**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 Textbooks**  
(if more than one listed, the textbook used is up to the instructor’s discretion)  
Author(s): Sharp, Preece, Rogers  
Title: *Interaction Design*  
Edition: 3rd  
ISBN-13:

**Specific Learning Outcomes**  
(Performance Indicators)  
This course presents an introduction to Human-Computer Interaction. At the end of the semester, all students will be able to do the following:  
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 interface  
3. Gather design requirements from users and conduct a requirements analysis  
4. 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 design  
6. Develop and implement benchmark testing  
7. Generate several user interface design alternatives that satisfy a set of user requirements  
8. Use programming or a software package to create prototypes  
9. Assess and compare the success of a user interface along multiple dimensions  
10. Evaluate the trade-offs of usability considerations (e.g. novice vs experienced users, efficiency) in all stages of the design process.
### Relationship Between Student Outcomes and Learning Outcomes

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### Major Topics Covered (Approximate Course Hours)

- **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
- **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. Delaram Yazdansepas