CS3205, HCI in Software Development

Beginning of Course Memo for Spring 2018

Instructor:

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TA Office Hours: See Google Calendar on Collab

Course Information:

Prerequisite:
CS2110 with a C- or better or equivalent. (For SW development maturity and SW engineering lifecycles and process. Also, students should have enough experience in a language to be able to learn to create a user-interface using a GUI library or toolkit in a language like C++ or Java.)

Course Description:
Human-computer interaction and user-centered design in the context of software engineering. Examines the fundamental principles of human-computer interaction. Includes evaluating a system's usability based on well-defined criteria. Includes user and task analysis, as well as conceptual models and metaphors. The use of prototyping for evaluating design alternatives. Physical design of software user-interfaces, including windows, menus, and commands.

Course Objectives: Upon completion of this course students will have the ability to:

- Comprehend fundamental principles of HCI and user-centered design.
- Evaluate software user interfaces based on defined usability criteria, using methods such as heuristic evaluation and user observation techniques
- Apply user-centered design and usability engineering principles as they design a variety of software user interfaces.
- Use prototyping methods to discover requirements and to evaluate design alternatives.
- Conduct simple formal experiments to evaluate usability hypotheses.

Textbooks:

- Interaction Design: beyond Human-Computer Interaction, 3rd edition. (The "ID" book.) By Jennifer Preece, Yvonne Rogers, and Helen Sharp. Free electronic version available at UVa at this link: http://proquest.safaribooksonline.com.proxy.its.virginia.edu//book/webdevelopment/usability/9780470665763
- "The Design of Everyday Things, revised and expanded edition". Don Norman.

Course Organization and Topics:

- Unit 1: Introduction to HCI / History of HCI
- Unit 2: Understanding Users and their Tasks
- Unit 3: Conceptual Models and Usability Design Principles
- Unit 4: Prototyping
- Unit 5: Evaluation Methodologies
  Unit 6: Observer Design Pattern and UI implementation

Assignments, Exams, Grading, etc.:

Your grade will be determined as follows:

- Midterm Exams (2):   30%
- Homework / Project (8): 35%
- Final Exam: 25%
- Class Participation: 10%

Here is some more detail about each portion of your grade:

Midterm Exams: We will have two midterm examinations. The tentative dates for these are Feb. 27 (In class) and Apr. 5 (In class). These are subject to change.

Homework / Project: Your homework assignments will represent increasingly complex portions of a final project that will be submitted and presented at the end of the semester. You may work in groups of no more than 4 individuals (except HW 1 and 5 which will be done individually).

The purpose of this project is to experience the process of defining an interface design task, prototyping potential designs, and then evaluating those designs empirically. By the end of the semester, your group will amalgamate the knowledge acquired via the homeworks into a unified document which will serve as your final project submission. This project will require a significant amount of effort, and is the majority of your grade. The project will require some subset of the following:

- Project Proposal (Individual assignment)
- Analysis of users and conceptual framework
- Low-fidelity Prototypes
- Qualitative Evaluation
- High-fidelity Prototypes
- Quantitative Evaluation
- Final Report

The final report will represent a full report documenting the work done in all of the homeworks and will represent your final project.

Late Policy: Every student is allowed 3 total late days throughout the semester. Each late day will be applied automatically with no penalty. If a group project, the late day will be deducted from each member of the group. Any late submissions beyond these 3 late days will result in a 20% deduction per 24 hour delay.

Final Exam: The final exam is on Thursday, May 3 @ 9:00am – 12:00pm

Class Participation: This portion of your grade will be assessed by how well you participate in class, whether it be by contributing to discussions, contributing interesting articles/examples, or by some other means that enhances the course's overall value.

Honor Policy: The School of Engineering and Applied Science relies upon and cherishes its community of trust. We firmly endorse, uphold, and embrace the University's Honor principle that students will not lie, cheat, or steal, nor shall they tolerate those who do. We recognize that even one honor infraction can destroy an exemplary reputation that has taken years to build. Acting in a manner consistent with the principles of honor will benefit every member of the community both while enrolled in the Engineering School and in the future.

Students are expected to be familiar with the university honor code, including the section on academic fraud (http://www.student.virginia.edu/~honor/proc/fraud.html).

Each assignment will describe allowed collaborations, and deviations from these will be considered Honor violations. If you have questions on what is allowable, ask! Unless otherwise noted, exams and individual assignments will be considered pledged that you have neither given nor received help. (Among other things, this mean that you are not allowed to describe problems on an exam to a student who has not taken it yet. You are not allowed to show exam papers to another student or view another student's exam papers while working on an exam.) Send, receiving or otherwise copying electronic files that are part of course assignments are not allowed collaborations (except for those explicitly allowed in assignment instructions).

Assignments or exams where honor infractions or prohibited collaborations occur will receive a zero grade for that entire assignment or exam. Such infractions will also be submitted to the Honor Committee if that is appropriate.

LNEC: If you have been identified as an LNEC student, please let the Center know you are taking this class. If you suspect you should be an LNEC student, please schedule an appointment with them for an evaluation. I happily and discretely provide the recommended accommodations for those students identified by the LNEC. Please contact me one week before an exam so we can make accommodations.

Student Responsibilities: Our mutual goal is for you to learn this course material in an effective and enjoyable manner (as much as possible). You also want good grades, and I want you to leave the course feeling good about my effectiveness in teaching you. If everyone has a clear vision of our expectations and responsibilities, we all increase our chances of getting what we want!

• Each student is responsible for coming to class with a commitment to listen and participate in order to get as much as possible out of our class meetings. (So focus on CS3205-related materials while in class; don't read the paper, study for other courses, surf the Web, etc.) • My responsibility is to do as much as possible to make the class time valuable and useful. (And I expect you all to let me know when I can do better, perhaps through anonymous email feedback.). • You should be able to expect me to not waste too much time on material you've already had before (and I may thus reasonably expect you to review such material outside of lecture). • You have the right to expect me to be fair and efficient in managing the course, and should let me know when I'm not. (Perhaps through anonymous email feedback.) • You have the right to know how you're doing in the course (as far as I can determine) as we progress through the term. • On group or team assignments, you have the responsibility to treat your team's members well, by

fully participating in group activities, meeting your responsibilities to the team, and behaving as a professional. In turn, you have the right to be treated this way by each of your team members. • If there is a problem in a team, it's your responsibility to let me know about any problem with a team or one of its individuals. And then it's my responsibility to try to resolve the problem in as effective and as fair a manner as possible. • Finally, it's always my responsibility to treat you fairly and with respect.