UNIVERSITI TEKNOLOGI MARA

CSC453: HUMAN-COMPUTER INTERFACE

Course Name (English)	HUMAN-COMPUTER INTERFACE APPROVED
Course Code	CSC453

MQF Credit	3

Course Description	This course is intended to introduce students to the concepts of human-computer interaction and apply them in designing a user interface. The components that will be covered include human and technology aspects of the HCI. These elements are important as the design and implementation of efficient, effective and user friendly computing systems depends upon understanding of those two elements. In this course, students will demonstrate their HCI knowledge via assignments that require them to analyze the user interface, designing a user interface, developing an interactive system and thus evaluating it using suitable tools and technique.

Transferable Skills	Interaction programming skills

Teaching Methodologies	Lectures, Blended Learning, Lab Work

CLO	CLO1 Define concepts and central issues of human-computer interaction (HCI)
	CLO2 Explain the concepts of the theories and models in designing usable systems
	CLO3 Apply user interface standards and guidelines in the development of usable,interactive systems

Pre-Requisite Courses	No course recommendations

Topics

1. Introduction to Human Computer Interaction
1.1) Good and poor design
1.2) What is interaction design
1.3) Who is involved in ID
1.4) The user experience
1.5) Usability goals
1.6) User experience goals
1.7) Design principles

2. Understanding and Conceptualizing Interaction
2.1) Understanding the problem space and conceptualizing design
2.2) Interface metaphors
2.3) Interaction Types
2.4) Theories, model and framework concepts

3. Cognitive Aspects and Social Interaction
3.1) The cognition
3.2) Cognitive framework
3.3) Face to face conversations
3.4) Remote conversations
3.5) Telepresence
3.6) Co-presence
3.7) Emergent social phenomenon

4. Emotional Interactions
4.1) Emotion and user experience
4.2) Expressive interfaces
4.3) Frustrating interfaces
4.4) Persuasive technologies and behavioural change
4.5) Anthrophomism and Zoomorphism
4.6) Models of emotions

5. Interfaces
5.1) Interface types
5.2) Natural user interfaces
5.3) Which interface?

6. Data Gathering
6.1) Five key issues
6.2) Data gathering
6.3) Interviews
6.4) Questionnaires
6.5) Observation
6.6) Choosing and combining techniques

7. Data Analysis, Interpretation and Presentation
7.1) Qualitative vs quantitative
7.2) Tools to support data analysis
7.3) Using theoretical framework
7.4) Presenting the findings

8. Interaction Design and Establishing Requirements
8.1) The ID process and practical issues
8.2) Data gathering for requirements
8.3) Data analysis, interpretation, and presentation
8.4) Task description
8.5) Task analysis

9. Design, Prototyping and Construction
9.1) Prototyping and constructions
9.2) Conceptual design : moving from requirements to first design
9.3) Physical design
9.4) Using scenarios in design
9.5) Using prototypes in design
9.6) Tool support

10. Testing and Evaluation
10.1) Why, what and when to evaluate?
10.2) Evaluation approaches and methods
10.3) Evaluation case studies

11. An Evaluation Framework
11.1) DECIDE : A framework to guide evaluation

12. Evaluation: User Testing, Field Studies and Analytical
12.1) User testing
12.2) Field studies
12.3) Analytical evaluation
12.4) Inspection methods (heuristics evaluation and walkthrough)
12.5) Predictive models

Assessment Breakdown	%
Continuous Assessment	70.00%
Final Assessment	30.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Assignment 1: Analyzing web based applications and redesigning the user interface and interactivity.	5%	CLO1 , CLO2
	Assignment	Assignment 2: Research Assignment. Provide a research topic related to HCI to the students	5%	CLO1 , CLO2 , CLO3
	Group Project	Part 2: Project Evaluation. Students are required to evaluate the prototype using a suitable evaluation method	10%	CLO1 , CLO2 , CLO3
	Group Project	Part 1: Project Design and Development. Provide students with a project title. Based on that, students are required to establish the user requirements, design and develop a prototype.	20%	CLO1 , CLO2 , CLO3
	Test	Test 1	15%	CLO1 , CLO2 , CLO3
	Test	Test 2	15%	CLO1 , CLO2 , CLO3

Reading List	Recommended Text	**Jenny Preece,Helen Sharp,Yvonne Rogers 2015,** *Interaction Design - Beyond Human-Computer Interaction*, **John Wiley & Sons [ISBN: 9781119020752]**
	Reference Book Resources	**Donald A. Norman 2013,** *The Design of Everyday Things*, **Basic Books (AZ) [ISBN: 9780465050659]** **I. Scott MacKenzie 2012,** *Human-computer Interaction*, **Morgan Kaufmann [ISBN: 9780124058651]** **Jenifer Tidwell 2010,** *Designing Interfaces*, **"O'Reilly Media, Inc." [ISBN: 9781449379704]** **Ben Shneiderman,Catherine Plaisant 2010,** *Designing the User Interface*, **Addison-Wesley Professional [ISBN: 0321601483]**
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	