CSC-401: Human Computer Interaction

General Information

Course Number	CSC-401
Credit Hours	Credit Hours (3+0)
Prerequisite	No Prerequisite Specified
Course Coordinator	Not Specified

Course Objectives

This course aims at covering the broad range of topics such as introduction to HCI, memory and attention, emotions and affective computing, PACT framework, vision is optimized to see structure, color vision is limited to differentiate object/things, limits on attention shape our thoughts and actions, environment, interface design: visual aspects, responsiveness bloopers, navigation bloopers, designing websites, user experience (UX) design, usability of systems, UX evaluation, and task analysis.

Catalog Description

CSC 401

Course Content

Session No.	Week No.	Topics	
01-04	1	Introduction • Human Computer Interaction (HCI) • Relationship of HCI with other disciplines • Goals of HCI • Need of HCI- Hardware, Software and Non-Software Perspectives • Summary	
		Memory and Attention • Memory • Attention • Human error • Summary	
05-08	2	Emotion and affective computing • Psychological theories of emotion • Detecting and recognizing emotions • Expressing emotion • Summary	
		PACT: A framework for designing interactive systems • People • Activities • Context • Technologies • Scoping a problem with PACT • Summary	
09-12	3	Our Vision is Optimized to See Structure Gestalt Theories/Principles and Interaction Design • Proximity • Similarity • Continuity • Closure	

		• Symmetry • Figure/Ground • Common Fate • Combined • Summary	
		Our Color Vision is Limited • Color Vision • Edge Contrast • Ability to Discriminate Colors • Color Blindness • External Factors • Guidelines for Using Colors • Summary	
13-16	4	Limits on Attention Shape Our Thought and Action • We focus on our goals and pay little attention to our tools • We use external aids to keep track of what we are doing • We follow the information "scent" toward our goal Summary Limits on Attention Shape Our Thought and Action • We prefer familiar paths • Our thought cycle: goal, execute, evaluate • After we achieve a task's primary goal, we often forget cleanup steps • Summary	
First Mid Exams			
17-20	5	Envisionment • Finding Suitable Representations • Basic Techniques • Summary Envisionment • Prototypes • Envisionment in Practice • Summary	
21-24	6	Interface Design: Visual Aspects • Command Languages • Graphical User Interfaces • Interface Design Guidelines • Summary Responsiveness Bloopers • Introduction • Common responsiveness bloopers • Reasons for poor responsiveness • Summary	
25-28	7	Responsiveness Bloopers • Avoiding responsiveness bloopers: Design principles • Avoiding responsiveness bloopers: Techniques • Summary of responsiveness techniques • Summary	
29-32	8	Navigation Bloopers • Not showing where they are • Leading users astray and not showing the way • Summary/Class test Navigation Bloopers • Poor search navigation • Summary	
Second Mid Exams			

33-36	9	Designing Websites • Website development • The Information Architecture of Websites • Summary/Class test Designing Websites • Navigation Design for Websites • Summary/Class test	
37-40	10	User Experience (UX) Design • Engagement • Aesthetic Design • Design for Pleasures • Summary/Class test	
41-44	11	User Experience (UX) Design • Identity • Adaptivity • Narrative • Immersion • Flow • Summary/Class test	
45-48	12	Usability of System • Accessibility • Usability • Acceptability • Summary/Class test Usability of Systems • Acceptability • Design Principles • Summary/Class test	
49-52	13	Evaluation • Formative evaluation • Summative evaluation • Expert evaluation • Discount usability engineering • Summary/Class test Evaluation • Cognitive walkthrough • Participant-based evaluation • Cooperative evaluation • Co-discovery • Controlled experiments • Evaluation in practice • Summary/Class test	
53-56	14	Task analysis • Goals, tasks and actions • Task analysis and systems design • Simple task analysis • Complex task analysis • Summary/Class test Task analysis Representative task • Cognitive work analysis • Summary/Class test	
57-60	15	Semester Assignments Evaluation	
Final Exams			

Text Book

1. Designing Interactive Systems: A comprehensive guide to HCI, UX and interaction design, D. Benyon, 3rd edition, Pearson Education, 2013. (Chapters, Designing interactive systems (Chapter 1, 2, 3, 4, 5, 7, 8, 10, 11, 14, 15, 16, 21, 22, 23)
2. Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Guidelines, Jeff Johnson, Second Edition (Chapter 2, 5, 8)
3. GUI Bloopers 2.0 Common User Interface Design Don’ts and Dos, Jeff Johnson UI Wizards, Inc. (Chapter 3, 7)

Reference Material

1. Human Computer Interaction, A. Dix et al., 3rd edition, Pearson Education, 2003.
2. Designing the User Interface: Strategies for Effective Human-Computer Interaction, B. Shneiderman et al., 5th edition, Pearson Education, 2009.
3. The essence of human computer interaction, C. Faulkner, 1st Ed.
4. The design of everyday things, D. Norman, 2nd Ed.
5. http://hcibib.org/

Course Learning Outcomes

	Course Learning Outcomes (CLO)
1	To demonstrate human factors of HCI including human body physical abilities, ergonomics, accessibility, health issues, cognitive load and psychology as well as hardware factors of HCI including different input and output devices e.g. keyboard, mouse, and touch screens.
2	To implement user-centered approach in software development process and apply suitable techniques for collecting user requirement and analyzing task.
3	To evaluate the systems and user interfaces which accomplish the societal issues.

CLO-PLO Map

	Program Learning Outcomes											
CLO ID	**GA1**	**GA2**	**GA3**	**GA4**	**GA5**	**GA6**	**GA7**	**GA8**	**GA9**	**GA10**	**GA11**	**GA12**
CLO 1	1	0	0	0	0	0	0	0	0	0	0	0
CLO 2	0	0	1	0	0	0	0	0	0	0	0	0
CLO 3	0	0	0	0	0	1	0	0	0	0	0	0

Approvals

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Approved By	Not Specified
Last Update	