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

**Fall 2008**

# CS 420 / CS 620 Human-Computer Interaction

**Lectures:** MW 4:00 – 5:15 pm, SEM-357

**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 3:00 – 4:00 pm and Graduates: W 5:30 – 6:30 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 design processes, prototyping and construction, interface metaphors, interaction styles, interaction devices, software tools, user interface builders, evaluation paradigms and techniques, usability testing, user manuals, tutorials, computer-supported collaborative work.

**Texts:**

- Required text: Steven Heim, *The Resonant Interface: HCI Foundations for Interaction Design*, Addison-Wesley, 2007.
- Recommended textbook: Required textbook: David Benyon, Phil Turner, and Susan Turner, *Designing Interactive Systems: People, Activities, Contexts, Technologies*, Addison-Wesley, 2005.
- 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: http://www.aw.com/heim
- Gary Perlman's HCI bibliography: http://hcibib.org/

**Grading scheme CS420 (tentative):**

| | | |
|---|---|---|
| • Assignments | (3) | 15% |
| • Presentations | (1) | 7% |
| • Tests (midterms) | (2) | 32% |
| • Project | (3) | 40% |
| • Class participation | | 6% |

**Grading scheme CS620 (tentative):**

| | | |
|---|---|---|
| • Assignments | (2) | 8% |
| • Extra book reading | (1) | 7% |
| • Presentations | (2) | 10% |
| • Tests (midterms) | (2) | 30% |
| • 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 | |

**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.

**Tentative schedule**

| Week | Dates (Lectures) | Contents |
|---|---|---|
| 1 | Aug 25, 27 | Lectures |
| 2 | Sep -, 03 | Lecture, Students' introduction |
| 3 | Sep 08, 10 | Lectures, A#1 given |
| 4 | Sep 15, 17 | Lectures, A#2 given<br>A#1 due |
| 5 | Sep 22, 24 | Lectures |
| 6 | Sep 29, Oct 01 | Lectures, P#1 given, A#2 due<br>Presentations draw, Selection Additional text |
| 7 | Oct 06, 08 | Lectures |
| 8 | Oct 13, 15 | Lecture, Midterm #1 (October 15)<br>P#2 given, P#1 due |
| 9 | Oct 20, 22 | Presentations by students (round #1)<br>A#3 given, Essay given |
| 10 | Oct 27, 29 | Presentations by students (round #1)<br>P#2 due, P#3/Paper given |
| 11 | Nov 03, 05 | Presentations by students (round #1), |
| 12 | Nov 10, 12 | Lectures<br>A#3/Essay due |
| 13 | Nov 17, 19 | Lecture, Midterm #2 (November 19) |
| 14 | Nov 24, 26 | Presentations by students (round #2) |
| 15 | Dec 01, 03 | Presentations by students (round #2), Lecture |
| 16 | Dec 08 | P#3 due (Dec 08), Paper due (Dec 15) |

# Course Assessment Matrix

# CS 420 Human Computer Interaction

| ABET Criterion 3 Outcomes | Course Outcomes | Assessment Methods/Metrics | CS Program Objectives Impacted | CIE Program Objectives Impacted |
|---|---|---|---|---|
| c | 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 | 2, 3 |
| g | 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. | 3, 4 | 3, 4 |
| h | 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. | 1, 4 | 4 |
| i | Students understand the need to engage in continuous learning and keep abreast with the new technology developments. | Study, explain, and evaluate the newest developments in the HCI research and industry landscape. | 4 | 4 |
| k | Students demonstrate the ability to evaluate and apply techniques and tools for designing and developing HCI solutions. | Study, evaluate, and apply various techniques and tools for HCI specification, design and implementation. | 2,3 | 2, 3 |

**ABET Criterion 3 Outcomes:**

a. an ability to apply knowledge of mathematics, science, and engineering
b. an ability to design and conduct experiments, as well as to analyze and interpret data
c. an ability to design a system, component, or process to meet desired needs
d. an ability to function on multi-disciplinary teams
e. an ability to identify, formulate, and solve engineering problems
f. an understanding of professional and ethical responsibility
g. an ability to communicate effectively
h. the broad education necessary to understand the impact of engineering solutions in a global and societal context
i. a recognition of the need for, and an ability to engage in life-long learning
j. a knowledge of contemporary issues
k. an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

**Computer Science Program Objectives:**

Our graduates will have achieved:

1. a broad general education assuring an adequate foundation in science and mathematics relevant to computing.
2. a solid understanding of concepts fundamental to the discipline of computer science.
3. good analytic, design, and implementation skills required to formulate and solve computing problems.
4. the ability to function, communicate, and continue to learn effectively as ethically and socially responsible computer science professionals.

**Computer and Information Engineering Program Objectives:**

Within 3 to 5 years of graduation our graduates will:

1. be employed as 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 engineering professionals.
3. apply good analytic, design, and implementation skills required to formulate and solve computer engineering problems.
4. demonstrate that they can function, communicate, collaborate and continue to learn effectively as ethically and socially responsible computer engineering professionals.