INSC 588: Human-Computer Interaction
Class Meetings: Monday, 6:30-9:10 PM EST
Class Meetings: Virtual via Zoom
Spring 2020

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CATALOG DESCRIPTION
This course is an introduction to the field of human-computer interaction with a focus on the design and evaluation of the interfaces to information systems. Students will be introduced to the topics of interaction design, describing user competencies, defining user requirements, user interface design and evaluating interaction success. In addition, they will gain hands-on experience with user interviewing and user interface design specifications and test construction.

COURSE DESCRIPTION
HCI is rooted in human psychology. Good understanding of design principles and guidelines and their effective application to real-world products or systems requires knowledge of theories and scientific underpinnings. Therefore, the course covers select theories of fundamental aspects of human perception and cognition and link them with design principles.

LEARNING OUTCOMES
Students who complete this course will be able to demonstrate knowledge, effective application, and understanding of:
1. HCI and UX key concepts,
2. theories and principles of human perception and cognition and their implications for UX and interface design,
3. UX Lifecycle (Wheel) and processes,
4. research methods and approaches for gathering users’ requirements,
5. understanding users’ characteristics, diversity, needs, and contexts of product/system use,
6. user mental models and designer’s conceptual model,
7. nature of UX design, design solutions, methods, and techniques,
8. UX empirical and analytical evaluation methods and techniques including
usability, and
design guidelines.

Special Note: Occasionally, I get students with considerable experience in HCI/UX. If you are one of those students, you are still welcome to participate in this course, but be mindful that this is not an advanced course in HCI/UX.

REQUIRED TEXTBOOK

OTHER REQUIRED READINGS


Additional Readings

Additional readings will be assigned throughout the semester as needed. Later in the semester, you will be asked to consult this article on user interface prototyping tools:


COURSE DESIGN
Class time will be divided between lectures, discussions, and activities inside and outside of the classroom. The part of class time used for lectures will be devoted to highlighting course materials, discussions, demos, and hands-on
activities if time permits. The composition of individual class meetings will differ somewhat throughout the semester. Reading the assigned materials is highly recommended before each class session so that you will be able to participate in class constructively. Five percent (10%) of the grade is assigned to constructive class participation, attendance, keeping up with assigned readings, discussions, and class activities.

Outside of the classroom
Students will acquire hands-on experience in UX by working on a team project to develop a product for a “real client or user group.” That is, gathering usage data from onsite using a specific research method. The team project is time consuming and your success in completing it will depend on effective collaboration and time management. Expect to spend a chunk of time (from 2 to 6 hours a week depending on the Part in question) working on this project from the beginning to the end of the semester.

COMMUNICATION
I will communicate with you through your UTK email address. If you prefer to use another address, consult the OIT Helpdesk to obtain directions for forwarding your UTK mail to your preferred address if you don’t wish to check both accounts.

COMPUTING REQUIREMENTS
The Office of Information Technology (OIT) provides training classes in using various technologies for students at no charge (advance registration is required). The following are the major requirements.

- Adequate level of computing skills, including but not limited to, use of Microsoft Office suite or equivalent, web searching including search engines, online databases, and online catalogs;
- Subscription to the SIS student listserv
- Knowledge of using Zoom and Canvas.
- UTK email account.
- Access to a PowerPoint Reader, PowerPoint, Prezi, or equivalent to download lecture notes.
- Computer, microphone, and headphone for attending classes in Zoom. Preferred is a hard-wired computer, especially if your wireless network has a weak signal. Use of a headphone may be needed to receive a high audio quality.
- Attending classes using mobile devices while driving is not recommended. If you do so, you will be responsible for any issues or problems that may arise. Attending classes using your mobile phone or other mobile device may compromise the quality of the audio and video. The instructor is not responsible for this issue.
- Testing before class: Please test your computer audio by running the Zoom Audio before attending each class meeting. This will sync the computer audio in Zoom and ensure a quality audio on both sides during class.

CLASS ATTENDANCE POLICY
Class attendance is required by UT and SIS. Missing classes or failing to participate in class will lower your grade; frequent constructive participation will raise the grade. If you will be absent from class:

- Let me know in advance or as soon as you can;
- Submit any work due from the missed class period,
Listen to missed class session recordings, and

Obtain notes, handouts, etc. from Canvas and/or classmates, as applicable.

