HCI 545 Embodied Interaction

Instructor

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Course Information

HCI 545 Section 901/910
Class times: N/A
Room: N/A
Campus: Online
Course homepage: https://d2l.depaul.edu/
Last day to drop with no financial penalty: Apr 13; after Apr 13, a grade of "W" will be assigned.

Course Summary

This course covers the history, theory and philosophy behind embodied interaction (including cognitive, physiological, and social aspects), and discusses some of the best current examples of embodied interaction in digital interfaces. The course leverages students' knowledge of User-Centered Interaction Design (UCID) from HCI 440 and their exposure to the psychological and physiological theories and experimental findings from HCI 450 and extends these into embodied interaction in three dimensions. It does this by exposing students to post-WIMP (windows, icons, menus, pointer) and blended/ubiquitous computing interfaces. Coursework includes a series of individual assignments that results in an embodied interaction prototype suitable for evaluation by real users; critical review and discussion of current research and development in embodied interaction; and critical review of other students' work. The sequence of assignments require students to identify an opportunity or need for application of embodied interaction; perform user research; create appropriate models as precursors to design; perform conceptual design; and, design and create an embodied interaction prototype in a medium of their choice. They must then evaluate their prototype in tests with real users.

Students are expected to share their application proposal, elements of other assignments, and reading summaries with the rest of the class.

Learning Objectives (LO)

1. Students will implement a user-centered embodied interaction design process in a series of individual assignments. (LO1)
2. Students will apply user-centered design methods in their assignments and evaluate the suitability of these methods by reflecting on their experiences with them afterward. (LO2)
3. Students will read about and evaluate embodied interaction theory and practice by writing critical summaries of recent articles and papers in the field and discussing these articles and papers with other students. (LO3)
4. Students will demonstrate critical thinking and evaluation skills and professional communication by constructively critiquing other students' work. (LO4)
5. Students will communicate their work in a clear and professional manner using written reports, still images, and recorded video reports. (LO5)

Required & Recommended Texts

(*Required*) Dourish, P. *Where the Action Is: The Foundations of Embodied Interaction*, Bradford/MIT Press, 2001. ISBN: 978-0262541787.

(*Optional*) Maher, M.L. and Lee, L. *Designing for Gesture and Tangible Interaction (Synthesis Lectures On Human-Centered Informatics, #36)*, Morgan & Claypool, 2017. ISBN: 9781627056847 (print), ISBN: 9781627058865 (ebook). Available **free** to DePaul students through the DePaul Library *Synthesis Computer & Information Science Collections 1-5→Synthesis Lectures on Human-Centered Informatics* database.

 Additional selected readings are assigned throughout the quarter.

Additional Course Materials

IMPORTANT COVID-19 NOTE: Due to the extenuating circumstances posed by the COVID-19 situation, for the Spring 2020 offering of this course, the requirements for construction of physical prototypes are being relaxed. Construction of physical prototypes is still encouraged, but if a student does not have access to appropriate materials for all aspects of their projects, alternative means of representing those aspects are acceptable, such as via detailed design drawings.

Students create one or more physical prototypes in this course. The choice of medium for the prototypes is left to the student. Students may incur additional course supply costs beyond that of the required text. Types of supplies might include, but are not limited to: paper or cardboard; modeling clay and armature wire; specialized paper products such as Bristol Board; Foamcore; balsa wood; littleBits™ (http://littlebits.cc/) electronic building blocks; Arduino boards and components such as the LilyPad; and/or 3D printing supplies or service fees.

If a student chooses to follow the non-electronic prototype route (clay, paper, etc.) for their prototypes, a budget of approximately $35 should suffice. If, for some part of their project, a student chooses to follow the electronic prototype route, a budget of approximately $75-100 should cover basic electronic supplies (such as the LilyPad or a basic littleBits™ kit).

We will discuss more about materials in connection with specific assignment requirements throughout the quarter.

Prerequisites

The following requirement is listed as a prerequisite:

- HCI Foundation courses (HCI 440 and [HCI 450 or equivalent human factors and psychology coursework])

Please contact the instructor if you have any questions or concerns about the prerequisite requirement.

Class Format

IMPORTANT COVID-19 NOTE: Due to the extenuating circumstances posed by the COVID-19 situation, for the Spring 2020 offering of this course, all lectures will be delivered as downloadable screencasts via D2L.

Class meetings involve a combination of lecture, demonstrations, discussions, and a variety of individual and group class-time activities.

Coursework	Grade Proportion
Participation	10 points
Individual Assignments	90 points
Reading summaries and discussions	25 points
Critical Reviews	30 points
Total	155 points

Evaluation & Grading

Coursework includes the following components:

Participation

Academic integrity quiz. All students must review available academic integrity resources and complete a short online affirmation of their awareness of these resources. This coursework component is mandatory.

