CSE 481H Capstone Software Design: Accessibility

Credits

5.0 (3 hrs lecture, 2 hrs+ meeting times)

Lead Instructor

Alan Borning

Textbook

None

Course Description

Students work in teams to design and implement a software project involving multiple areas of the CSE curriculum. Emphasis is placed on the development process itself, rather than on the product.

Prerequisites

CSE 331 or CSE 341; CSE 326 or CSE 332; CSE 351 or CSE 378; substantial programming experience such as CSE 451 or CSE 457.

CE Major Status

Selected Elective

Course Objectives

Smart phones and other mobile devices are revolutionizing the tools available to people with disabilities. The objectives of this capstone are to design, build, and test accessibility applications on mobile devices, working with mentors who are either themselves disabled, or who work closely with the blind, deaf, or other communities. In the process, students will learn about working on teams and the software design process, and also about the needs and concerns of people with disabilities with respect to information technology. They will also further develop presentation and writing skills in the context of the project report, project video, and final poster session.

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

- software development in teams
- programming on the Android or iPhone mobile platforms
- developing project proposals and mockups
- building a prototype implementation on an Android or iPhone device
- techniques for testing mobile applications with people with disabilities
- producing a short video, writing a final report, presenting the work at a poster session