Department of Computer Science and Engineering
College of Engineering, University of Nevada, Reno

Fall 2012

CS 420/CS 620 Human-Computer Interaction

Lectures: TR 2:30 – 3:45 pm, SEM-347

Instructor:
Sergiu Dascalu
Office SEM-236, Tel: (775) 784-4613
E-mail: dascalus@cse.unr.edu
Web: www.cse.unr.edu/~dascalus

Office hours: General: T 11:00 am–12:00 pm; additional for CS 620: R 3:45–4:30 pm

Catalog description: Lecture + Lab: 3 + 0; Credit(s): 3
Usability goals, design principles, design processes, prototyping, interface metaphors, interaction styles, interaction devices, software tools, evaluation paradigms and techniques, user manuals, collaborative work, information visualization. **Prerequisite:** CS 302 Data Structures.

Course outline: This course examines topics related to developing and evaluating user interfaces for interactive computer systems. Topics covered include usability goals and principles, user interface design principles, managing development processes, interface metaphors, interaction styles, interaction devices, software tools, user interface builders, evaluation paradigms and techniques, usability testing, user manuals, tutorials, computer-supported collaborative work, information search, and information visualization.

Texts:

- Ben Schneiderman, Catherine Plaisant, Maxine Cohen, and Steven Jacobs, *Designing the User Interface: Strategies for Effective Human-Computer Interaction*, 5th Edition, Addison-Wesley, 2009. ISBN 978-0-321-53735-5 (or 0-321-53735-1)
- Additional material as indicated later by the instructor. In particular, the list of books for the assigned reading presentation (for CS620 students) will be made available early in the semester.

Initial www pointers:

- Required textbook's website (Schneiderman *et al*, 2009): http://www.aw.com/DTUI
- Gary Perlman's HCI bibliography: http://hcibib.org/

Grading scheme CS420 (tentative):

• Assignments	(3)	15%
• Presentations	(2)	8%
• Tests (midterms)	(2)	32%
• Project	(3)	40%
• Class participation		5%

Grading scheme CS620 (tentative):

• Assignments	(2)	8%
• Extra book reading	(1)	7%
• Presentations	(2)	8%
• Tests (midterms)	(2)	32%
• Project & paper	(4)	40%
• Class participation		5%

Notes on grading:

- Passing conditions (all must be met):

  50% overall &
  50% in test &
  50% in project and paper (grad students only) &
  50% in assignments, presentations, and class participation

- For grade A: at least 90% overall, at least 90% in class participation, and at least 60% in test

- Class participation will be assessed based on attendance, involvement in discussing material presented in class by the instructor and peers, and feedback provided on peers' presentations. Significant lack of class participation will significantly decrease the overall grade in this course.

- Plus/minus grading policy will be used in this course, as indicated below in section "Grading scale"

- There will be no make-up exams or homework in this course

Grading scale:

A	90 -100	[maximum 100]
A-	87 - 89	
B+	83 - 86	
B	78 - 82	
B-	75 - 77	
C+	71 - 74	
C	66 - 70	
C-	63 - 65	
D+	60 - 62	
D	55 - 59	
D-	50 - 54	
F	< 50	

Details on additional coursework requirements and opportunities for graduate students (CS620):

