Faculty of Engineering & Technology
Bachelor of Technology (B. Tech)
(W. E. F.: 2023-24)

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Name of Faculty	:	Faculty of Engineering & Technology
Name of Program	:	Bachelor of Technology (B. Tech)
Course Code	:	2BCT03
Course Title	:	Fundamentals of Web Development
Type of Course	:	Professional Core
Year of Introduction	:	2023-24

Prerequisite	:	-
Course Objective	:	• To use Linux operating system knowledge for solving real world problem statements. • To get familiar with the design, architecture and installation of Linux OS. • To understand concepts of booting process, File system, working with files and directories, Editors and Filters/ Text processing commands of Linux OS. • To understand basic concepts to manage the user, group of user's accounts on a system or on a network. • To get familiar with shell scripting or program Linux system.
Course Outcomes	:	At the end of this course, students will be able to:
	CO1	Create well-structured web pages using HTML, including understanding the key elements
	CO2	Create structured web content using HTML, including tables with various attributes, form elements, validations, and an understanding of HTML5 semantic tags for enhanced web page structure.
	CO3	Apply CSS for effective web page styling, covering selectors, the box model, basic layout techniques, and typography adjustments to create visually appealing and well-structured web content.
	CO4	Convert Photoshop templates into functional HTML designs, implement flexible layouts using Flexbox and CSS Grid, and create responsive web designs through media queries and appropriate sizing techniques, ensuring their ability to adapt and design for various devices and screen sizes.
	CO5	Master core JavaScript: variables, loops, DOM manipulation, and learn jQuery for efficient web interactivity and effects.

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
				Theory Marks		Practical Marks		Total Marks
L	**T**	**P**	**C**	**SEE**	**CIA**	**SEE**	**CIA**	
3	0	2	4	70	30	30	20	150

*Legends: **L**-Lecture; **T**–Tutorial/Teacher Guided Theory Practice; **P** – Practical, **C** – Credit, **SEE** – Semester End Examination, **CIA** - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations /MCQ Tests, etc.))*

Course Content

Unit No.	Topics	Hrs.	Weightage	Mapping with CO
1	Introduction to Web Development, Basics of HTML, HTML Document Structure, HTML Elements and Tags, Text Formatting in HTML, Links and Anchors, Lists (Ordered and Unordered), Images and Multimedia, HTML Tables, HTML Forms and Input Elements, Using div and span elements, HTML Project	6	20%	CO 1
2	Introduction to CSS, CSS Syntax and Selectors, CSS Box Model, Styling Text and Fonts, Colors and Backgrounds, Borders and Margins, CSS Float and Clear, Positioning Elements, Flexbox Layout, CSS Grid Layout.	6	20%	CO 2
3	Introduction to Responsive Design, Viewports and Media Queries, Creating Responsive Layouts, CSS Frameworks (Bootstrap), Bootstrap Components (Navbar, Cards, etc.), Bootstrap Grid System, CSS Project	6	20%	CO 3
4	CSS Transitions and Animations, Pseudo-classes and Pseudo-elements, CSS Variables (Custom Properties), CSS Preprocessors (SASS/SCSS), CSS Architecture and BEM Naming Convention.	6	20%	CO 4
5	Introduction to Bootstrap, Bootstrap Components (Navbar, Cards, Modals, etc.), Bootstrap Layout (Grid System, Containers), Customizing Bootstrap, Building Responsive Web Pages with Bootstrap, HTML-CSS-Bootstrap combined Project	6	20%	CO 5

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	**30**	**40**	**30**	**-**	**-**	**-**

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Sr. No.	**Name of Experiment/Tutorial**	**Teaching Hours**
1	Create a basic HTML page with headings, paragraphs, and line breaks.	2
2	Embed images and hyperlinks within the HTML content.	2
3	Design a simple HTML form with various input elements like text fields, radio buttons, checkboxes, and a submit button.	2
4	Implement form validation using HTML attributes.	4
5	Apply CSS styles to format the text, change fonts, and set background colors for HTML elements.	4
6	Add borders and margins to elements to achieve specific layouts.	4
7	Create a webpage layout using Flexbox properties for horizontal and vertical alignment of elements.	4
8	Design a grid-based layout using CSS Grid to organize content in rows and columns.	2
9	Develop a responsive webpage using media queries to adjust the layout for different screen sizes.	2
10	Test the responsive design by viewing the page on various devices.	2
11	Create CSS transitions to add smooth animations to HTML elements.	4
12	Apply pseudo-classes and pseudo-elements to style specific states and elements.	2
13	Write CSS rules using a preprocessor (e.g., SASS/SCSS) to enhance code organization.	2
14	Apply the BEM (Block Element Modifier) naming convention to maintain clear and structured styles.	4
15	Utilize Bootstrap's navigation component (navbar) to create a navigation menu.	2
16	Implement Bootstrap cards to display content with images and text.	2
17	Construct a multi-column layout using Bootstrap's grid system.	2
18	Arrange elements in different columns and adjust their placement on different screen sizes.	2
19	Customize Bootstrap styles by modifying variables to change colors, fonts, and other visual aspects.	2
20	Create a unique look for a Bootstrap-based webpage.	2

Major Equipment/ Instruments and Software Required

Sr. No.	Name of Major Equipment/ Instruments and Software
1	HTML EDITOR /IED

Reference Books

Sr. No.	Name of Reference Books
1	Get Coding!: Learn HTML, CSS & JavaScript & Build a Website, App & Game by Young Rewired State
2	HTML and CSS: Design and Build Websites by Jon Duckett
3	HTML, CSS, and Javascript All in One by Meloni and Kyrin
4	Responsive Web Design with HTML5 and CSS by Ben Frain