*** Course Overview ***

INFO 405: Computer-Supported Cooperative Work

Winter 2011 online

Professor Gerry Stahl
Gerry.Stahl@drexel.edu

Course Description

INFO 405 covers human and technical issues and concepts of computer-supported cooperative work (CSCW). Topics include the ways that groups work in the networked organization, analysis and design of collaboration system requirements, the technological underpinnings of selected groupware technologies, and the design and implementation of groupware technologies.

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

- Apply CSCW/Groupware concepts and techniques to analyze potential groupware requirements.
- Be able to use research in social and communication processes that go on in an organization to positively affect the adoption and successful outcomes of CSCW systems.
- Be able to support organizational objectives and strategies with computer augmentation to communication**.**

Groupware systems are socio-technical systems, so their design must be driven by the human and social needs of users and user communities. Accordingly, this course looks at various approaches for studying, analyzing and evaluating system requirements—particularly for cooperative, collaborative and social-computing systems. Course readings cover classic papers defining the CSCW field, examples of groupware applications for cooperation in the workplace and for collaborative learning, and considerations for groupware evaluation. This quarter, a special focus will be on virtual learning communities.

This course is designed and organized to support collaborative learning; work in small groups is the primary learning activity; the instructor's role is primarily to structure, assess and guide the experience. The course is organized in online-seminar style. Students will prepare presentations on the readings, working in online small groups. Critical, creative, well-grounded perspectives on the readings are encouraged. The course will focus on the writing of research review papers that explore the leading edge of research on CSCW, allowing the selection of current topics to follow student interests.

The course is a graduate-level seminar course. It requires careful reading of 50-75 pages a week. It requires writing critical reviews of the readings and the composition and refinement of a publishable research review paper. Most communication will take place *asynchronously* in Blackboard, but about one hour per week of *synchronous* collaboration within a small group of students is also required—small groups will be formed based primarily upon when each student can meet online.

This one-time course offering may not be repeated in the future. The content and instructor of this course change each time it is offered. This is an opportunity to benefit from the instructor's own perspective on groupware design and research and from the special focus of the term.

Course Readings

The course content is presented by the readings. Students are expected to read them carefully, take notes and be critical. The reading assignments are listed in the Course Assignments table below. The book that you must purchase is:

- Barab, S. A., Kling, R., & Gray, J. H. (Eds.). (2004). *Designing for virtual communities in the service of learning*. Cambridge, UK: Cambridge University Press.

You can download the other course readings as Course Materials in Blackboard.

Here are the reading assignments:

1. Ellis, C. A., Gibbs, S. J., Rein, G. L. (1991) Groupware: Some Issues and Experiences. *Communications of the ACM*. 34(1) 39-58.
2. Grudin, J. (1988) Why CSCW Applications Fail: Problems in the Design and Evaluation of Organizational Interfaces. *CSCW '88 Proceedings*. 85-93.
3. Grudin, J. (1994) Eight Challenges for Developers. *Communications of the ACM*. 37(1) 93-105.
4. Schmidt, K., Bannon, L. (1992) Taking CSCW Seriously: Supporting Articulation Work. *CSCW* 1(1) 7-40.
5. Conklin, J., Begeman, M. (1988) gIBIS: A Hypertext Tool for Exploratory Policy Discussion. *ACM Transactions on Office Information Systems*, 6(4) 306-331.
6. Neuwirth, C., Kaufer, D., Chandhok, R., Morris, J. (1990) Issues in the Design of Computer Support for Co-authoring and Commenting. *CSCW '90 Proceedings*. 183-195.
7. Abbott, K., Sarin, S. (1994) Experiences with Workflow Management: Issues for the Next Generation. *CSCW '94 Proceedings*. 113-120.
8. Nardi, B., Schiano, D., Gumbrecht, M. (2004) Blogging as Social Activity, or, Would You Let 900 Million People Read Your Diary? *CSCW '04. Chi Letters*, 6(3) 222-231.
9. Stahl, G. (2006) Introduction: Essays on Technology, Interaction and Cognition. In Stahl, G. (2006) *Group Cognition: Computer Support for Building Collaborative Knowledge*. Cambridge, MA: MIT Press. p. 1-21.
10. Stahl, G. (2006) Chapter 2: Evolving a Learning Environment. In Stahl, G. (2006) *Group Cognition: Computer Support for Building Collaborative Knowledge*. Cambridge, MA: MIT Press. p. 47-64.
11. Stahl, G. (2006) Chapter 5: Collaboration Technology for Communities. In Stahl, G. (2006) *Group Cognition: Computer Support for Building Collaborative Knowledge*. Cambridge, MA: MIT Press. p. 93-118.
12. Stahl, G. (2006) Chapter 6: Perspectives on Collaborative Learning. In Stahl, G. (2006) *Group Cognition: Computer Support for Building Collaborative Knowledge*. Cambridge, MA: MIT Press. p. 119-154.
13. Stahl, G. (2006) Chapter 7: Groupware Goes to School. In Stahl, G. (2006) *Group Cognition: Computer Support for Building Collaborative Knowledge*. Cambridge, MA: MIT Press. p. 155-176.
14. Barab, S., Kling, R., Gray, J. (2004) Chapter 1: Introduction: Designing for Virtual Communities in the Service of Learning. In Barab, S., Kling, R., Gray, J. (2004) *Designing for*

