Course Syllabus
Gyanmanjari Institute of Technology
Semester-3 (Diploma)

Subject: Responsive Web Page Design-DETCE13111

Type of course: Skill Enhancement Course (SEC)

Prerequisite: NA

Rationale:

Responsive webpage design ensures an optimal user experience across various devices by automatically adjusting layout and content. This approach enhances accessibility, loading speed, and user engagement while reducing bounce rates. Additionally, it simplifies maintenance and updates, as a single design can serve multiple device types effectively and efficiently.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks					Total Marks
				Theory Marks		Practical Marks		CA	
CI	T	P	C	ESE	MSE	V	P	ALA	
0	0	4	2	0	0	10	40	50	100

Legends: CI-ClassRoom Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.

Course Content:

Sr. No	Course Content	% Weightage
1	**Introducing Responsive Web Design** Understanding the Importance of Responsive design, Evolution of Web design paradigms, Principles of Responsive Web design, Introduction to media queries.	10

2	**HTML Fundamentals** Basic HTML structure and semantics, HTML attributes, Formatting Tags (Body, Heading Styles, Paragraph, q, sub, sup, Mark, Pre, Special Characters, head, title) Image Tags (img, figure, fig caption, map, area) Hyper linking, Tables (table, th, tr, td, col, colgroup, caption) , Lists , Semantic Elements (header, nav, section, article, aside, footer), Media Tags (audio, video, embed, svg) HTML Form, Form Object Form Elements and its properties and events (Input types-Text, Date, email etc., Data list, field set, legend, select, option, option group) HTML5 elements for responsiveness, Meta tags and viewport settings.	25
3	**CSS Foundations** Introduction to CSS and its syntax, CSS Types (inline Style, Embedded Style, Linked Style), CSS Selectors (Class and ID), 3 Applying CSS styles to web page elements.	20
4	**Dynamic Design** CSS box model and positioning, CSS animations and transitions, CSS Flexbox and Grid layout for responsiveness, Understanding media queries, Implementing breakpoints for responsive design, Creating fluid and adaptive layouts, Designing responsive navigation menus, Techniques for optimizing images for the web, Responsive image solutions (srcset, sizes, picture element), Embedding responsive videos and other media, Choosing and implementing web-safe fonts, Responsive typography principles, Using Google Fonts and other web font services, Techniques for maintaining readability across devices.	25
5	**Bootstrap Essentials** Introduction to Bootstrap Framework, History of Bootstrap, Advantages of Bootstrap Framework, Responsive web page Major Features of Bootstrap.	20

Continuous Assessment:

Sr. No	Active Learning Activities	Marks
1	**Interactive Timeline of Web Design Paradigms** students individually create an interactive timeline that showcases key milestones in web design history. Include descriptions, images, and videos to illustrate major shifts in design trends and technologies and upload on GMIU web portal.	10
2	**HTML Element Showcase Exhibition** Faculty provide different HTML tags name base on that individually student research their assigned HTML element, gathering information on its purpose, attributes and examples of usage. They create their presentation slides incorporating visuals, examples and upload on GMIU web portal.	10

3	**CSS Code Review Challenge** Faculty provide CSS code snippets base on that Students review the assigned CSS code, identifying syntax errors, inefficient selectors, or opportunities for optimization. They collaborate to make corrections and improvements using their understanding of CSS syntax and upload on GMIU web portal.	10
4	**RWPD Knowledge Duel:** In this activity Faculty provide questions to students based on Web Designing concept which may helpful for job interview and students have to answer it on GMIU web portal.	10
5	**Responsive Web Sprint:** Create a project incorporating HTML, CSS and Bootstrap for responsive websites, emphasizing quick development, adaptive design principles and enhance their skills in Web Designing and upload on GMIU web portal.	10
	Total	50

Suggested Specification table with Marks (Theory): NA

Distribution of Theory Marks **(Revised Bloom's Taxonomy)**						
Level	Remembrance (R)	Understanding (U)	Application (A)	Analyze (N)	Evaluate (E)	Create (C)
Weightage %	NA	NA	NA	NA	NA	NA

Course Outcome:

After learning the course the students should be able to:	
CO1	Understand evolution of web design paradigms and applying the core principles.
CO2	Creating well-structured, semantically meaningful HTML documents.
CO3	Adept at utilizing CSS to enhance the presentation of web pages.
CO4	Appealing web designs using advanced CSS techniques.
CO5	Utilize Bootstrap to rapidly develop responsive web page.

