to check the course online environment daily. You will work hard and learn a lot. This course 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. *If you are not prepared to do this, you should not take this section of INFO 608.*

Course Textbook

The course content—HCI theory, methods, key concepts, background knowledge—is presented by the textbook and other readings. You are expected to read the book carefully, take notes and be critical. There is one required textbook, and weekly supplementary readings that are available on-line. You will be reading the textbook carefully from cover to cover. The textbook that you must purchase is:

Preece, Rogers & Sharp (2007) "Interaction Design: Beyond Human-Computer Interaction." New, revised edition. Wiley.

This is an excellent, up-to-date and thorough book. It is lively, entertaining and readable. 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 online readings as listed below. There will be weekly project assignments—mostly group projects. The readings are carefully coordinated with the projects; if you fall behind in the readings, you will not understand how to do the weekly projects correctly. All projects are due online by midnight Tuesday night.

Wk	Due date	Textbook	Reading	Project
1	April 10	Ch. 1 & 2	“Computer support for knowledge-building communities”	Design of Koi Resort social networking
2	April 17	Ch. 3 & 4	“Share globally, adapt locally”	Literature search on social networking and Web 2.0
3	April 24	Ch. 5, 6 & 7	“The Virtual Math Teams project: A global math discourse community,” “Groupware goes to school”	Analysis and statement of problems in social networking
4	May 1	Ch. 8 & 9	“Computer-supported collaborative learning: An historical perspective,” “The integration of synchronous communication across dual interaction spaces”	Establish requirements with use cases
5	May 8	Ch. 10 & 11	“Five reasons for scenario-based design,” “Social practices of group cognition in virtual math teams”	[Individual assignment] Conceptual design paper
6	May 15	Ch. 12 & 13	Heuristic evaluation readings, “Analyzing and designing the group cognitive experience”	Interactive prototype and scenario
7	May 22	Ch. 14	Cognitive walkthrough readings; “Supporting group cognition in an online math community: A cognitive	Heuristic evaluation of prototype

			tool for small-group referencing in text chat”	
8	May 29	Ch. 15	“Sustaining group cognition in a math chat environment”	Cognitive walkthrough of scenario
9	June 5		“Meaning making in CSCL: Conditions and preconditions for cognitive processes by groups”	Final design for social network support
10	June 12			[<i>Individual assignments</i>] Textbook Journal; Reflection Paper

Course Requirements

TEXTBOOK JOURNAL: Read the textbook carefully. Take notes in a weekly journal form. For each chapter, comment on what you find most interesting and what you find most helpful for the group project. This weekly journal will be submitted as a final paper.

GROUP READING PROJECTS: Each week discuss the assigned readings with your group. Formulate a group analysis of the reading. Identify its most important contributions. Review it critically. Discuss its relevance to the course themes. A group statement on the reading must be posted by the due date. You may come back later to revise your statement and to comment on the statements of other groups.

GROUP DESIGN PROJECTS: Collaborate actively in your project group. Participate fully in all group projects. You are responsible for making your group a successful collaborative experience in which everyone participates, contributes and learns. Each week, work on that week’s phase of the course project and post a group report. A group report on the week’s assignment must be posted by the due date. You may come back later to revise your statement and to comment on the statements of other groups.

MIDTERM CONCEPTUAL DESIGN PAPER: Submit a written document of about 5 single-spaced pages containing your conceptual design for the course project, i.e., an extension to VMT to support social networking. Follow the detailed instructions. This is an individual assignment and should be emailed to the instructor.

FINAL REFLECTION PAPER: Submit a paper of about 5 single-spaced pages containing your reflections on the course. This should be a reflection from your personal, individual perspective on how you felt the course met your needs. You should demonstrate what you have actually done in the course and what you have learned. For instance, use the concepts and principles from the textbook and readings to analyze your work on the group design projects and to reflect on the issues that your project confronted. Discuss what your group would do if it had another 10 weeks to work on the project. Follow the detailed instructions. This is an individual assignment and should be emailed to the instructor. It is an opportunity to provide meaningful feedback to the instructor.

FINAL TEXTBOOK JOURNAL: Submit a written document of about 5-10 single-spaced pages containing your critical reflections on the course textbook. How did the chapters of this textbook help you to understand the course issues and the group projects? What other topics would have helped to have readings about them? Can you suggest some readings that might be helpful? Which chapters or sections did you enjoy the most or the least? Which were the most or least appropriate for INFO 608 in terms of the content, style, relevance, etc.? Include your weekly journal entries. Follow the detailed instructions. This is an individual assignment and should be emailed to the instructor.