Virtual Communities in the Service of Learning. Cambridge, UK: Cambridge University Press. p. 3-15.

15. Riel, M., Polin, L. (2004) Chapter 2: Online Learning Communities: Common Ground and Critical Differences in Designing Technical Environments. In Barab, S., Kling, R., Gray, J. (2004) *Designing for Virtual Communities in the Service of Learning*. Cambridge, UK: Cambridge University Press. p. 16-51.
16. Kling, R., Courtright, C. (2004) Chapter 4: Group Behavior and Learning in Electronic Forums: A Socio-Technical Approach. In Barab, S., Kling, R., Gray, J. (2004) *Designing for Virtual Communities in the Service of Learning*. Cambridge, UK: Cambridge University Press. p. 91-119.
17. Renninger, K. A., Shumar, W. (2004) Chapter 7: The Centrality of Culture and Community to Participant Learning at and with the Math Forum. In Barab, S., Kling, R., Gray, J. (2004) *Designing for Virtual Communities in the Service of Learning*. Cambridge, UK: Cambridge University Press. p. 181-209.
18. Hewitt, J. (2004) Chapter 8: Introduction: An Exploration of Community in a Knowledge Forum Classroom: An Activity System Analysis. In Barab, S., Kling, R., Gray, J. (2004) *Designing for Virtual Communities in the Service of Learning*. Cambridge, UK: Cambridge University Press. p. 210-238.
19. Herring, S. (2004) Chapter 12: Computer-Mediated Discourse Analysis: An Approach to Researching Online Behavior. In Barab, S., Kling, R., Gray, J. (2004) *Designing for Virtual Communities in the Service of Learning*. Cambridge, UK: Cambridge University Press. p. 338-376.
20. Mühlpfordt, M., Wessner, M. (2009) Chapter 15: The Integration of Dual-Interaction Spaces. In Stahl, G. (2009) *Studying Virtual Math Teams*. New York, NY: Springer. p. 281-294.
21. Stahl, G. (2009) Chapter 16: Designing a Mix of Synchronous and Asynchronous Media for VMT. In Stahl, G. (2009) *Studying Virtual Math Teams*. New York, NY: Springer. p. 295-310.
22. Stahl, G. (2009) Chapter 17: Deictic Referencing in VMT. In Stahl, G. (2009) *Studying Virtual Math Teams*. New York, NY: Springer. p. 311-326.
23. Orlikowski, W. (1992) Learning from Notes: Organizational Issues in Groupware Implementation. *CSCW '92 Proceedings*. 362-369.
24. Neale, D., Carroll, J., Rosson, M. B. (2004) Evaluating Computer-Supported Cooperative Work: Models and Frameworks. *CSCW '04*. *CHI Letters* 6(3) 112-121.
25. Pinelle, D., Gutwin, C. (2002) Groupware Walkthrough: Adding Context to Groupware Usability Evaluation. *CHI 2002*. *Chi Letters* 4(1) 455-462.
26. Carroll, J., Rosson, M. B. (2005) Awareness and Teamwork in Computer-Supported Collaborations. *Interacting with Computers*. 18(1) 21-46.