Personal introduction. All students must post a brief personal introduction at the start of the quarter. This helps provide a starting point for relationships to develop for the critical reviews. (LO4)

Individual Assignments. In the course of completing the individual assignments, students implement a user-centered embodied interaction design process: explore needs and opportunities; perform user research; develop appropriate models; perform conceptual design; and prototype and evaluate prototypes with real users. Students draw on the basic user-centered interaction design process from HCI 440 as well as any more-advanced courses they have taken. The series of individual assignments has two goals: (1) the creation and evaluation of an embodied interaction prototype; and (2) the evaluation of the suitability of the process and process methods used for the embodied interaction context. (LO1-LO2, LO5)

Reading summaries and discussions. A number of recent articles or papers in embodied interaction is assigned for reading, summarization, and discussion. Each paper corresponds to a relevant topic in the user-centered embodied interaction design process. The student must summarize and discuss each paper. After reading a paper, the student posts a one- or two-paragraph summary of the paper (earning 3 points) to the appropriate D2L Discussion Forum topic, which must be submitted *before* being able to read any other summary. Two additional points are earned by contributing to the paper discussion (1 point per substantive discussion point). (LO3)

Critical reviews. Critical reviews provide the student with the opportunity to receive constructive feedback on their assignment efforts by sharing them with other students in the course. Students are required to share elements of each assignment via D2L Discussion Forum topic postings. Students earn credit for this coursework item by providing thoughtful and substantive critiques of these assignment elements. Critiques must include both positive and negative critical feedback. (LO4)

Time Budget

HCI 545 Embodied Interaction is a time-intensive course, since observational and making activities are involved. Students should allow for a minimum of 10-15 hours of work on individual assignments each week, with additional time allowed for reading summaries and discussions and participation in critical reviews.

Grading Scale. Final letter grades will be given based on the following minimum percent of total points earned:

If the final numeric grade is less than:	and greater than or equal to:	the final letter grade is:
–	93	A
93	90	A-
90	87	B+
87	83	B
83	80	B-
80	77	C+
77	73	C
73	70	C-
70	67	D+
67	60	D
60	0	F

The maximum number of coursework points possible is 155 points. The major grade-tier boundaries and approximate corresponding point totals are:

Points	Normalized Numeric Grade	Letter Grade
144	93	A
129	83	B
113	73	C
93	60	D

Grade Responsibility. Every effort is made to provide the student with the resources and support needed to succeed in the course. Grades are assigned fairly and impartially based on the coursework submitted by the student, without regard to external circumstances such as GPA goals or employer tuition reimbursement minimum grade requirements. It is the student's responsibility to earn his or her final grade. Please do not ask for a grade which you do not earn.

Student Support & Communication. Support for students is provided through weekly office hours dedicated to the course and through online question-and-answer discussion forums on D2L. Online discussion forums are available to all students for posting general coursework questions and comments. The instructor makes every effort to respond to postings within 24 hours. However, due to schedule issues, it occasionally may take longer to receive an instructor response. Email should be used only for personal issues or for student-specific coursework questions. Make all questions clear and specific.

> **Please include the course number (*e.g.*, HCI 545) in the email *Subject:* field and include your full name in the *body* of the email.**

Note: The instructor does not preview homework assignments. Please make all questions specific, not general.

Class Schedule

IMPORTANT COVID-19 NOTE: Due to the extenuating circumstances posed by the COVID-19 situation, the Spring 2020 offering of this course will be subject to on-going revision in order to adapt it to an OL-only environment, limited access to prototype materials, and highly-limited mobility of its students. Students will be informed of changes and adaptations throughout the quarter, and well in advance of any coursework.

The assignment schedule in the D2L Checklist will be updated as the quarter progresses and should be used as the definitive assignment schedule.

Policies & Expectations

An asterisk '' following a heading indicates an instructor-specific policy*

General Guidelines for Course Behavior

- Take an active role in class discussions and activities.
- Practice professionalism in your communications with the professor and fellow students.

Attitude

A professional and academic attitude is expected throughout this course.

Civil Discourse

DePaul University is a community that thrives on open discourse that challenges students, both intellectually and personally, to be Socially Responsible Leaders. It is the expectation that all dialogue in this course is civil and respectful of the dignity of each student. Any instances of disrespect or hostility can jeopardize a student's ability to be successful in the course. The professor will partner with the Dean of Students Office to assist in managing such issues.

Exceptional Circumstances*

Every effort is made to accommodate students who encounter exceptional personal circumstances during the quarter. Students who experience unanticipated personal, work, health, or family emergencies should notify the instructor by email or phone as soon as possible after the emergency with a brief explanation of the circumstances and any anticipated impact these might have on coursework. Students who have anticipated exceptional circumstances such as secular or religious holiday observances, medical treatment, or travel should notify the instructor as early as possible of these circumstances and any anticipated impact these might have on coursework. In both unanticipated and anticipated cases, a suitable plan for dealing with the coursework impact is agreed upon by the student and instructor. In some cases, suitable documentation of the exceptional circumstances may be requested by the instructor.

