Course Code:	Subject Title: Digital Interaction Design
	Year and Semester: IV Year I Semester

COURSE OBJECTIVE:

The main objectives are

- 1. Demonstrate an understanding of guidelines, principles, and theories influencing human computer interaction.
- 2. Recognize how a computer system may be modified to include human diversity. . Select an effective style for a specific application.
- 3. Design mock ups and carry out user and expert evaluation of interfaces.
- **4.** Carry out the steps of experimental design, usability and experimental testing, and evaluation of human computer interaction systems.
- **5.** Use the information sources available, and be aware of the methodologies and technologies supporting advances in HCI

COURSE OUTCOMES: Students will be able to:

SN	OUTCOME	Cognitive Levels as per Bloom's Taxonomy	Weightage (%)
CO1	List various classic Universal user, centric models	L1	20
CO2	Outline complex interaction styles and techniques for contextual design.	L2	20
СОЗ	Classify various applications to simulate natural language interaction.	L2	20
CO4	Choose suitable designs for web and mobile applications.	L3	20
CO5	Build the challenges for visualization researchers and practitioners alike.	L3	20

CO,PO Mapping Matrix

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3												2	
CO2	3	3	2		2									3
CO3	3	3											2	
CO4	3	3			3									3
CO5	3		3											2

CO,PO,PSO JUSTIFICATION

CO No	PO/ PSO	CL	Justification						
1	1	3	Strongly mapped as student can apply Fundamentals of computer knowledge to build graphical user interfaces.						
	1	3	Strongly mapped as students learn to use various kinds of interaction mechanisms.						
2		3	Strongly mapped as students can use various tools which are used to understand the problem at various levels.						
2	3 2		Moderately mapped as students will be able to design interface to provide solutions for various problems.						
	5	2	Moderately mapped as students can analyze the need of various graphical tools and appropriate tools to build interface.						
3	1 3		Strongly mapped as student can learn various kinds of simulation mechanisms for interaction.						
3	2	3	Strongly mapped as student can analyze the complex interfaces those are used in various real time applications.						
	1	3	Strongly mapped as students apply the concepts of GUI and Interaction with computer in professional developments.						
4	2	3	Strongly mapped as students will be able to design and implement beautiful interfaces for various problems.						
	5	3	Strongly mapped as students can apply various tools for designing the graphical interfaces.						
5	1	3	Strongly mapped as students can understand the importance various kinds of documentation.						
3	3 3		Strongly mapped as students can prepare documentation for describing the usage of interface.						

UNIT-I 8 Hours

Introduction to Usability of Interactive Systems: Introduction, usability goals and measures, usability motivations, universal usability, goals for our profession Managing.Guidelines, Principles, and Theories: Introduction to Guidelines, Principles and Theories.

UNIT-II 8 Hours

Design Processes: Introduction, Organizational Support for design, The Design Process, Design Framework, Design Methods, Design Tools, Practices and patterns, Social Impact Analysis, Legal Issues.

Direct Manipulation and Immersive Environments: Introduction ,Direct Manipulation, Examples of Direct Manipulation, 2-D and 3-D Interfaces, Teleportation and Presence, Augmented and Virtual Reality.

UNIT-III 8 Hours

Fluid Navigation: Introduction, Navigation by Selection, Small Displays, Content Organization, Audio Menus, Form Fill-in and Dialog Boxes.

Expressive Human and Command Languages: Introduction, Speech Recognition, Speech Production, Human Language Technology, Traditional Command Languages.

UNIT-IV 8 Hours

Devices: Introduction to Keyboards and Keypads, Pointing Devices, Displays.

Advancing the User Experience: Introduction, Display Design, View (Window), Management, Animation, Webpage Design, Color, Non-anthropomorphic Design, Error Messages.

UNIT-V 8 Hours

User Documentation and Online Help: Introduction, Online Vs Paper Documentation, Reading from paper Vs from Displays, Shaping the content of the Documentation, Accessing the Documentation, Online tutorials and animated documentation, Online communities for User Assistance, The Development Process.

Text Books:

1. Ben Shneiderman, Catherine Plaisant, Maxine Cohen, Steven Jacobs, Niklas Elmqvist Designing the User Interface: Strategies for Effective Human, Computer Interaction, Sixth Edition, Pearson Education, 2017.

Reference Books:

- 1. Preece, Rogers and Sharps, "Interaction Design", 3rd edition, Wiley Dreamtech, 2011.
- 2. The Essential guide to user interface design,2/e, Wilbert O Galitz, Wiley DreamaTech.
- 3. Human Computer, Interaction Dan R.Olsan, Cengage ,2010.
- 4. Jenny Preece, Helen Sharp, Yvonne Rogers, Interaction Design: Beyond Human Computer Interaction, Wiley, 5th Edition, 2019. (Experiments)

Micro Syllabus of Digital Interaction Design

Unit-I: Introduction to Usability of Interactive Systems & Guidelines – Principles – Theories							
Unit	Module	Micro Content					
		Introduction					
	II h.: P. d	usability goals and measure					
II	Usability of Interactive Systems	usability motivations					
Unit – I		universal usability					
		goals for our profession Managing					
	Guidelines – Principles –	Introduction to Guidelines, Principles					
	Theories	and Theories					
Unit-II: Design	Unit-II: Design Processes & Direct Manipulation and Immersive Environments						
Unit	Module	Micro Content					
		Introduction					
		Organizational Support for design					
		The Design Process, Design					
		Framework					
Unit-II	Design Processes	Design Methods					
Unit-11		Design Tools					
		Practices and patterns					
		Social Impact Analysis					
		Legal Issues					
		Introduction					
	Direct Manipulation and	Direct Manipulation					

	Immei	rsive Environments	Examples of Direct Manipulation						
	11111101		2,D and 3,D Interfaces						
			Teleportation and Presence						
			Augmented and Virtual Reality						
Unit-III: Fluid Navigation & Expressive Human and Command Languages									
Unit	<u></u>	Module		Micro Content					
		1/1000010	Introdu						
			Navigation by Selection						
				Displays					
	Fluid Navigation			ent Organization					
		• • • • • • • • • • • • • • • • • • •		Menus					
Unit-III			Form I						
			Dialog	Dialog Boxes					
			Introdu						
	-		Speech Recognition						
	_	essive Human and		Production					
	Com	mand Languages	Human	Language Technology					
			Traditional Command Languages						
Unit-IV: Devices & Advancing the User Experience									
Unit		Module		Micro Content					
			Introduction to Keyboards and						
		Devices	Keypads						
		Devices		ng Devices					
_			Display						
			Introdu						
Unit –IV			Display Design						
				Window)					
	Adv	vancing the User	Management – Animation						
		Experience	Webpage Design						
			Color						
			Non-anthropomorphic Design						
			Error Messages						
TT *4		M - 11-	1	Minne Cont. 1					
Unit		Module	T 4 1	Micro Content					
			Introduction						
			Online Vs Paper Documentation						
			Reading from paper Vs from Displays						
			Shaping the content of the Documentation						
Unit-V	User Documentation and								
		Online Help	Accessing the Documentation Online tutorials and animated						
			documentation						
			Online communities for User						
			Assistance						
			The Development Process						
			THE DE	evelopment riocess					