Acceptable reasons for absence from class include:

Illness, serious family emergencies, special curricular or job requirements (e.g., conferences), severe weather conditions, religious holidays, participation in official university activities such as music performances, athletic competition or debate; or imposed legal obligations (i.e., jury duty, subpoena).

Missing more than one class meeting for reasons other than those listed above will have a negative impact on your course participation grade; a reduced credit of 2 points will be deducted from the total grade for each absence.

COURSE POLICY
The course is delivered live via Zoom and asynchronously using Canvas for supporting materials and interactions. There will be some sessions delivered asynchronously (previously recorded), which will be announced in advance. I prefer that you speak in class and use text chat less often. Please refrain from using text chat for non-class related conversations.

Be mindful to mute the sound in Zoom during class and turn it on when you speak. Be close to the microphone when you speak so that we are all able to hear you clearly.

E-MAIL NOTIFICATION
I will use email as the main means of communication with you. You are responsible for checking your email regularly. When you email me, please include INSC588 in the subject line of the email so that I identify your email quickly. Try to email me using your email account and not from Canvas because Outlook does not allow replying to email sent via Canvas.

COLLABORATIVE TEAM WORK
For working as a team, you are encouraged to use Google Docs, Google Hangouts, or equivalent applications outside of the classroom. You may also create a user group in Google+, Yahoo Groups, or other social media.

One grade will be assigned to team members working collaboratively on a project or other activity.

EXPECTATIONS
- HCI is about designing and testing interfaces from users’ perspectives. Therefore, you will be spending time collecting data from clients/users in real-world settings. If you are unable to meet this expectation, email me to discuss your options.

- On-time submission of assignments and activities is expected. All submissions must be in Canvas. Please refrain from emailing assignments, unless cleared by the instructor in advance.

- Attendance to assigned readings in the primary and secondary texts, and readings from outside of these sources.
This course will introduce you to use of basic research methods in HCI/UX that are also used in the social sciences. I advise you consult additional sources on research methods to augment your knowledge.

**SUBMISSION OF PROJECTS/ASSIGNMENTS**
Class activities must be submitted in Canvas by 11:59 p.m. EST on the due date as indicated in the Course Schedule. Before submitting an activity, name and save the file or document as follows:

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- Use Word or equivalent and save a document using .doc or .docx.
- Do not use .RTF or .PDF or .HTML or .txt or .dot file formats.
- Paginate each assignment.
- Include a cover page with your name or names of team members, as applicable, project number, course number, instructor's name, semester, and submission date.

**TROUBLESHOOTING**
If you experience Zoom or Canvas connectivity problems, please contact OIT at 865. 974. 9900 or complete a help form online at, http://remedy.utk.edu/contact. Note that OIT office is not open 24/7; therefore, plan to connect to ZOOM at least 30 minutes before class time.

**CLASS ENGAGEMENT AND INTERACTION RULES**
You are highly encouraged to participate in class by sharing constructive ideas and related experiences, engaging in constructive class discussion, and collaborating with peers to solve certain UX problems or simulate situations.

**INCLEMENT WEATHER**
“The chancellor (or appointed representative) may officially close or suspend selected activities of the university because of extreme weather conditions. When a decision to close is made, information is distributed to the campus community, shared with local media, and posted on the front page at http://utk.edu. SIS will cancel classes when UT is closed. Please check the SIS student listserv (UTKSIS-L@LISTSERV.UTK.EDU), UT website, and/or UT Facebook page for messages about closing.

**DISABILITIES THAT CONSTRAIN LEARNING**
Any student who feels he or she may need an accommodation based on the impact of a disability should contact the Office of Disability Services (ODS) at 865.974.6087 in 100 Dunford Hall to document their eligibility for services. ODS will work with students and faculty to coordinate reasonable accommodations for students with documented disabilities.

**COPING WITH STRESS AND PERSONAL HARDSHIP**
The university’s Student Counseling Center offers a range of services to students that meet the requirements at no charge. Visit the Center’s website to
learn about the services offered (https://counselingcenter.utk.edu/clinical-services/counseling-services/). You may also contact the Center by phone at 865.974.2196 or send email to (counselingcenter@utk.edu).

