



# GUJARAT TECHNOLOGICAL UNIVERSITY

**Bachelor of Engineering**

**Subject Code: 3160713**

WEB Programming

6<sup>th</sup> SEMESTER

**Type of course:** Professional Elective

**Prerequisite:** Programming, TCP/IP protocols and client-server development

**Rationale:** Today's world is driven by Internet based applications. The rationale behind this course is to impart the knowledge of web programming among students of computer engineering. This course covers web programming for both client-side and server-side to develop complete web based applications for various requirements

### Teaching and Examination Scheme:

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

### Content:

Sr. No.	Content	Total Hrs	% Weightage
1	<b>Introduction to WEB</b> Basics of WWW, HTTP protocol, Client Server architecture, Introduction to web server installation and configuration	04	7%
	<b>Web Design</b> Concepts of effective web design, Web design issues including Browser, Bandwidth and Cache, Display resolution, Look and Feel of the Website, Page Layout and linking, User centric design, Sitemap, Planning and publishing website, Designing effective navigation	04	8%
2	<b>Basics of HTML and CSS</b> Structure of HTML page, HTML tags for data formatting, tables, links, images, meta tags, frames, html form tags, media, APIs, HTML5 tags and validation. Need for CSS, Syntax and structure, CSS rules for Backgrounds, Colors and properties, Manipulating texts, Fonts, borders and boxes, Margins, Padding Lists, CSS Positioning. Animations, Tool-Tips, Style images, Variables, Media Queries, Wildcard Selectors (*, ^ and \$) in CSS, Working with Gradients, Pseudo Class, Pseudo elements, basic of frameworks like Bootstrap	08	15%
3	<b>Client Side Scripting using JavaScript</b> Syntax of JavaScript, Execution of JavaScript, Internal, Embedded and External Javascript, JavaScript : variables, arrays, functions, conditions, loops, Pop up boxes, JavaScript objects and DOM, JavaScript inbuilt functions, JavaScript validations and Regular expressions, Event handling with JavaScript, Callbacks in Javascript, Function as arguments in JavaScript, Introduction to JSON	10	20%



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4	<b>Server Side Programming with PHP</b> Difference between Client side and Server side scripting, Structure of PHP page, PHP Syntax: variables, decision and looping with examples, PHP and HTML, Arrays and Functions, String, Form processing, File uploads, Dates and time zone, Working with Regular Expressions, Exception Handling, Basic concepts of Session and State, State management using query string, hidden form controls, Cookies, Session variables	10	25%
6	<b>Database programming with PHP and MySQL</b> Basic MySQL commands, PHP functions for database connectivity, Implementation of CRUD operations using PHP, Prepared Statement and stored procedure execution in PHP	04	10%
7	<b>Advanced Web Programming concepts</b> Asynchronous Web Programming, Difference between synchronous and asynchronous web programming, AJAX, and JQuery, Web service and API development using PHP	08	15%

## 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)**

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

## Reference Books:

1. Web Technology, Moseley and Savaliya, Wiley India
2. HTML 5 Black Book 2Ed, Kogent Learning Solutions Inc, dreamtech
3. Web Design, Joel Sklar, Cengage Learning
4. Learning PHP, MySQL, JavaScript, CSS & HTML5, 3rd Edition, Robin Nixon, O'Reilly
5. A Step-by-Step Guide to Creating Dynamic Websites By Robin Nixon Publisher: O'Reilly Media
6. Internet and World Wide Web How to program, P.J. Deitel & H.M. Deitel, Pearson
7. JavaScript for impatient programmers, Dr. Axel Rauschmayer
8. PHP: The Complete Reference By Steven Holzner, McGrawhill

## Course Outcome

Sr. No.	CO statement	Marks % weightage
CO-1	Use the various HTML tags with appropriate styles to display the various types of contents effectively	20



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CO-2	Develop the dynamic web pages using HTML, CSS and JavaScript applying web design principles to make pages effective.	30
CO-3	Develop the server side PHP scripts using various features for creating customized web services.	25
CO-4	Write the server side scripts for designing web based services with database connectivity.	10
CO-5	Develop a web application using advanced web programming features including AJAX and JQuery using concepts of Web API.	15

## 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:

### 1. HTML:

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

### 2. CSS:

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

### 3. Java Script:

- a. <https://javascript.info/>
- b. <https://github.com/getify/You-Dont-Know-JS>
- c. <https://www.w3schools.com/js/>
- d. <https://www.tutorialspoint.com/javascript/index.htm>

### 4. PHP:

- a. <https://www.w3schools.com/php/>
- b. <https://www.tutorialspoint.com/php/index.htm>