



Course Information Sheet

CSCI 4800

Human-Computer Interaction

Brief Course Description (50-words or less)	Issues in the design, development, and evaluation of user interfaces for computer systems. Concepts in human factors, usability, and interface design, and the effects of human capabilities and limitations on interaction with computer systems.
Extended Course Description / Comments	This course is an introduction to Human-Computer Interaction and focuses primarily on user-centered design techniques. Students will work on a semester-long team-based project, identifying a problem in a novel domain, interviewing users, and subsequently develop and test prototype solutions.
Pre-Requisites and/or Co-Requisites	CSCI 2720 Data Structures
Required, Elective or Selected Elective	Selected Elective Course
Approved Textbook	Author(s): Sharp, Preece, Rogers Title: <i>Interaction Design</i> Edition: 3rd
Specific Learning Outcomes (Performance Indicators)	<p>This course presents an introduction to Human-Computer Interaction. At the end of the semester, all students will be able to do the following:</p> <ol style="list-style-type: none">1. Apply the principles of user-centered design, via group projects, in formulating user interface prototypes in novel domains.2. Create a hierarchical task analysis to analyze and specify which tasks should be supported in a user interface3. Gather design requirements from users and conduct a requirements analysis4. Describe the paradigm shifts in HCI and explain the causal factors for each.5. Develop and implement a testing plan for evaluating a user interface design6. Develop and implement benchmark testing7. Generate several user interface design alternatives that satisfy a set of user requirements8. Use programming or a software package to create prototypes9. Assess and compare the success of a user interface along multiple dimensions10. Evaluate the trade-offs of usability considerations (e.g. novice vs experienced users, efficiency) in all stages of the design process.

ABET Learning Outcomes Graduates of the program will have an ability to:

- A. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- B. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- C. Communicate effectively in a variety of professional contexts.
- D. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
- E. Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
- F. Apply computer science theory and software development fundamentals to produce computing-based solutions.

Relationship Between Student Outcomes and Learning Outcomes

Specific Learning Outcomes	ABET Learning Outcomes						
		A	B	C	D	E	F
1	●	●			●	●	●
2	●						
3	●						●
4							
5			●				●
6			●				●
7			●				●
8			●				
9	●				●		
10			●		●		

Major Topics Covered

HCI Historical Perspectives 5-hours

Introduction & Need for HCI, Paradigm Shifts, Historical Figures
Major Milestones

Human-Factors 3-hours

Cognition, Sensation and Perception Motor Skills User-Centered Design 11-hours
Stakeholder Analyses, Brainstorming Exercises, Design Alternatives Prototyping, Testing & Evaluation Plans

User Interface Design 13-hours
Guidelines & Expectations, User Experience, Platform UI Guidelines, Interaction Paradigms, GUI Programming, Help & Documentation Errors

Data Collection Techniques 7-hours Interviews, Surveys,
Observational Techniques, Controlled Studies, Cognitive Models,
Cognitive Walkthroughs, Thinkaloud Study, Task Analyses, Data
Analyses

Groupwork 4-hours

Special Topics

Miscellaneous

Examinations

Course Master: Dr. Ari Schlesinger

Last modified by: Dr. Ari Schlesinger on 2/16/2024