CIVILITY
Civility is genuine respect and regard for others: politeness, consideration, tact, good manners, graciousness, cordiality, affability, amiability and courteousness. Civility enhances academic freedom and integrity, and is a prerequisite to the free exchange of ideas and knowledge in the learning community. Our community consists of students, faculty, staff, alumni, and campus visitors. Community members affect each other’s well-being and have a shared interest in creating and sustaining an environment where all community members and their points of view are valued and respected. Affirming the value of each member of the university community, the campus asks that all its members adhere to the principles of civility and community adopted by the campus: http://civility.utk.edu/

DIVERSITY STATEMENT
“The College of Communication and Information recognizes that a college diverse in its people, curricula, scholarship, research, and creative activities expands opportunities for intellectual inquiry and engagement, helps students develop critical thinking skills, and prepares students for social and civic responsibilities. All members of the College benefit from diversity and the quality of learning, research, scholarship and creative activities is enhanced by a climate of inclusion, understanding and appreciation of differences and the full range of human experience. As a result, the College is committed to diversity and equal opportunity and it recognizes that it must represent the diversity inherent in American society. The College is acutely aware that diversity and fairness are foundations that unite the College’s faculty, staff, students, and the larger communication and information community.” http://www.cci.utk.edu/diversity-statement

ACADEMIC INTEGRITY
Students should be familiar and maintain their Academic Integrity described in http://hilltopics.utk.edu/files/Hilltopics%202015-16.pdf, p. 15 as: “Study, preparation and presentation should involve at all times the student’s own work, unless it has been clearly specified that work is to be a team effort. Academic honesty requires that the student present his or her own work in all academic projects, including tests, papers, homework, and class presentation. When incorporating the work of other scholars and writers into a project, the student must accurately cite the source of that work.”

Students should abide by the Honor Statement described below:

“An essential feature of The University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.”

PLAGIARISM
Plagiarism in any of its several forms is intolerable, and attention to matters of documentation in all written work is expected and required. Inadverterence,
alleged lack of understanding, or avowed ignorance of the various types of plagiarism are not acceptable excuses.

**Specific examples of plagiarism are:**

1. Copying without proper documentation (quotation marks and a citation) written or spoken words, phrases, or sentences from any source;
2. Summarizing without proper documentation (usually a citation) ideas from another source (unless such information is recognized as common knowledge);
3. Borrowing facts, statistics, graphs, pictorial representations, or phrases without acknowledging the source (unless such information is recognized as common knowledge);
4. Collaborating on a graded assignment without the instructor's approval;
5. Submitting work, either in whole or in part, created by a professional service and used without attribution (e.g., paper, speech, bibliography, or photograph).

If you are unsure of the nature of plagiarism should consult the instructor or a guide for writing research reports. Additional resources are available at [http://www.lib.utk.edu/instruction/plagiarism](http://www.lib.utk.edu/instruction/plagiarism)

Infractions of academic integrity are penalized according to the severity of the infraction but may include a course grade of "F" and/or suspension from SIS and UTK.

**ASSIGNMENTS AND GRADING**

Your work will be assigned a grade using the point system. *Only exceptional work will receive an "A" grade.* See the point system under Grading Scale.

Your final grade will be based on total points earned over the course of the semester, in addition to points earned for attendance, constructive class participation including speaking more than texting, and communicating effectively with the instructor.

In grading your project or activity, I will provide constructive comments and/or suggestions for improvement using Word markups. The comments have to do with your work and NOT with you personally. You are welcome to provide feedback about my grading style.

**GRADES TURNAROUND TIME**

I will return graded projects and activities within one to two weeks, unless I am out of town attending professional activities.

You have one week from the time you receive a grade to ask for review. You should do so in writing via email. I will reply to your request within one week.

**DUE DATES AND PAST DUE SUBMISSIONS**

Assignments are to be submitted in Canvas by 11:59 p.m. EST on the due date shown in the Course Schedule. A reduced credit of 5 points will be incurred for
any past due activity, unless I am notified in advance and given an acceptable reason.

INCOMPLETES
Based on adopted University of Tennessee-Knoxville and SIS policy, a grade of an "I" (Incomplete) is reserved for emergencies that prevent the student from completing the course on time. Incompletes are granted only under "the most unusual of circumstances" and solely at the discretion of the instructor. Plan your semester's course of study carefully to ensure sufficient time to complete the required work.

If you "disappear" from attending classes and do not contact me about your absence, you will receive an "F" in the course.

EVALUATION CRITERIA
Generally, the evaluation of projects and other course activities will be based on these factors:
Operational: Meeting the requirements/guidelines and submission on time.
Qualitative: Quality of writing, organization, demonstration of critical thinking, and evidence of reading and understanding, and reflective thinking, among others.
Quantitative criteria: Amount of analysis and synthesis, level of completeness, accuracy, and argumentation, as applicable.

