

**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)**

<b>Name of the Faculty</b>				
<b>Designation/Department</b>	<b>ASSISTANT PROFESSOR /IT</b>			
<b>Course Code/Name</b>	<b>U20IT851/HUMAN COMPUTER INTERACTION</b>			
<b>Year/Section/Department</b>	<b>IV/ IT/A</b>			
<b>Credits Details</b>	<b>L:3</b>	<b>T:0</b>	<b>P:0</b>	<b>C:3</b>
<b>Total Contact Hours Required</b>	<b>45</b>			

**Syllabus:**

<b>UNIT I FOUNDATIONS OF HCI</b>	<b>No. of Periods 9</b>
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	
<b>UNIT II DESIGN &amp; SOFTWARE PROCESS</b>	<b>No. of Periods 9</b>
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	
<b>UNIT III MODELS AND THEORIES</b>	<b>No. of Periods 9</b>
Cognitive models –Socio-Organizational issues and stake holder requirements –Communication and collaboration models-Hypertext, Multimedia and WWW.	
<b>UNIT IV MOBILE HCI</b>	<b>No. of Periods 9</b>
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.	
<b>UNIT V WEB INTERFACE DESIGN</b>	<b>No. of Periods :9</b>
Designing Web Interfaces – Drag & Drop, Direct Selection, Contextual Tools, Overlays, Inlays and Virtual Pages, Process Flow. Case Studies	
<b>TOTAL: 45 PERIODS</b>	

**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
<b>UNIT I FOUNDATIONS OF HCI</b>						
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)

<b>UNIT II DESIGN &amp; SOFTWARE PROCESS</b>						
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
<b>Outcome of Unit II:</b>						
<b>CO 2:</b> Summarize the interactive design basics and HCI software process (K3)						
<b>UNIT III MODELS AND THEORIES</b>						
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
<b>Outcome of Unit III:</b>						
<b>CO 3:</b> Identify the stake holders requirements and choose the appropriate models (K2)						
<b>UNIT IV MOBILE HCI</b>						
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:**

<b>Web Portal</b>	<b>Assignment</b>	<b>Components</b>	<b>Topic Number with Topic/Unit Details</b>	<b>Relevance to CO</b>
<b>Web Portal 1</b>	--	<b>Assessment – I (60)</b>	<b>Unit I and II</b>	<b>CO1 &amp; CO2</b>
	<b>1</b>	<b>Assignment-Handwritten (20)</b>	1.Human I/O Channels and interaction model 10.Interactive Design Basics	<b>CO 1</b>
	<b>2</b>	<b>Poster/PPT Presentation (20)</b>	4.Computer Devices and Memory , 5. Processing and networks	<b>CO 2</b>
<b>Web Portal 2</b>	--	<b>Assessment – II (60)</b>	<b>Unit III and IV</b>	<b>CO3 &amp; CO4</b>
	<b>3</b>	<b>Seminar (20)</b>	17. Evaluation techniques and universal design 19. Cognitive Model 20. Socio organizational Issues	<b>CO 3</b>
	<b>4</b>	<b>Case Study Report/ Mini Project/ Model Making (20)</b>	22. Hypertext, Multimedia 24.Mobile Ecosystem 27. Mobile 2.0	<b>CO 4</b>
<b>Web Portal 3</b>	--	<b>Model Exam (75)</b>	<b>Unit V</b>	<b>CO1 to CO6</b>
	<b>5</b>	<b>Technical Aptitude (15)</b>	Designing web interfaces	<b>CO 5 &amp; CO 6</b>
		<b>Attendance (Course attendance-10)</b>		

**Submission Details:**

<b>Phase 1(Before AT 1)</b>	<b>Phase 2 (Before AT 2)</b>	<b>Phase 3 (Before AT 3)</b>
<b>Assignment 1</b>	<b>Assignment 2</b>	<b>Assignment 3</b>

**PLAN OF ASSESSMENT TEST -DISTRIBUTION OF MARKS:**

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

**Prepared By****AP/IT****Verified By****HOD/IT****Approved By****Principal**