

Branch Name:	IMCA
Program Code:	CS301
Course Title	Web User Interface Design
Course Code	1CS3010705T
Pre-requisite Course:	Basic knowledge of computers, Internet, and fundamental programming concepts with familiarity in HTML. Understanding of basic web browsing, file handling, and general software usage is recommended.

Course Objective:

- To provide understanding of fundamental concepts of web technologies and user interface design.
- To develop skills for designing structured and user-friendly web pages using HTML and CSS.
- To introduce UI design principles, usability, and effective navigation techniques.
- To enable learners to create visually appealing layouts using modern CSS techniques.
- To familiarize students with JavaScript for adding interactivity and dynamic behaviour in web interfaces.
- To expose students to modern tools, trends, and best practices in web UI/UX design.

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)				Evaluation Scheme (Marks)				
Lecture	Tutorial	Practical	Credit	Theory		Practical		Total
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment	
4	-	-	4	60	40	-	-	100

Course Contents:

Unit No	Topics	Total Hours	Weightage (%)
1	Introduction – Web User Interface Design & Web Fundamentals: Digital UI Ecosystem: Evolution of web interfaces (Web 1.0 to modern UI), basics of Internet & WWW, web pages, websites, static vs dynamic sites, domain name, URL, web browsers and servers. UI Design Principles: Importance of UI, usability & accessibility, consistency, simplicity, feedback, user-centered design, navigation basics. HTML for UI Design: Structure of HTML, tags & attributes, text formatting, lists, images, hyperlinks, tables, forms, and layout elements (div, span). Tools & Trends: Web design tools (Notepad++, Dreamweaver, WordPress), modern tools (Figma, Canva), trends like responsive design, mobile-first UI, dark mode, AI-based interfaces.	10	25
2	Introduction – CSS & Web UI Styling: CSS Fundamentals: Introduction to CSS, features and benefits, CSS syntax (selectors and declarations), types of CSS (inline, internal, external), linking CSS with HTML. Selectors & Styling: Types of selectors (ID, Class, Group, Universal, Descendant, Child), pseudo-classes, applying styles to elements, grouping and reusability. Text & Font Styling: Text properties (color, alignment, decoration, transformation), font properties (family, size, style, weight), spacing (line-height, letter-spacing, word-spacing).	10	25

	Background & Visual Design: Background properties (color, image, repeat, position), cursor styles, enhancing visual appearance of UI elements.		
3	Introduction – Layout Design & Advanced CSS Concepts: Lists & Tables Styling: CSS list properties (list-style-type, position, image), table styling (border, width, height, alignment, padding, colors), improving data presentation in UI. CSS Box Model: Concept of box model (content, padding, border, margin), height and width calculation, spacing and layout control for UI elements. Display & Positioning: Display properties (block, inline, none), positioning techniques (static, relative, absolute, fixed, sticky), controlling layout structure. Layers & Z-Index: Concept of overlapping elements, z-index for layering, managing UI depth and visibility. Float & Layout Handling: Float property, clear property, clearfix technique, basic layout creation using floats.	10	25
4	Introduction – JavaScript & Interactive Web UI: JavaScript Fundamentals: Introduction to JavaScript, role in web UI, client-side scripting, basic syntax, variables, data types, operators, and integration with HTML. Control Structures: Conditional statements (if, else, switch), loops (for, while, do-while), controlling flow of UI logic and dynamic behavior. Functions & Scope: Functions in JavaScript, arrow functions, nested functions, scope and lexical scope, modular programming concepts. DOM & Interactivity: Introduction to DOM (Document Object Model), manipulating HTML elements, handling events (click, hover), creating dynamic and interactive UI. Form Handling & Validation: Working with form elements, basic validation techniques, user input handling, improving user experience with real-time validation.	11	25

Text Books:

1. HTML & CSS: Design and Build Websites – Jon Duckett: Visual and beginner-friendly guide for learning HTML, CSS, and UI design fundamentals.
2. Learning Web Design – Jennifer Robbins: Comprehensive book covering HTML, CSS, JavaScript, and responsive web design concepts.
3. Head First HTML and CSS – Eric Freeman & Elisabeth Robson: Concept-based and interactive approach to understanding web design basics.
4. HTML5 & CSS3: The Complete Reference – Thomas A. Powell: Detailed reference for HTML5, CSS3, and advanced web UI techniques.
5. Web Technology for Students – Himanshu Publications: Academic-oriented book covering Internet, HTML, CSS, and JavaScript for university syllabus.

References Books:

1. HTML & CSS: Design and Build Websites – by *Jon Duckett*
2. Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript and Web Graphics – by *Jennifer Robbins*
3. Head First HTML and CSS – by *Eric Freeman & Elisabeth Robson*
4. CSS: The Missing Manual – by *David Sawyer McFarland*
5. Don't Make Me Think (UX/UI Book) – by *Steve Krug*
6. Designing with Web Standards – by *Jeffrey Zeldman*

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Understand the fundamentals of web technologies, Internet concepts, and the structure of web-based user interfaces.	1 Remembering, 2 Understanding
CLO2	Apply UI design principles, usability concepts, and user-centered design techniques for creating effective web interfaces.	2 Understanding, 3 Applying
CLO3	Develop and design web pages using HTML and CSS for creating structured and visually appealing user interfaces.	2 Understanding, 3 Applying
CLO4	Analyze and implement layout techniques and advanced CSS concepts for building responsive and user-friendly interfaces.	3 Applying, 4 Analyze, 5 Evaluate
CLO5	Develop interactive web pages using JavaScript for dynamic behavior, event handling, and form validation.	2 Understanding, 3 Applying
CLO6	Evaluate and apply modern tools, trends, and best practices in web UI/UX design for real-world applications.	2 Understanding, 4 Analyze, 5 Evaluate, 6 Create

Mapping of CLOs with POs & PSOs

Course Learning Outcomes	Program Outcomes (POs)												Program Specific Outcomes (PSOs)	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CLO1	H	M	-	-	M	-	-	-		L	-	M	H	-
CLO2	-	H	M	-	M	-	-	-	M	M	-	M	H	-
CLO3	-	-	H	M	H	-	-	-	M	-	-	M	H	M
CLO4	-	H	H	M	H	-	-	-	M	M	-	M	H	M
CLO5	-	-	M	-	H	-	-	-	M	-	-	M	H	M
CLO6	-	M	M	-	M	M	M	-	M	-	M	M	M	M

H: High, M: Medium, L: Low