GRADE SCALE
Semester grades will be assigned according to the following scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93≤</td>
<td>(4 quality points per semester hour) superior performance.</td>
</tr>
<tr>
<td>A-</td>
<td>90-92.99</td>
<td>(3.7 quality points per semester credit hour) distinguished grade performance.</td>
</tr>
<tr>
<td>B+</td>
<td>88-89.99</td>
<td>(3.5 quality points per semester hour) better than satisfactory performance.</td>
</tr>
<tr>
<td>B</td>
<td>83-87.99</td>
<td>(3 quality points per semester hour) satisfactory performance.</td>
</tr>
<tr>
<td>B-</td>
<td>80-82.99</td>
<td>(2.7 quality points per semester credit hour) intermediate grade performance.</td>
</tr>
<tr>
<td>C+</td>
<td>78-79.99</td>
<td>(2.5 quality points per semester hour) less than satisfactory performance.</td>
</tr>
<tr>
<td>C</td>
<td>70-77.99</td>
<td>(2 quality points per semester hour) performance well below the standard expected of graduate students.</td>
</tr>
<tr>
<td>D</td>
<td>60-69.99</td>
<td>(1 quality point per semester hour) clearly unsatisfactory performance and cannot be used to satisfy degree requirements.</td>
</tr>
<tr>
<td>F</td>
<td>59.99≥</td>
<td>(no quality points) extremely unsatisfactory performance and cannot be used to satisfy degree requirements.</td>
</tr>
<tr>
<td>I</td>
<td>(no quality points) a temporary grade indicating that the student has performed satisfactorily in the course but, due to unforeseen circumstances, has been unable to finish all requirements. An &quot;I&quot; is not given to enable a student to do additional work to raise a deficient grade. The instructor, in consultation with the student, decides the terms for the removal of the &quot;I&quot;, including the time limit for removal. If the grade “I” is not removed within one calendar year, the grade will be changed to an F.</td>
<td></td>
</tr>
<tr>
<td>The course will not be counted in the cumulative grade point average until a final grade is assigned. No student may graduate with an “I” on the record.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
GRADING

Student class activities will be assigned as follows.

<table>
<thead>
<tr>
<th>Activities</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class attendance, constructive participation; communication with instructor</td>
<td>10%</td>
</tr>
<tr>
<td>Project 1.1: Topic idea &amp; selection, product concept statement, descriptive summary</td>
<td>15%</td>
</tr>
<tr>
<td>Project 1.2: Contextual inquiry and analysis</td>
<td>15%</td>
</tr>
<tr>
<td>Project 1.3: Modeling and design, class presentation</td>
<td>20%</td>
</tr>
<tr>
<td>Project 1.4: Prototyping</td>
<td>15%</td>
</tr>
<tr>
<td>Project 1.5: UX design evaluation, consolidation or Parts 1.1-1.5, class presentation, reflections</td>
<td>25%</td>
</tr>
</tbody>
</table>

COURSE EVALUATION

You will receive email from TNVoice toward the end of the term to evaluate the course. Please participate in this valuable process. I may also ask you to evaluate the wellness of the course informally at different points in the semester. I would appreciate your honest comments and suggestions so that I can make adjustment, as appropriate.

CITING SOURCES

I prefer APA style, but you may use your preferred standard style manual for citing sources.

TEAM PROJECT

The team project is semester-long and divided into 5 parts. The parts are based on the UX Lifecycle employed for product development.

TEAMWORK

One of the challenges of teamwork is being able to work together and establish trust and rapport. You need to get to know one another to develop trust in each other’s abilities, skills, and knowledge.

Each team should develop a process or procedure for effective communication, time management, and solving problems.

I advise you contact me if you experience persistent problems or issues or if you are unable to solve the problems.

