Course Profile: Human Computer Interaction

Course Number: INF 7940

Credits: 3

MLIS Prerequisite(s): INF 6420 or permission of instructor
MSIM Co-requisite(s): INF 6000

Rationale for Inclusion in Curriculum:
The interactions between human beings and technologies are becoming integrated part of our daily lives. A good understanding of the interactions is desirable for designing better user experiences. HCI has two sides: on one hand it focuses the methods and processes of designing for quality UX products/systems; and on the other hand it focuses on the methods and processes of evaluating and testing products/systems for better user experience. This course focuses on the evaluation and testing aspect of HCI. The demand from various types of organizations for trained professionals who can conduct usability evaluations and user experience research is increasing rapidly. Students will learn from this course the principles and theories of human-computer/information interactions; computer interaction technologies; and the skills for usability/user experience research/evaluations. This course is the first step in learning HCI, and it prepares students for the INF7950: UX Design course that focuses on the UX design approaches and methods.

The course offers students the opportunities to apply the HCI theories in practice through a series of assignments for a class project, which will include user, task and context analysis, and usability/UX evaluations of a system/product. This course contributes to the School's user experience concentration curricula, and demonstrates the School's effort to train professional user experience researchers as the demand continues to grow from the society.

Learning Outcomes:

By the end of the course students will be able to:

- Understand HCI principles and guidelines
- Understand computer system hardware features and how its design impacts human interactions
- Understand the concepts of usability and user experience (UX)
- Conduct user and task analysis for information tasks
- Assess usability of product/system using heuristic evaluation and cognitive walkthrough methods
- Design and conduct formal usability/UX testing that involves real users
- Use standard or established tools/instruments in usability/UX testing
- Understand universal usability and accessibility issues
- Use other methods to perform user interface evaluation and usability testing
- Explore advanced topics and research issues in HCI.

Content:
This course will explore the human, computer technologies and usability/user experience research and evaluations aspect of HCI. Specifically, the course will cover the following topics:
Human characteristics and Human Information Processing Model;
Mental models and Conceptual models, emotion and context: how people interact with technologies;
Computer/technology systems and interface architecture: interaction devices and styles;
Usability and User experience (UX) goals
User research methods
Heuristics evaluation and cognitive walkthrough methods to assess UI
Usability evaluation framework and methods;
Cognitive models and questionnaire design; standard questionnaires for usability/UX testing
Usability/UX testing design and implementation
Other Usability/UX test methods
Related topics: universal usability, social computing; AI and UX, etc.

Course Methodology:
The course combines lectures, discussions, demonstrations, and assignments/projects to help students understand HCI design principles, interface evaluation and usability testing techniques in developing information systems. Students are encouraged to discuss, question, and clarify course content in class meetings.

Bases for Evaluation of Student Performance:
Projects, exercises, exam, and class participation.

Text: To be determined.

Approved: 4/12
Updated: 8/13; 01/22