

DHANALAKSHMI SRINIVASAN ENGINEERING COLLEGE

(AUTONOMOUS)
 (Approved by AICTE & Affiliated to Anna University, Chennai)
 Accredited with 'A' Grade by NAAC, Accredited by TCS
 Accredited by NBA with BME, ECE & EEE
PERAMBALUR - 621 212. Tamil Nadu.
 website : www.dsengg.ac.in

**COURSE PLAN**

Course Code/Name	U20AI851/HUMAN COMPUTER INTERACTION			
Year/Section/Department	IV/ AI&DS			
Credits Details	L:3	T:0	P:0	C:3
Total Contact Hours Required	45			

Syllabus:

UNIT I FOUNDATIONS OF HCI	No. of Periods 9
The Human: I/O channels – Memory – Reasoning and problem solving; The computer: Devices – Memory – processing and networks; Interaction: Models – frameworks – Ergonomics – styles – elements – interactivity-Paradigms-case Studies	
UNIT II DESIGN & SOFTWARE PROCESS	No. of Periods 9
Interactive Design basics – process – scenarios – navigation – screen design – Iteration and Prototyping. HCI in software process – software life cycle – usability engineering – Prototyping in practice – design rationale. Design rules – principles, standards, guidelines, rules. Evaluation Techniques – Universal Design	
UNIT III MODELS AND THEORIES	No. of Periods 9
Cognitive models –Socio-Organizational issues and stake holder requirements –Communication and collaboration models-Hypertext, Multimedia and WWW.	
UNIT IV MOBILE HCI	No. of Periods 9
Mobile Ecosystem: Platforms, Application frameworks- Types of Mobile Applications: Widgets, Applications, Games- Mobile Information Architecture, Mobile 2.0, Mobile Design: Elements of Mobile Design, Tools, Case Studies.	
UNIT V WEB INTERFACE DESIGN	No. of Periods :9
Designing Web Interfaces – Drag & Drop, Direct Selection, Contextual Tools, Overlays, Inlays and Virtual Pages, Process Flow. Case Studies	

Objective:

To understand the concept of HCI

- ❖ To design effective dialog for HCI
- ❖ To assess the importance of user feedback
- ❖ To design effective HCI for individuals and persons with disabilities
- ❖ To explain the HCI implications for designing multimedia/ ecommerce/ e-learning Web sites
- ❖ Develop meaningful user interface.

Text Book:

T1: Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale, “Human Computer Interaction”, 3rd Edition, Pearson Education, 2004 (UNIT I, II & III)
 T2: Brian Fling, “Mobile Design and Development”, First Edition, O’Reilly Media Inc., 2009 (UNIT – IV)
 T3. Bill Scott and Theresa Neil, “Designing Web Interfaces”, First Edition, O’Reilly, 2009. (UNIT-V)

Reference Book:

R1: “Human Computer Interaction: Basics and Practice” by Serengul Smith-Atakan
 R2: “Human Computer Interaction Handbook: Fundamentals, Evolving Technologies, and Emerging Applications, Third Edition (Human Factors and Ergonomics)” by Julie A Jacko

Website:

W1: <https://www.hcibook.com/e3/chapters/ch13>
 W2: <https://www.businessofapps.com/app-developers/research/types-of-mobile-apps/>

Online Mode of Study (if Any):

❖ <https://nptel.ac.in/courses/106/103/106103115/>

Course Plan:

Topic Number	Topic	Reference Detail	Page Number	Mode of teaching	Number of Periods Required	Cumulative Period
UNIT I FOUNDATIONS OF HCI						
1	The Human: I/O channels	T1	1-4	BB	1	1
2	Memory	T1	4-6	BB	1	2
3	Reasoning and problem solving	T1	6-8	BB	1	3
4	The computer: Devices – Memory	T1	8-14	BB	1	4
5	processing and networks; Interaction	T1	16-17	BB	1	5
6	Models – frameworks	T1	17-18	BB	1	6
7	Ergonomics – styles – elements	R1	47-51	BB	1	7
8	interactivity- Paradigms-	T1	21-24	BB	1	8
9	case Studies	T1	24-25	BB	1	9

Outcome of Unit I:

Interpret the computer devices and various interaction models.

