

CSE 4392/5369/6369: Special Topics in Human-Computer Interaction
Fall 2015

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Office Hours: Tues & Thurs, 3:30pm - 4:30pm and by appointment

Section Information: CSE 4392-003, CSE 5369-002, CSE 6369-002

Time and Place of Class Meetings: ERB 301, Tues & Thurs 2:00pm – 3:30pm

Description of Course Content: This course will introduce students to HCI research by combining theory with practice. Students will be able to choose projects from game development, to virtual reality, avatars, user interface design, social computing, design using psychological tools, visualization, animation, game design and programing user centric software.

Student Learning Outcomes:

1. Learn about HCI while having fun in designing user interfaces with your team-mates;
2. Get a head-start in one of the most sought-after job skills that would help you in your future career;
3. Gain a theoretical understanding of how to design, implement, and evaluate the next generation of computer interfaces and a goal-directed experience in “doing computing” out of the box, making it usable, useful and a good user experience;
4. Gain an understanding of the changing concepts of interaction away from the desktop: using sensors, devices, mobile computing, and designing for a quality user experience where a human can naturally interact with objects in 3D spaces;
5. Learn what makes interfaces useful, usable and enjoyable, while you increase your awareness of good and bad design and gain basic skills such as, task analysis and user-centric design;
6. Become exposed to experimental research in HCI such as, affective interaction, prototyping & evaluating multiple user interface alternatives, implementing simulations in order to get feedback, and how to do field work in order to generate new design ideas;
7. Study smart environments, mobile web applications, smart networked objects, augmented and mixed realities (VR, haptics, Human Robot Interaction (HRI), computer gaming), pervasive computing, intelligent interfaces and wearable computing;
8. Learn principles of aesthetics and visual design, perception and cognition and be guided into formulating an innovative research project that you will implement in a team of 3 students and complete through short programming assignments;
9. Learn how to present your work, prepare project reports, and how to summarize the outcomes in a paper of publishable quality.
10. Have access to state of the art computer lab facilities at the Heracleia Human Centered Computing Lab.

Course Materials:

- Interaction Design, 4th Ed.; by Rogers, Sharp and Preece [<http://www.id-book.com>]
- Designing the User Interface, 5th ed. by Ben Shneiderman and Catherine Plaisant
- Scott MacKenzie, Human-Computer Interaction: An Empirical Research Perspective, Morgan Kaufmann Publishers, 2013. ISBN: 978-0-12-405865

- Rex Hartson and Pardha S. Pyla, *The UX Book: Process and Guidelines for Ensuring a Quality User Experience*, M. Kaufmann Publishers, 2012. Kim Goodwin, *Designing for the Digital Age: How to Create Human-Centered Products and Services*, Wiley, 2009.
- *Design of Everything Things*. Don Norman
- Helen Sharp, Yvonne Rogers & Jenny Preece (2nd Ed.), *Interaction Design: Beyond human-computer interaction* Paul Cairns and Anna Cox (Cambridge University Press 2008), *Research methods for human-computer interaction*

Descriptions of major assignments and examinations:

1. Class participation, reading & discussing research papers, project reports, and presentations.
2. Programming assignments leading to the project.
3. A semester-long research team project.
4. A research paper of publishable quality.

Attendance: Students are expected to attend all classes. If absence is needed, permission must be given 24 hours before the class.

Grading:

5. Class participation, reading & discussing research papers, project reports, and presentations 40%
6. Programming assignments leading to the project 10%
7. A semester-long research team project 40%
8. A research paper of publishable quality 10%

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://wweb.uta.edu/aaofaof/>).

Disability Accommodations: UT Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including *The Americans with Disabilities Act (ADA)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. All instructors at UT Arlington are required by law to provide “reasonable accommodations” to students with disabilities, so as not to discriminate on the basis of disability. Students are responsible for providing the instructor with official notification in the form of a letter certified by the **Office for Students with Disabilities (OSD)**. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting: **The Office for Students with Disabilities, (OSD)** www.uta.edu/disability or calling 817-272-3364. **Counseling and Psychological Services, (CAPS)** www.uta.edu/caps/ or calling 817-272-3671.

Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Title IX: *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos. For information regarding Title IX, visit www.uta.edu/titleIX.*

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is the stairway right in front of the classroom (West side of the ERB building). When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at <http://www.uta.edu/universitycollege/resources/index.php>

Course Schedule (Tentative)

Week	Topics	Recommended Reading
1	Introduction to Interaction Design and HCI	<ul style="list-style-type: none"> • Chapter 1, Interaction Design text • Chapter 1, Mackenzie • Chapter 1, Shneiderman
2	Understanding Interaction a) Human Factors b) Direct Manipulation	<ul style="list-style-type: none"> • Chapter 2, Interaction Design • Chapter 2, Mackenzie • Chapter 5, Shneiderman
3	Cognitive Aspects a) Human Factors b) Managing Design Processes c) Evaluating Interface Designs	<ul style="list-style-type: none"> • Chapter 3, Interaction Design • Chapter 2, Mackenzie • Chapter 3, Shneiderman • Chapter 4, Shneiderman
4	Social Interaction a) Collaboration and Social Media Participation b) Interaction Elements c) Interaction Devices	<ul style="list-style-type: none"> • Chapter 4, Interaction Design • Chapter 9, Shneiderman • Chapter 3, Mackenzie • Chapter 8, Shneiderman
5	Emotional Interaction • <u>Presentations</u> a) Designing HCI Experiments b) Quality of Service	<ul style="list-style-type: none"> • Chapter 5, Interaction Design text • Chapter 5, Mackenzie • Chapter 10, Shneiderman
6	Interfaces • <u>Presentations</u> • <u>Project Reporting</u>	<ul style="list-style-type: none"> • Chapter 6, Interaction Design text
7	Data Gathering a) Evaluating Interface Designs b) Quality of Service and Functionality	<ul style="list-style-type: none"> • Chapter 7, Interaction Design text • Chapters 10 & 11 Shneiderman
8	Data Analysis • <u>Project reports and discussion</u>	Chapter 8, Interaction Design
9	Establishing Requirements Prototyping	• Chapter 10,11,12 Interaction Design text
10	Writing and Publishing your results Information Search & Information Visualization	<ul style="list-style-type: none"> • Chapter 8, Mackenzie • Chapters 10 & 14 Shneiderman
11	• <u>Project presentations</u>	

**As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course.*

Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at **817-272-3003** (non-campus phone), **2-3003** (campus phone). You may also dial 911. Non-emergency number 817-272-3381