- The graduate students will achieve deeper understanding of the material presented to the combined group by working on more complex and challenging assignments and presentations, writing a (graduate only) project-based paper with a view of potentially publishing it at an international scientific conference, and by interacting more with the instructor outside lecture hours.
- Differences in terms of assignments as compared to undergraduate students' assignments: as shown in the two Grading Schemes (page 2 of this syllabus), graduate students will have additional coursework requirements, as follows:
  - A specialized *extra book reading assignment* (a 150-page or more book selected by the student and approved by the instructor). This additional book will focus on a specific HCI topic (recommended: related to the student's graduate research), e.g.,"HCI for Mobile Devices". The student will write a 1000 to 1500-word critical essay on this book;
  - A *longer class presentation* (20 minutes or more) in which the student will present the main ideas and other information acquired from his/her selected additional book reading;
  - A *project-based paper*, written using IEEE or ACM guidelines for scientific paper publications, that focuses on the project developed in this class and can be potentially submitted to an international conference;
  - For the same amount of work, *the assignments* of graduate students *will have a lower weight* in the course grade (as compared with those for undergraduate students): e.g., 4% each (graduate) versus 5% (undergraduate);
  - The midterm tests will contain each at least *an additional question* to be answered by graduate students only.
- Increased opportunities for independent study will be offered by extra work (required to graduate students only) on the additional book reading (book critique and presentation) and on the project-based paper that follows IEEE or ACM guidelines for scientific publications.
- Increased opportunities for interaction with the instructor will result from working on the specific graduate assignments described above and from allocating additional weekly office time for meetings with graduate students (for the purpose of advising graduate paper and project work). The latter is indicated in section "Office Hours" on the first page of the syllabus.
- There will be two specific synthesis experiences for graduate students in this course: work on the critical essay (additional book reading) focused on a specialized HCI book chosen by the student, and work on the project-based paper for the purpose of disseminating the results of the HCI project developed in this course;
- The CS 620 course will provide graduate students with the following opportunities to work at a higher academic:
  - Explore in more details HCI challenges and issues (extra book reading);
  - Perform research related to their graduate thesis or project topics (project, course paper);
  - Exercise more comprehensively their written and oral communication skills (additional presentation time, essay on the extra book reading);
  - Prepare for scientific publication of their research and development work (course paper).
- The work of graduate students will be evaluated differently from that of undergraduates as indicated previously in the syllabus (top of the second page of the syllabus, sections "Grading scheme CS 420" and "Grading scheme CS 620").
- Through requirements for challenging and interesting study, research, and development on modern HCI topics at a higher academic level (including work on an critical essay focused on a specialized, recently published HCI book and on a project based-paper), at the end of the course the graduate students will acquire substantial academic value that will be greater than that obtained by the undergraduate students.

Late submissions:

Late submissions of assigned work will be penalized with a deduction of 10% of the grade per late day, to a maximum of two late days for each submission. No material will be accepted after two days past the deadline. For example, an assignment that is worth 90/100 points will receive 90*0.9 = 81/100 points if it is one day late, 90*0.8 = 72/100 points if it is two days late, and will not be accepted if it is more than two days late. Note that late days are not divisible in subunits. Late days are not allowed for presentations and test.

On plagiarism and cheating:

Plagiarism and cheating will not be tolerated. It will be dealt with according to the policies of the University of Nevada, Reno regarding academic dishonesty. Please read these policies at www.unr.edu/stsv/acdispol.html

Disability Statement:

If you have a disability for which you will need to request accommodations, please contact me or someone at the Disability Resource Center (Thompson Student Services - 107), as soon as possible.

Academic success services:

Your student fees cover usage of the Math Center (784-4433 or www.unr.edu/mathcenter/), Tutoring Center (784-6801 or www.unr.edu/tutoring/), and University Writing Center (784-6030 or http://www.unr.edu/writing_center/. These centers support your classroom learning; it is your responsibility to take advantage of their services. Keep in mind that seeking help outside of class is the sign of a responsible and successful student.

Statement on audio and video recording:

Surreptitious or covert video-taping of class or unauthorized audio recording of class is prohibited by law and by Board of Regents policy. This class may be videotaped or audio recorded only with the written permission of the instructor. In order to accommodate students with disabilities, some students may be given permission to record class lectures and discussions. Therefore, students should understand that their comments during class may be recorded.

