GUJARAT TECHNOLOGICAL UNIVERSITY
Bachelor of Engineering
Subject Code: 3151606

Subject name:Web Development

Type of Course: NA

Prerequisite: Knowledge of basic HTML is required.

Rationale: In the era of digitization, the demand of Internet based applications is increasing day by day. To put students in the orbit of this Internet driven world and to make them comfortable in developing various web based applications, this course is focusing on front-end and Back-end design.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P	C	Theory Marks		Practical Marks		
				ESE(E)	PA(M)	ESE(V)	PA(I)	
3	0	2	4	70	30	30	20	150

Syllabus:

Sr. No.	Content	Hours	% Weightage
1	**Introduction:** Basics of WWW, HTTP protocol methods and headers, HTTP Request and Response, Architecture of web browser, Web server installation and configuration, Web security, CORS, Understanding SEO	03	5%
2	**HTML & CSS:** HTML page structure, formatting tags in HTML, tables, links, images, meta tags, frames, html form tags, media, APIs, HTML5 tags in relation to validations and SEO. **CSS:** Need for CSS, Basic syntax and structure, Backgrounds, Colors and properties, Manipulating texts, Fonts, borders and boxes, Margins, Padding Lists, CSS2, CSS3, Animations, Tool-Tips, Style images, Variables, Flex Box, Media Queries, Wildcard Selectors (*, ^ and $) in CSS, Working with Gradients, Pseudo Class, Pseudo elements, basic of frameworks like Bootstrap, Responsive web design and Media Query, CSS variables	08	25%
3	**Java Script:** Javascript Syntax, Types of Javascript, variables, arrays, functions, conditions, loops, Pop up boxes, Javascript objects and DOM, Javascript inbuilt functions, Javascript validations, Regular expressions, Event handling with Javascript, Callbacks in Javascript, Function as arguments in Javascript, Object concepts in Javascript, JSON	10	25%

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4	**PHP Basics** Introduction to Server side programming , PHP **variables**, decision and looping with examples, PHP and HTML, Arrays, Functions, Browser control and detection, String, Form processing, File uploads, Dates and timezone, Working with Regular Expressions, Exception Handling, Working with JSON data, Object Oriented Programming with PHP	07	15%
5	**Session and State Management using PHP** Need of session management, Various techniques for state and session management like: Hidden Fields, Query String, Cookie and Session	03	5%
6	**Database Connectivity using PHP:** Basic commands for database connection and query execution with CURD examples, Object oriented database access using PHP	05	15%
7	**Advanced Concepts:** Asynchronous Web requests using AJAX, Creating REST API using PHP **JQuery:** Working with jQuery, Using plugins in jQuery and Creating Image slider, Generating charts from data using 3rd Party Libs	06	10%

Suggested Specification table with Marks (Theory):

Distribution of Theory Marks					
R Level	**U Level**	**A Level**	**N Level**	**E Level**	**C Level**
7	14	21	7	7	14

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Course outcomes: Students will be able to

Sr. No.	CO statement	Marks % Weightage
1	**Understand** the concepts of WWW, HTTP protocol and client-server architecture.	5%
2	**Learn** and **apply** various HTML tags to **build** the user friendly web pages.	10%

3	**Explore** the new features of CSS to **define** and **apply** CSS rules in the web pages for rich User Interface.	15%
4	**Create** interactive web pages to improve the user experience using client side scripting with Javascript.	25%
5	**Design** and **develop** fully functional dynamic web applications using the concepts of PHP, MySQL,	35%
6	**Learn** and **apply** advanced asynchronous web communication mechanisms like REST API, AJAX and JQuery for building highly interactive webpages.	10%

Reference Books:
1. HTML 5 Black Book 2Ed, by Kogent Learning Solutions Inc.
2. Learning PHP, MySQL, JavaScript, CSS & HTML5, 3rd Edition
3. A Step-by-Step Guide to Creating Dynamic Websites By Robin Nixon Publisher: O'Reilly Media
3. JavaScript for impatient programmers by Dr. Axel Rauschmayer
4. PHP: The Complete Reference By Steven Holzner, McGrawhill

List of Experiments:

Practical list should be prepared based on the content of the subject with following guidelines in mind.
      1. Entire syllabus should be covered.
      2. Practical list should be designed with real life examples.
      3. List should be prepared to cover individual concepts and integration of different   concepts on real life problems.

List of e-Learning Resources:

Web Security and SEO:
https://www.tutorialspoint.com/seo/index.htm
https://github.com/vasanthk/web-security-basics

HTML:
https://developer.mozilla.org/en-US/docs/Web/HTML
https://www.w3schools.com/html/
https://www.tutorialspoint.com/html/index.htm

CSS:
https://developer.mozilla.org/en-US/docs/Web/CSS
https://www.manning.com/books/css-in-depth
https://www.w3schools.com/css/
https://www.tutorialspoint.com/css/index.htm

Java Script:
https://javascript.info/
https://github.com/getify/You-Dont-Know-JS
https://www.w3schools.com/js/
https://www.tutorialspoint.com/javascript/index.htm

PHP:
https://www.w3schools.com/php/
https://www.tutorialspoint.com/php/index.htm