Course Assignments

Week	*Dates*	*Readings*	*Group Reviews*	*Comments*	*Weekly Assignments*
1	Jan 3 - 9	Paper 1, 2, 3, 4	Paper 1, 2, 3, 4		
2	Jan 10 - 16	Paper 5, 6, 7, 8	Paper 5, 6, 7, 8	Paper 1, 2, 3, 4	
3	Jan 17 - 23	Paper 9, 10, 11	Paper 9, 10, 11	Paper 5, 6, 7, 8	*Individual* literature review of CSCW state of the art
4	Jan 24 - 30	Paper 12, 13	Paper 12, 13	Paper 9, 10, 11	*Group* literature review of one CSCW topic
5	Jan 31 – Feb 6	Paper 14, 15	Paper 14, 15	Paper 12, 13	Abstract of *group* paper on a CSCW topic
6	Feb 7 - 13	Paper 16, 17	Paper 16, 17	Paper 14, 15	*Individual* reflection paper
7	Feb 14 - 20	Paper 18, 19	Paper 18, 19	Paper 16, 17	Draft of *group* paper on a CSCW topic
8	Feb 21 - 27	Paper 20, 21, 22	Paper 20, 21, 22	Paper 18, 19	*Individual* reviews of other groups' papers on CSCW topics
9	Feb 28 – Mar 6	Paper 23, 24, 25, 26	Paper 23, 24, 25, 26	Paper 20, 21, 22	
10	Mar 7 - 13			Paper 23, 24, 25, 26	Final version of *group* paper on a CSCW topic
11					(No exam)

Due dates: All course assignments are due by midnight (East Coast time) on Sunday at the end of the week shown on the table of Course Assignments above.

Course Requirements

READINGS: Read the assigned chapters or papers carefully by the end of the week—do not fall behind the schedule of readings above. Take notes. Think about the main purpose of each reading and its central points. How does it make its argument to support its main points? What terms, concepts, ideas, techniques or arguments are unclear? Is the argument of the reading supported by analysis of data or examples? How could the reading be improved?

GROUP REVIEWS OF READINGS: Meet with your group online to draft a review of the reading assigned to your group. You might want to each post ideas for the review to a group asynchronous space in advance of meeting; then meet synchronously for about an hour to discuss how to put the ideas together and to develop them further; then polish the review and agree on it as a group asynchronously; and finally post it to the Blackboard discussion forum by the end of the week listed above for the group review. Be concise and to the point: your group reviews should be 400-500 words long; they should state the main idea or argument of the reading and should point out its value and its limitations; suggest some ways the reading could be improved or its argument could be strengthened. What is the reading trying to accomplish—within its book or within the scientific community; how does its rhetorical and literary style help or hinder this? Do not simply state opinions; back up your claims or arguments with references to the data or to the detailed wording. At the top of your reviews (and all group products in the course), list the names of the people who actively participated in writing the review; at the bottom of your reviews (and all group products in the course) indicate where the

instructor can find an archive of your synchronous group discussions (e.g., in the Blackboard Group section in a virtual classroom or chat archive).

INDIVIDUAL COMMENTS ON OTHER GROUPS' REVIEWS OF READINGS: Read the reviews of the readings that your group did *not* review last week. As an individual, post a comment on each of them of about 100-200 words long to the Blackboard discussion forum by the end of the week. Do not simply agree or disagree with the review; do not simply give your personal opinion or talk about your personal experiences. Be specific and reference the claims you are disputing. Try to deepen the discussion by extending the argument of the reading, the review and other people's comments. Some of the readings are difficult and require background knowledge that not everyone will have; try to fill in some understanding that you think was missing in the other postings.

INDIVIDUAL LITERATURE REVIEW OF CSCW: As an individual, prepare an annotated literature review of the state of the art of the CSCW research field. Try to cover several active topics during the past 5-10 years. Include a sentence or two about each paper cited. Post a brief abstract of your review in the discussion forum and attach your review to the abstract by the deadline. Use the course_paper_template from the Blackboard Course Materials to format your paper.

GROUP LITERATURE REVIEW OF ONE SELECTED CSCW TOPIC: As a group, select one active approach, open issue, software genre or controversial topic that you want to study further. Prepare a more extensive annotated literature review of the state of the art of the selected CSCW topic. Try to identify the most important papers published since 2002 on that topic. Include a couple sentences about each paper cited. Post a brief abstract of your group review in the discussion forum and attach your review to the abstract by the deadline. Use the template to format your paper; include the list of active contributors and the pointer to your synchronous discussion archive.

