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## CSE 441 Advanced HCI: Advanced User Interface Design, Prototyping, and Evaluation

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### Credits

5.0 (5 hrs lecture/meeting times)

### Lead Instructor

James Landay

### Textbook

None

### Course Description

Human-Computer Interaction (HCI) theory and techniques. Advanced methods for designing, prototyping, and evaluating user interfaces to computing applications. Novel interface technology, advanced interface design methods, and prototyping tools.

### Prerequisites

CSE 440.

### CE Major Status

None

### Course Objectives

Gain a much deeper understanding of techniques in human computer interaction, including design methods, testing methods, and prototyping techniques, along with knowledge of when to best employ them. Work in teams to build and test a substantial HCI application.

### 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**

- Studio-based design and critiques
- Evaluation techniques for HCI (beyond those covered in CSE 440)
- Mobile user interface design
- Understanding and evaluating interfaces for behavior change
- Visual design