UNIT II DESIGN & SOFTWARE PROCESS						
10	Interactive Design basics	T1	26-27	PPT	1	10
11	process – scenarios	T1	27-28	BB	1	11
12	navigation – screen design	T1	28-29	BB	1	12
13	Iteration and Prototyping	T1	29-30	BB	1	13
14	HCI in software process – software life cycle	R2	67-71	PPT	1	14
15	Usability engineering – Prototyping in practice design rationale.	T1	33-37	PPT	1	15
16	Design rules principles, standards guidelines, and rules.	R1	98-99	BB	1	16
17	Evaluation Techniques	T1	44-55	BB	1	17
18	Universal Design	T1	55-61	BB	1	18
Outcome of Unit II: To understand the software process and design rules.						
UNIT III MODELS AND THEORIES						
19	Cognitive models	T1	62-66	PPT	2	20
20	Socio-Organizational issues and stake holder requirements	W1	-	BB	2	22
21	Communication and collaboration models-.	T1	74-82	BB	2	24
22	Hypertext, Multimedia	T1	83-98	PPT	2	26
23	WWW	T1	98-120	PPT	1	27
Outcome of Unit III: Identify the stake holder's requirements and choose the appropriate models.						
UNIT IV MOBILE HCI						
24	Mobile Ecosystem: Platforms, Application frameworks-	T2	123-132	PPT	2	29
25	Types of Mobile Applications: Widgets	W2	-	PPT	2	31
26	Applications, Games- Mobile Information Architecture	T2	136-139	PPT	2	33
27	Mobile 2.0,	T2	140-143	BB	1	34
28	Mobile Design: Elements of Mobile Design,	T2	144-147	BB	1	35
29	Tools, Case Studies	T2	148-149	BB	1	36

Outcome of Unit IV:

Develop mobile HCI using mobile elements and tools by considering mobile eco system

UNIT V WEB INTERFACE DESIGN

30	Designing Web Interfaces – Drag & Drop	T3	150-153	PPT	2	38
31	Direct Selection	T3	154-156	BB	1	39
32	Contextual Tools	T3	157-162	BB	2	41
33	Overlays	T3	163-167	PPT	2	43
34	Inlays and Virtual Pages, Process Flow	T3	168-174	PPT	1	44
35	Case Studies	T3	175-177	PPT	1	45

Outcome of Unit V:

Develop meaningful user interface and Determine the tools and techniques for quality improvement

Course Outcome:

At the end of course:

Students should be able to do:

CO1: Interpret the computer devices and various interaction models (K2)**CO2:** Summarize the interactive design basics and HCI software process (K3)**CO3:** Identify the stake holders requirements and choose the appropriate models (K2)**CO4:** Develop mobile HCI using mobile elements and tools by considering mobile eco system(K3)**CO5:** Develop meaningful user interface (K3)**CO6:** Determine the tools and techniques for quality improvement (K2)**Course Outcome Vs Program Outcome Mapping:**

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2	1	-	-	2	3	-	1	2	2	2	3	2	3
CO2	3	2	1	1	2	-	-	1	2	2	3	3	3	3
CO3	2	1	-	-	3	-	-	1	2	2	2	2	3	3
CO4	2	2	1	1	3	-	2	1	2	2	3	3	3	3
CO5	3	2	1	1	3	3	-	1	1	2	2	2	1	3
CO6	2	1	-	-	2	3	-	1	1	2	2	2	1	3
AVG	2.33	1.50	1.00	1.00	2.50	3	2	1	1.67	2	2.33	2.50	2.17	3

Content beyond Syllabus:

❖ Interaction Techniques for Web and Mobile

Assignment Details:

Web Portal	Assignment	Components	Topic Number with Topic/Unit Details	Relevance to CO
Web Portal 1	--	Assessment – I (60)	Unit I and Unit II	CO1 & CO2
	1	Assignment-Handwritten (20)	1.Human I/O Channels and interaction model 4.Computer Devices and Memory 10. Ergonomics, styles & elements	CO1
	2	Poster/PPT Presentation (20)	14. HCI in Software Process, Prototyping, 16.Design Rule, 17. Evaluation Techniques	CO2
Web Portal 2	--	Assessment – II (60)	Unit III and IV	CO3 & CO4
	3	Seminar (20)	17. Evaluation techniques and universal design 19. Cognitive Model 20. Socio organizational Issues	CO3
	4	Case Study Report/ Mini Project/ Model Making (20)	22. Hypertext, Multimedia 24. Mobile Ecosystem 26. Mobile Information Architecture	CO4
Web Portal 3	--	Model Exam (75)	Unit V	CO1 to CO6
	5	Technical Aptitude (15)	30.Designing Web Interfaces – Drag & Drop and Overlays and Inlays	CO5 & CO6
		Attendance (Course attendance-10)		

Submission Details:

Phase 1(Before AT1)	Phase 2 (Before AT2)	Phase 3 (Before AT3)
Assignment 1	Assignment 2	Assignment 3

Google Class Code Details:

Prepared By

Verified By
(HOD/AI&DS)

Approved By
PRINCIPAL