ABSTRACT OF GROUP PAPER: As a group, propose a research review paper on a current CSCW topic—probably the topic that you completed the literature review for. Post the abstract of about 200 words by the deadline.

INDIVIDUAL REFLECTION PAPER: As an individual, write a reflection paper on your individual and collaborative learning during the first half of the course and your expectations or desires for the second half. The paper should be 3 to 5 pages long. This paper is confidential between you and the instructor. Post your reflection paper to the Blackboard DropBox by the deadline. Name the file with your last name, e.g., "Stahl_reflection.doc".

FIRST DRAFT OF GROUP PAPER: As a group, submit a draft of a research review paper of about 5 single-spaced pages, reporting on the state of the art of the CSCW topic you selected. Write this as a research review paper that could be submitted to an HCI, CSCW or CSCL conference or journal. What are the main issues that are being debated? What are the main recent findings and what are the big open questions? Follow the instructions and formatting in the template. Use the template to format your paper; include the list of active contributors and the pointer to your synchronous discussion archive. Attach the paper to your abstract by the deadline.

INDIVIDUAL FEEDBACK ON OTHER GROUPS' PAPERS: As an individual, read the first drafts by the other groups. Post a comment on each of them to the Blackboard discussion forum for the abstracts of the drafts. Your comments should each be about 200-300 words long and should provide specific suggestions on how the authors can improve the paper and strengthen its argument and findings. Support the work of your peers and help them improve their drafts.

FINAL VERSION OF GROUP PAPER: Submit a final version of the research review paper, about 8 pages long. Take carefully into account the suggestions in the reviews by your classmates and by the instructor. Use the template to format your paper; include the list of active contributors and the pointer

to your synchronous discussion archive. Attach the final paper to your abstract by midnight of the deadline. The paper must include an Acknowledgments section that includes the following certification: "We individually certify that: To the best of our knowledge, this assignment is entirely work produced by us. Any identification of our group work is accurate. We have not quoted the words of any other person from a printed source or a website without indicating what has been quoted and providing an appropriate citation. We have not submitted any of the material in this document to satisfy the requirements of any other course."

Course Grading

Grading will be based partially on your individual participation in the course and in your group; partially on the work of you and your group.

Because your class mates will be building on your ideas, it is essential that you post all your assignments on time and that you participate actively in all group activities (both asynchronous and synchronous). Grades will be reduced at least in half for assignments submitted after the deadlines.

Grading is *not* curved: We are trying to build knowledge collaboratively. It is possible for all groups and even all individuals to earn an A in this course. The grading is not competitive, but simply acknowledges the work that you have done on schedule. 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, or to meet deadlines for postings and assignments will lower your grade. Your grade should be a measure of what your group and you have accomplished in this course.

#	points	max	
9	4	36	Group reviews of readings
9	3	27	Comments on group reviews
1	9	9	Reviews of other groups' papers
1	8	8	Group final paper
5	4	20	Other assignments
		100	

A+	99	100
A	92	98
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. Please raise questions in the class discussion board if possible. 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 by email. Email with the instructor is the best medium for confidential concerns, such as concerns about other students in your group or personal events that will interfere with your course work.

No Excuses. No one is interested in excuses. If you need to miss any group activity, notify the instructor and 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. Your group is your support system in the course – let them know what is going on so they can help you.

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 individual and group assignments are due online by midnight (East Coast time) of the due date. Group presentations cannot be rescheduled. Grades for late 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.
- ISchool courses may be recorded and streamed for educational purposes. Presentations and other activities in class may be videotaped and made available in the future.
- 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.

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 Stahl. I am available every day 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.

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.

In 2006 I published a book on CSCL entitled *Group Cognition: Computer Support for Building Collaborative Knowledge* and launched the *International Journal of Computer-Supported Collaborative Learning*. In 2009 I published a book on the VMT Project that I direct at the iSchool @ Drexel. I have published over 200 conference papers, journal articles, book chapters and essays. 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, CSCL 2007 in New Brunswick and CSCL 2009 in Greece; I am a Program co-Chair for CSCL 2011 in Hong Kong.

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://GerryStahl.net. You can download my reflections on "A Career in Informatics" at: http://GerryStahl.net/personal/career.pdf.