Tentative schedule

Week	Dates (Lectures)	Contents
1	Aug 28, 30	Lectures, Students' introduction
2	Sep 04, 06	Lectures, A#1 given
3	Sep 11, 13	Lectures Presentations draw (all), Selection additional texts (620)
4	Sep 18, 20	A#2 given, Lecture presentations by students (round #1) A#1 due
5	Sep 25, 27	Lecture presentations by students (round #1)
6	Oct 02, 04	Lectures, P#1 given, A#2 due
7	Oct 09, 11	Lecture presentations by students (round #1)
8	Oct 16, 18	Lecture, Midterm #1 (October 18) P#2 given, P#1 due
9	Oct 23, 25	Lectures, A#3 given, Essay given
10	Oct 30, Nov 01	Presentations by students (round #2) P#2 due, P#3/Paper given
11	Nov 06, 08	Presentations by students (round #2), Lecture
12	Nov 13, 15	Lectures A#3/Essay due
13	Nov 20, -	Midterm #2 (November 20)
14	Nov 27, 29	Lecture, Presentations by grad students (round #2)
15	Dec 04, 06	Presentations by grad students (round #2)
16	Dec 11	Lecture, P#3 & demo (Dec 13 & 14), Paper due (Dec 17)

Course Assessment Matrix

CS 420 Human-Computer Interaction

CSE Program Outcomes	Course Outcomes	Assessment Methods/Metrics	Program Objectives Impacted
3	Students have the ability to specify, design and implement a prototype (software and/or hardware) that involves significant human-computer interaction (HCI).	Define project concept, specify requirements and scenarios of use, develop architectural and detailed design, create user-interface design, and implement the prototype.	2, 3
7	Students are capable of describing their and others' HCI solutions in clear and fluent ways, both in writing and in oral presentations.	Write assignments and project parts using correct, fluent, clear and precise English. Present HCI material in classroom talks that are easily followed and understood by the peers and the instructor.	2, 4
8	Students have a clear understanding of the impact of engineering solutions in a global and societal context.	Examine and evaluate new, leading-edge HCI approaches with respect to their significance for the society and the global community.	3, 4
11	Students demonstrate the ability to evaluate and use modern techniques and tools for designing and developing practical HCI solutions.	Study, evaluate, and apply various techniques and tools for HCI specification, design and implementation.	1,2
13	Students demonstrate the ability to apply a range of design and development principles in the construction of a HCI-intensive prototype.	Study and apply various high-level and detailed design principles for developing an HCI-intensive prototype.	2,3

CSE Program Outcomes

Outcome	Description of Outcome
1	an ability to apply knowledge of computing, mathematics, science, and engineering
2	an ability to design and conduct experiments, as well as to analyze and interpret data
3	an ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs, within realistic constraints specific to the field
4	an ability to function effectively on multi-disciplinary teams
5	an ability to analyze a problem, and identify, formulate and use the appropriate computing and engineering requirements for obtaining its solution
6	an understanding of professional, ethical, legal, security and social issues and responsibilities
7	an ability to communicate effectively with a range of audiences
8	the broad education necessary to analyze the local and global impact of computing and engineering solutions on individuals, organizations, and society
9	a recognition of the need for, and an ability to engage in continuing professional development and life-long learning
10	a knowledge of contemporary issues
11	an ability to use current techniques, skills, and tools necessary for computing and engineering practice
12	an ability to apply mathematical foundations, algorithmic principles, and computer science and engineering theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices
13	an ability to apply design and development principles in the construction of software systems or computer systems of varying complexity

CSE Program Objectives

Within 3 to 5 years of graduation our graduates will:

1. be employed as computer science or computer engineering professionals beyond entry level positions or be making satisfactory progress in graduate programs.
2. have peer-recognized expertise together with the ability to articulate that expertise as computer science or computer engineering professionals.
3. apply good analytic, design, and implementation skills required to formulate and solve computer science or computer engineering problems.
4. demonstrate that they can function, communicate, collaborate and continue to learn effectively as ethically and socially responsible computer science or computer engineering professionals.