Syllabus

Course

Code: *CSC-451*

Title: ***Human Computer Interaction***

Credits

3-0-0-3

Text Books

- ***Dix, Alan; Finlay, Janet; Abowd, Gregory; and Beale, Russell, "Human-Computer Interaction", 3rd Edition, Prentice Hall, 2004.***

References

Prerequisite:

CSC-102

Course Description

This course provides an introduction to and overview of the field of human-computer interaction (HCI). HCI is an interdisciplinary field that integrates theories and methodologies from computer science, cognitive psychology, design, and many other areas. Course readings will span current theory and practice in interface specification, design and evaluation. Students will work on both individual and team projects to design, implement and evaluate computer interfaces.

Objectives:

- Design, implement and evaluate effective and usable graphical computer interfaces.
- Describe and apply core theories, models and methodologies from the field of HCI.
- Implement simple graphical user interfaces.
- Describe special considerations in designing user interfaces for older adults.

Course Outline

Week	Topics	Topic Details
1	**Introduction to Course**	• Discussion of syllabus • What does HCI means • Software needed to implement the course home works and projects.
2 3	**The Human**	• Introduction • Input and output channels • Human memory • Thinking: reasoning and problem solving • Emotion • Individual differences • Psychology and the design of interactive systems
4 5	**The Computer**	• Introduction • Text entry devices • Positioning, pointing and drawing • Display devices • Devices for virtual reality and 3D interaction • Physical controls, sensors and special devices • Paper: printing and scanning • Memory • Processing and networks
6 7	**The Interaction**	• Introduction • Models of interaction • Frameworks and HCI • Ergonomics • Interaction styles • Elements of the WIMP interface • Interactivity • The context of the interaction • Experience, engagement and fun
8	**Paradigms**	• Introduction • Paradigms for interaction

Week	Topics	Topic Details
9 10	**Interaction Design Basics**	• Introduction • What is design? • The process of design • User focus • Scenarios • Navigation design • Screen design and layout • Iteration and prototyping
11 12	**HCI in the software process**	• Introduction • The software life cycle • Usability engineering • Iterative design and prototyping • Design rationale
13	**Design Rules**	• Introduction • Principles to support usability • Standards • Guidelines • Golden rules and heuristics • HCI patterns
14	**Implementation supports**	• Introduction • Elements of windowing systems • Programming the application • Using toolkits • User interface management systems
15	**Evaluation techniques**	• What is evaluation? • Goals of evaluation • Evaluation through expert analysis • Evaluation through user participation • Choosing an evaluation method

Grading

Assessment/Evaluation:
1. Class work.   (10%)
2. Quizzes (5)   (10%)
3. Midterm-1 Exam.   (20%)
4. Midterm-2 Exam.   (20%)
5. Final Exam.   (40%)
    Total   **(100%)**

Intended Learning Outcomes:

Upon completion, students will be able to:

Outcomes	Assessment Methods
Understanding the human components functions regarding interaction with computer.	Quizzes Exams Class discussion
Understanding computer components functions regarding interaction with human.	Quizzes Exams Class discussion
Demonstrate understanding of interaction between the human and computer components.	Quizzes Exams Class discussion
Understanding and usage of Paradigms	Quizzes Exams Class discussion

Method of Teaching:

- **Lectures (three hours per week)**