Course Grading

The course work will involve readings, weekly group projects and individual papers. Grading will be based partially on your individual participation in the course and in your group, and partially on the grade of your project group for its portfolio of work on its project. Grading is *not* curved: it is possible for all groups and even all individuals to earn an A in this course. Most students who take an honest interest in the course and exert reasonable effort in *all* aspects of the course can receive an A. Failure to do your share in your group work, to do the reading or to write an adequate midterm design paper, final reflection paper or final textbook journal will lower your grade. Because groups all report their work frequently, you can evaluate for yourself how your group is doing compared to the other groups. Your submitted papers will clearly reflect how well you have worked and learned individually. Assume that your grade will be an accurate measure of what your group and you have accomplished in this course.

60%	individual	
	15%	Participation in project group
	15%	Midterm conceptual design paper
	15%	Final reflection paper
	15%	Final textbook journal paper
40%	group	
	10%	Quality of group collaboration
	10%	Use of techniques from the readings
	10%	Quality of readings discussions
	10%	Quality of group design projects

A+	98	100
A	92	97
A-	90	91
B+	88	89
B	82	87
B-	80	81
C+	78	79
C	72	77
C-	70	71
D+	68	69
D	62	67
D-	60	61
F	0	59

Generic Information

Problems & Questions. There is a section of the course wiki for raising questions about the course. This is the best place to raise questions because other students may have the same question and they can benefit from seeing the answer; also other students can respond with their views on the issue. If it is an urgent or personal problem, email the instructor. If you believe that your group assignment is not going to work out, discuss it with the instructor.

No Excuses. No one is interested in excuses. If you need to miss any group activity, such as a working meeting, notify the other members of your group as soon as possible and explain how you will contribute to the group. You are responsible for doing your share of the group work during the term; when you ask others to cover for you, let them know how you will make up for it. Everyone knows that things come up, sometimes unexpectedly, but that does not relieve you of your responsibilities.

Plagiarism. Obviously, plagiarism is not tolerated at Drexel and can result in failure. Plagiarism is passing off someone else's ideas, work or words as your own. Collaboration is encouraged, but always give credit to individuals or groups whose ideas, work or words you are reporting, quoting or summarizing.

Academic Honesty. Cheating, academic misconduct, plagiarism, and fabrication are serious breaches of academic integrity and will be dealt with according to University Policy (Section 10 of the Student Handbook.) Students are responsible for their own finished work. Penalties for first offenses range from 0 on an assignment to an F in the course. All offenses are reported to the University Office of Judicial Affairs.

Late Policy. All group assignments are due online by midnight of the due date. Group presentations cannot be rescheduled. Individual written work is due by email to the instructor midnight of the due date. Grades for late written work will be lowered substantially.

Student Advisors and Resources. Take advantage of the academic advisors who are available on the third floor of Rush. Appointments with advisors can be scheduled by calling 215-895-2474. Appointments with co-op coordinators can be scheduled by calling 215-895-2185. The Drexel Learning Center is available at <http://www.dlc.drexel.edu>. The Writing Center is available at <http://www.drexel.edu/writingcenter>. The Hagerty Library is available at <http://www.library.drexel.edu>.

Special Needs Students. If you have any special need that must be accommodated, please let the instructor know the first week of class. Contact with the Office of Disability Services (215-895-2506/7) is strictly confidential.

Privacy Notice

In general, all work and communication in this course should be treated as *public*:

- Your work in this course may be studied by other students in the course.
- 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 Web.
- The instructor and other Drexel faculty, students and staff may have access to anything in Blackboard or the web spaces.
- 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.

Please let the instructor know if you have an objection to your work being made available to others.

Instructor's Background

Hi. My name is Gerry (pronounced like "Jerry"). I am always available by email at Gerry.Stahl@drexel.edu. Send me an email if you want to meet with me in person or to inquire about urgent or personal questions.

It is often better to ask questions about the texts, weekly assignments or other aspects of the course through the wiki, so that everyone in the class can see and respond to your questions and their 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.

I have recently published a book on CSCL entitled *Group Cognition: Computer Support for Building Collaborative Knowledge* and have launched the *International Journal of Computer-Supported Collaborative Learning*. My background is in computer science and philosophy. At Drexel I teach mainly HCI courses; before coming to Drexel 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; I have been in charge of workshops at CSCL 2003 in Norway, CSCL 2005 in Taiwan, ICCE 2006 in Beijing and CSCL 2007 in New Brunswick.

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.ischool.drexel.edu/faculty/gerry>.