



Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India

(Autonomous Institute Affiliated to University of Mumbai)

Course Code	Course Name	Teaching Scheme (Hrs/week)			Credits Assigned			
		L	T	P	L	T	P	Total
CPC802	Human Machine Interaction	4	-	--	4	-	--	4
		Examination Scheme						
		ISE		MSE		ESE		
		10		30		100 (60% Weightage)		

Pre-requisite Course Codes	CPL501(Web Technology) CPC602 (Software Engineering)
At end of successful completion of this course, student will be able to	
Course Outcomes	CO1 Identify the various design principles used for interacting between human and machine.
	CO2 Apply human psychology of everyday actions and UI design process for real world applications.
	CO3 Implement mobile, windows and web based application.
	CO4 Evaluate and justify UI design
	CO5 Create application for social and technical task.

Module No.	Topics	Ref.	Hrs.
1	Introduction Introduction to Human Machine Interface, Hardware, software and operating environment to use HMI in various fields, The psychopathology of everyday things – complexity of modern devices; human-centered design; fundamental principles of interaction; Psychology of everyday actions- how people do things; the seven stages of action and three levels of processing; human error	1-8	10
2	Understanding goal directed design Goal directed design; Implementation models and mental models; Beginners, experts and intermediates – designing for different experience levels; Understanding users; Modeling users – personas and goals.	1-8	08
3	GUI benefits of a good UI; popularity of graphics; concept of direct manipulation; advantages and disadvantages; characteristics of GUI; characteristics of Web UI; General design principles.	1-8	08
4	Design guidelines perception, Gestalt principles, visual structure, reading is unnatural, color, vision, memory, six behavioral patterns, recognition and recall, learning, factors affecting learning, time.	1-8	08



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5	Interaction styles Menus; windows; device based controls, screen based controls.	1-8	06
6	Communication Text messages; feedback and guidance; graphics, icons and images; colours.		08
Total			48

References:

- [1] Alan Dix, J. E. Finlay, G. D. Abowd, R. Beale "Human Computer Interaction", Prentice Hall.
- [2] Wilbert O. Galitz, "The Essential Guide to User Interface Design", Wiley publication.
- [3] Alan Cooper, Robert Reimann, David Cronin, "About Face3: Essentials of Interaction design", Wiley publication.
- [4] Jeff Johnson, "Designing with the mind in mind", Morgan Kaufmann Publication.
- [5] Donald A. Normann, "Design of everyday things", Basic Books; Reprint edition 2002.
- [6] Donald A. Norman, "The design of everyday things", Basic books.
- [7] Rogers Sharp Preece, "Interaction Design: Beyond Human Computer Interaction", Wiley.
- [8] Guy A. Boy "The Handbook of Human Machine Interaction", Ashgate publishing Ltd.