Incomplete Grades

An incomplete grade is a special, temporary grade that may be assigned by an instructor when unforeseeable circumstances prevent a student from completing course requirements by the end of the term and when otherwise the student had a record of satisfactory progress in the course. CDM policy requires the student to initiate the request for incomplete grade before the end of the term in which the course is taken. Prior to submitting the incomplete request, the student must discuss the circumstances with the instructor. Students may initiate the incomplete request process in MyCDM.

- All incomplete requests must be approved by the instructor of the course and a CDM Associate Dean. Only exceptional cases will receive such approval.
- If approved, students are required to complete all remaining course requirement independently in consultation with the instructor by the deadline indicated on the incomplete request form.
- By default, an incomplete grade will automatically change to a grade of 'F' after two quarters have elapsed (excluding summer) unless another grade is recorded by the instructor.
- An incomplete grade does NOT grant the student permission to attend the same course in a future quarter.

Withdrawal

Students who withdraw from the course do so by using the Campus Connection system (http://campusconnect.depaul.edu. Withdrawals processed via this system are effective the day on which they are made. Simply ceasing to attend, or notifying the instructor, or nonpayment of tuition, does not constitute an official withdrawal from class and will result in academic as well as financial penalty.

Retroactive Withdrawal

This policy exists to assist students for whom extenuating circumstances prevented them from meeting the withdrawal deadline. During their college career students may be allowed one medical/personal administrative withdrawal and one college office administrative withdrawal, each for one or more courses in a single term. Repeated requests will not be considered. Submitting an appeal for retroactive withdrawal does not guarantee approval.

College office appeals for CDM students must be submitted online via MyCDM. The deadlines for submitting appeals are as follows:

- Autumn Quarter: Last day of the last final exam of the subsequent winter quarter
- Winter Quarter: Last day of the last final exam of the subsequent spring quarter
- Spring Quarter: Last day of the last final exam of the subsequent autumn quarter
- Summer Terms: Last day of the last final exam of the subsequent autumn quarter

Coursework Grade Review Requests*

Every effort is made to grade in a fair and consistent manner. Should a disagreement arise about a coursework grade, the student may submit a grade review request in writing via email to the instructor. The request must be submitted within 48 hours after the assignment grade has been posted. The request must include the student's argument for a different grade evaluation, based on verifiable evidence presented by the student. The instructor handles grade review requests and responds to the student with a review decision as soon as possible.

Academic Integrity Policy and Plagiarism

This course will be subject to the academic integrity policy passed by faculty. More information can be found at http://academicintegrity.depaul.edu/.

The university and school policy on plagiarism can be summarized as follows: Students in this course should be aware of the strong sanctions that can be imposed against someone guilty of plagiarism. If proven, a charge of plagiarism could result in an automatic grade of 'F' in the course and possible expulsion. The strongest of sanctions will be imposed on anyone who submits as his/her own work any assignment which has been prepared by someone else.

Instructor Policy Extensions: Academic Integrity Policy and Plagiarism*

Students must complete a short *Academic Integrity Awareness Quiz* before submitting their first assignment. If you have any questions about what constitutes an academic integrity violation or what its consequences might be, please be sure to have these questions answered before submitting your first assignment.

Resources for Students with Disabilities

Students who feel they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss their specific needs. All discussions will remain confidential.

To ensure that you receive the most appropriate accommodation based on your needs, contact the instructor as early as possible in the quarter (preferably within the first week of class), and make sure that you have contacted the Center for Students with Disabilities (CSD) at:

Student Center, LPC, Suite #370
Phone number: 773-325-1677
Fax: 773-325-3720
TTY: 773-325-7296

Online Instructor Evaluation

Instructor and course evaluations provide valuable feedback that can improve teaching and learning. The greater the level of participation, the more useful the results. As students, you are in the unique position to view the instructor over time. Your comments about what works and what doesn't can help faculty build on the elements of the course that are strong and improve those that are weak. Isolated

comments from students and instructors' peers may also be helpful, but evaluation results based on high response rates may be statistically reliable (believable). As you experience this course and material, think about how your learning is impacted. Your honest opinions about your experience in and commitment to the course and your learning may help improve some components of the course for the next group of students. Positive comments also show the department chairs and college deans the commitment of instructors to the university and teaching evaluation results are one component used in annual performance reviews (including salary raises and promotion/tenure). The evaluation of the instructor and course provides you an opportunity to make your voice heard on an important issue—the quality of teaching at DePaul. Don't miss this opportunity to provide feedback!

Changes to Syllabus

This syllabus is subject to change as necessary during the quarter. If a change occurs, it will be thoroughly addressed during class, posted under *News* in D2L and sent via email.