CSE 440 Introduction to HCI: User Interface Design, Prototyping, and Evaluation

Credits
5.0 (3 hrs lecture, 2 hrs section)

Lead Instructor
James Landay

Textbook
None

Course Description
Human-Computer Interaction (HCI) theory and techniques. Methods for designing, prototyping, and evaluating user interfaces to computing applications. Human capabilities, interface technology, interface design methods, and interface evaluation tools and techniques.

Prerequisites
either CSE 326 or CSE 332.

CE Major Status
Selected Elective

Course Objectives
At the end of the course, students will understand the basics of user centered design. They will have completed a substantial group project, involving identifying, iteratively refining, prototyping, and testing a complex user interface. In addition, they will have written a final report on their project, made a video, presented the results in a talk, and made a poster.

ABET 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 within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
(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, economic, environmental, and societal context
(i) a recognition of the need for, and an ability to engage in life-long learning

(j) knowledge of contemporary issues
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Course Topics

- Contextual inquiry and task analysis
- Sketching and storyboarding
- Paper prototyping
- Video prototyping
- Building web-based interactive prototypes
- History of human-computer interaction
- User testing
- Heuristic evaluation
- Interface metaphors