List of Practical

Sr. No	Description	Unit No	Hrs.
1	Study the evolution of web design paradigms from static layouts to adaptive layouts and finally to responsive layouts. Create a timeline or info graphic highlighting key milestones and innovations in web design history.	1	2
2	Research and analyze examples of non-responsive websites and compare them with responsive ones. Identify the benefits of responsive design in terms of accessibility, usability, and user engagement.	1	2
3	Create a simple HTML document with the correct structure, including <html>, <head>, and <body> tags. Use semantic elements like <header>, <nav>, <section>, <article>, <aside>, and <footer> to structure the content appropriately.	2	2
4	i. Use <h1> to <h6> for headings, <p> for paragraphs, and for emphasizing text, <sub> and <sup> for subscripts and superscripts. ii. Utilize <q> for inline quotations, <mark> for highlighted text, <pre> for preformatted text, and handle special characters like ©, ®, ™ using HTML entities.	2	2
5	Create anchor links using <a> tags with appropriate href attributes to link to external websites or internal sections within the same webpage. Experiment with different link styles and target attributes.	2	2
6	Insert images using the <img> tag with appropriate src and alt attributes.	2	2
7	Create an image map using <map> and <area> tags.	2	2
8	i. Create a simple table using <table>, <tr>, <th>, and <td> tags. ii. Use <col> and <colgroup> tags to apply styles to table columns.	2	2
9	i. Create an ordered list using and tags. ii. Create an unordered list using and tags.	2	2
10	i. Create a simple form using <form>, <input>, and <button> tags. ii. Use different input types (text, date, email, etc.) in form fields.	2	2
11	i. Apply inline styles to specific HTML elements using the style attribute. ii. Embed CSS styles within the <style> tag in the HTML document. iii. Link an external CSS file to the HTML document using the <link> tag.	3	2

12	i. Use class selectors (classname) to apply styles to multiple HTML elements. ii. Apply ID selectors (#idname) to uniquely style individual HTML elements. iii. Combine class and element selectors to style specific elements within a class.	3	2
13	Apply different background colors to paragraphs (<p>) using CSS. Add borders and padding to elements to create visual separation.	3	2
14	Create and style a simple form (e.g., text inputs, buttons) using CSS.	3	2
15	Apply CSS styles to tables (<table>, <tr>, <td>) for improved readability.	3	2
16	i. Apply CSS animations or transitions to elements for visual effects (e.g., fade-ins). ii. Use pseudo-elements (::before, ::after) to add decorative elements to HTML.	3	2
17	Create and style a responsive navigation menu using media queries in CSS.	3	2
18	i. Create a div element and apply different border styles, widths, and colours using CSS. ii. Use CSS to position elements using relative, absolute, and fixed positioning.	4	2
19	i. Create a CSS animation to make an element fade in or move across the screen. ii. Implement CSS transitions to smoothly animate changes in element properties (e.g., color change on hover).	4	2
20	Design a responsive layout using CSS Flexbox to arrange elements in a row or column.	4	2
21	i. Create breakpoints in a CSS stylesheet to adjust the layout at specific screen widths. ii. Use min-width and max-width media queries to create fluid layouts that adjust to different viewport sizes.	4	2
22	i. Design a fluid layout that stretches or contracts based on the size of the viewport. ii. Implement adaptive design techniques to optimize layout and content presentation across devices.	4	2

23	i. Create a responsive navigation menu using CSS Flexbox or Grid layout. ii. Implement off-canvas or hamburger menu patterns for mobile devices using CSS.	4	2
24	Create a rotating or scaling animation using CSS @keyframes.	4	2
25	Use media queries to adjust navigation menu styles (e.g., font size, spacing) based on screen width.	4	2
26	Experiment with CSS blend modes to create unique visual effects and overlays.	4	2
27	Create a navigation menu that adjusts its layout for different screen sizes.	5	2
28	Create dynamic and engaging carousels using Bootstrap's carousel feature.	5	4
29	Implement a responsive grid-based gallery using Bootstrap Grid system or Cards.	5	2
		Total	60

Instructional Method:

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory.

The internal evaluation will be done on the basis of Active Learning Assignment.

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

Reference Books:

[1] Complete Reference, Thomas Powell, Tata McGrew Hills, New Delhi.
[2] Bootstrap Reference Guide, Jacob Let, Bootstrap Creative.
[3] HTML& CSS Bootstrap, JakeSpurlock, O'Reilly Media, Inc.