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 (2025-2026 EVEN SEM)

Name of the Faculty				
Designation/Department	**ASSISTANT PROFESSOR /IT**			
Course Code/Name	**U20IT851/HUMAN COMPUTER INTERACTION**			
Year/Section/Department	IV/ IT/A			
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	
TOTAL: 45 PERIODS	

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: **CO1**: Interpret the computer devices and various interaction models (K2)						

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: **CO 2**: Summarize the interactive design basics and HCI software process (K3)						
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: **CO 3**: Identify the stake holders requirements and choose the appropriate models (K2)						
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:
CO 4: Develop mobile HCI using mobile elements and tools by considering mobile eco system(K3)

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:
CO 5: Develop meaningful user interface (K3)
CO 6: Determine the tools and techniques for quality improvement (K2)

Course Outcome:

At the end of course:
Students should be able to do:
CO1:Interpret the computer devices and various interaction models (K2)
CO 2:Summarize the interactive design basics and HCI software process (K3)
CO 3:Analyse the stake holders requirements and choose the appropriate models (K2)
CO 4:Implement mobile HCI using mobile elements and tools by considering mobile eco system(K3)
CO 5:Develop meaningful user interface (K3)
CO 6:Understand the tools and techniques for quality improvement (K2)

Course Outcome Vs Program Outcome Mapping:

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

Content beyond Syllabus:

- Interaction Techniques For Web and Mobile

Assignment:

Web Portal	Assignment	Components	Topic Number with Topic/Unit Details	Relevance to CO
Web Portal 1	**--**	**Assessment – I (60)**	**Unit I and II**	**CO1 & CO2**
	1	**Assignment-Handwritten (20)**	1.Human I/O Channels and interaction model 10.Interactive Design Basics	**CO 1**
	2	**Poster/PPT Presentation (20)**	4.Computer Devices and Memory , 5. Processing and networks	**CO 2**
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	**CO 3**
	4	**Case Study Report/ Mini Project/ Model Making (20)**	22. Hypertext, Multimedia 24.Mobile Ecosystem 27. Mobile 2.0	**CO 4**
Web Portal 3	**--**	**Model Exam (75)**	**Unit V**	**CO1 to CO6**
	5	**Technical Aptitude (15)**	Designing web interfaces	**CO 5 & CO 6**
		Attendance (Course attendance-10)		

Submission Details:

Phase 1(Before AT 1)	Phase 2 (Before AT 2)	Phase 3 (Before AT 3)
Assignment 1	Assignment 2	Assignment 3

PLAN OF ASSESSMENT TEST –DISTRIBUTION OF MARKS:

TEST	CO- MARK WISE DISTRIBUTION						BLOOM'S LEVEL MARK WISE DISTRIBUTION					
AT-1	CO1	CO2	CO3	CO4	CO5	CO6	BTL1	BTL2	BTL3	BTL4	BTL5	BTL6
	30	30										
AT-2	CO1	CO2	CO3	CO4	CO5	CO6	BTL1	BTL2	BTL3	BTL4	BTL5	BTL6
			30	30								
MODEL	CO1	CO2	CO3	CO4	CO5	CO6	BTL1	BTL2	BTL3	BTL4	BTL5	BTL6
	20	20	20	20	10	10						

Prepared By **Verified By**

AP/IT **HOD/IT**

Approved By

Principal