Factors for Successful Team Collaboration

Open, quick, and honest communication,
Authenticity,
Compromise,
Tolerance,
Trust,
Good rapport,
Effective time management,
Equal distribution of efforts and contribution,
Reliability, and
Being a good team player.
https://www.risebeyond.org/6-skills-needed-for-effective-collaboration/

**Team Project - Exception to the Product Development Rules in this HCI course**

At each stage of the UX Lifecycle in any environment different teams are created and each member of a team has specific roles and responsibilities. For example, teams include: Usage research team (to understand and analyze user needs), design team (to create and design content; includes interaction designer, visual designer, etc.), prototype team (to produce design alternatives), and evaluation team (to realize, test, evaluate, and refine the design). Teams interact and work together to create the target product or system. However, For the first time I am providing the following alternative project approach. PLEASE read the alternative approach carefully. I will ask you to sign a form if you choose this alternative:

**Alternative Approach: Work on all project parts (1.1-1.5) and make presentations individually. [No team work]**

If you believe that you are unable to work in a team on the project (parts 1.1-1.5), be it remotely or face-to-face, and if you perceive and are certain that you will able to complete all project parts individually. However, keep in mind that once you make this decision and sign the form, I will not permit you to go back working with a team. Be mindful of the intensity of working on the project as some parts are more time consuming than others and will also require brainstorming and finding solutions to generate user-centered design that is meaningful, useful, emotionally supportive, and effective.
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>In-class activity</th>
<th>DUE (besides discussion of readings)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan 13</td>
<td>Introductions</td>
<td>None</td>
<td>Student experiences; think about client/user group &amp; context for team project Part 1.1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Jan 27</td>
<td>What is HCI/UX Design? Interface design rules; The Wheel; Perception; Human-centered design</td>
<td>UX (Intro., chap. 1); JJ (Intro and chaps. 1-2); DN (chap. 1)</td>
<td>Various</td>
<td>Teams and initial topic ideas for team project - no formal submission</td>
</tr>
<tr>
<td>3</td>
<td>Feb 3</td>
<td>Vision: Gestalt Principle Cognition; Design concepts: Affordances, Action Cycle; Product Concept Statement</td>
<td>Krug (chap. 1) ; JJ (chaps. 2; 6-7); UX (chaps. 3; 31-32); DN (chaps. 2-3)</td>
<td>Various</td>
<td>Teams &amp; project topics, client-user group</td>
</tr>
<tr>
<td>4</td>
<td>Feb 10</td>
<td>How we use the web? Higher cognition, Human error; Mental and Conceptual models; Affordances</td>
<td>Krug (chap. 2) ; JJ (chaps., 8-10); DN (chaps., 4-5); UX (chap. 15; 33.36)</td>
<td>Various</td>
<td>Product concept statement-informal</td>
</tr>
<tr>
<td>5</td>
<td>Feb 17</td>
<td>Understanding needs Contextual inquiry &amp; analysis (CI &amp; A)</td>
<td>UX (chaps. 7-8)</td>
<td>CI &amp; A</td>
<td>Project 1.1</td>
</tr>
<tr>
<td>6</td>
<td>Feb 24</td>
<td>C&amp;I cont’d. WAAD, Requirements and modeling</td>
<td>UX (chaps. 7-9)</td>
<td>CI &amp; A</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>March 2</td>
<td>Requirements and modeling cont’d.</td>
<td>UX (chaps. 7-10)</td>
<td>Requirements &amp; modeling</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>March 9</td>
<td>Research methods, Design solutions, Design thinking, Conceptual design</td>
<td>UX (chaps. 14-15); DN (chap. 6)</td>
<td>Design – ideation - sketching</td>
<td>Project 1.2</td>
</tr>
</tbody>
</table>
| 9    | March 23| Guest speaker (TBA); Design prototyping; Design Thinking; Conceptual design | UX (chap. 20)  
Top 22 prototyping tools (see Syllabus for link); UX(chaps. 14-15; 17-18) | Use prototyping tool for team project                                                              |                                      |
| 10   | March 30| Guest speaker (TBA) Emotional design; Agile UX and processes         | UX(chap29); DN (chap. 2, p. 49-)                                          | Prototyping activities                                                                            |                                      |
| 11   | April 6 | Evaluation methods and techniques                                      | UX (chaps. 21-22)                                                        | Various                                                                                            | Project 1.3 & Presentations          |
*University policy:* The instructor reserves the right to revise, alter or amend this syllabus, course schedule, due dates, and assignments as necessary. Students will be notified in class and/or on Canvas course site of any change. If you have any concerns about this practice, do not hesitate to talk with me.

**Readings in course schedule**

Reading from the main textbook (Hartson & Pyla, 2018) are marked as **UX**. Other readings are marked as follows:


All course materials will be posted in Canvas course site under Files, unless noted otherwise. **Project 1.1** is already in Canvas.

I hope you will enjoy this course. I wish you success 😊😊