

Course Title	Human Computer Interaction		
Course Code	DC-321		
Credit Hours	3 (2,1)		
Category	Computer Science Core		
Prerequisite	None		
Co-Requisite	None		
Follow Up	None		
Course Learning Outcomes (CLOs)	At the end of the course, the students will be able to:	BT	PLO
	CLO1: HCI Interaction Paradigms.	C2 (Understand)	1, 2
	CLO2: Explain HCI design rules and evaluation techniques.	C2 (Explain)	1, 2
	CLO3: Understand cognitive models.	C2 (Understand)	1, 2
	CLO4: Understand computer mediated communication, ubiquitous computing, and related tools & technologies	C2 (Understand)	2,3,4,5
Course Description	Topics: Interaction Paradigms: Batch Processing, Time sharing, Networking, Graphical Displays, Microprocessor, WWW, Ubiquitous Computing. Human: Fitt's Law, Human Information Processor, Emotions, Psychology and Design of Interactive Systems, Accessibility. Computers: capabilities and limitations of Computer Systems, Color Models, New Interactive Systems: Speech, touch, gestures, handwriting recognition. Interactions: Models of Interaction, Frameworks, Interaction Styles, User Experience, Interaction Design. Usability: HCI in software Process, Learnability, Flexibility, Robustness. Design Rules: Principles, Standard (ISO9241), Guidelines, Heuristics (Neilsen, Norman, Shneiderman), HCI Patterns (Mobile & Web Application UI). Implementation Support: jQuery, User Interface Management System and architectural Patterns. Evaluation Techniques: expert analysis (Heuristic Evaluation), Evaluation through user participation: Empirical methods and experiment design, statistical measures, Observational Techniques. User Support: Tutorial help, documentation, Wizards, adaptive help. Cognitive Models: KLM-GOMS Task Analysis: Hierarchical Task Analysis, Knowledge based Analysis, Entity Relationship based Techniques. Dialog Design: Diagrammatic Notations: State Transition Networks, Petri Nets, state charts, flow charts. Overview of Textual Notation: Grammars, Production Rules. Computer Mediated Communication: groupware, computer mediated communication, Meeting and decision support systems, argumentation Tools, shared application and Artefacts. Issues of Groupware implementation. Ubiquitous Computing: Introduction, information and data visualization overview.		
Text Book(s)	1. Alan Dix, Janet Finlay Gregory D Abowd, and Russel Beale, "Human Computer Interaction", 3rd Ed. Pearson Prentice Hall, 2004, ISBN-13: 978-0130461094. 2. Julie A Jacko and Andrew Sears, "The Human Computer Interaction Handbook," 2nd Ed., CRC, 2007, ISBN 0-8058-5870-9.		
Reference Material	1. Ben Shneiderman, "Designing the User Interface: Strategies for Effective Human-Computer Interaction", 6th Ed., Addison Wesley, 2016, ISBN -13: 978-0134380384: 2. William Albert and Thomas Tullis, "Measuring the User Experience", Morgan Kaufmann, 2013, Paperback ISBN: 9780124157811 3. Helen Sharp, Jenny Preece and Yvonne Rogers, "Interaction Design: Beyond Human-Computer Interaction", Wiley, 2002, ISBN-13: 978-0470665763 4. http://www.ui-patterns.com 5. http://www.androidpatterns.com 6. http://www.usability.gov		