



GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering
Subject Code: 3161012
Semester – VI
Subject Name: Web Technology

Type of course: Elective Course

Prerequisite: Basic knowledge of Programming, Internet

Rationale: There is an ever-increasing demand for web developers: Businesses are always on a lookout for good web developers and designers and the demand is only going to grow in the future. This course will enable students to understand the basics of web development. It also covers latest Web development technologies like HTML5, CSS3 which will enable students to develop rich user interface.

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)	
2	0	2	3	70	30	30	20	150

Content:

Sr. No.	Content	Total Hrs	% Weightage
1	Introduction to Web: What is Web, Protocols and programs, Secure connections, application and development tools, the web browser, What is server, Types of Web Servers, Setting up UNIX and Linux web servers, Logging users, dynamic IP. Web Design: Web site design principles, planning the site and navigation.	04	10
2	Introduction to HTML: HTML Basics, Elements, Attributes, Comments, Formatting, Links, Images, Tables, Lists, Block, Frames, HTML Meta Tags, HTML Forms, Form Elements, Various Input Elements. HTML 5: Introduction to HTML5, New Elements, HTML5 Semantics, Storage API, Location API, Migration to HTML5.	06	25
3	JavaScript: Introduction to Client-Side Scripting, Purpose of JavaScript, Basic Syntax, Variables, Operators, Loops, Functions, Arrays, Array Methods, Strings, String Methods, Regular Expression, HTML Form Validation, Debugging and Best Practices.	06	20



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4	Cascading Style Sheets: Introduction, Basic Syntax, Colors, backgrounds, Border, Margin, Padding, Height, Width, BOX Model, Other basic style elements. Layouts, Positions, Forms, Pseudo class, and elements, 2D and 3D transitions, Animations, CSS grids, Responsiveness. CSS 3.0: Rounded Corners, Border Images, Multi background, Multi columns, Shadow, Gradients, Web Fonts, Media Types.	06	25
5	Server-Side Scripting with PHP: Introduction to PHP, Basic Syntax, Variables, Operators, Loops, Functions, Strings, Constants, Arrays, Superglobals, PHP Form Handling, Validations, File Uploads, Cookies, Sessions, Error Handling. Connecting to Database, CRUD operations with Database, Prepared Statements and Bound Parameters, Limiting Data, Get Last ID, Example application.	06	20

Suggested Specification table with Marks (Theory): (For BE only)

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
15	15	15	10	10	05

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:

- Kogent Learning Solutions Inc., Web Technologies Black Book, Dreamtech Press, 2009.
- P.J.Deitel, H.M.Deitel, Internet and World Wide Web: How to program, Third Edition, Pearson publication.
- U. K. Roy, Web Technologies, First Edition, Oxford Higher Education

Course Outcomes:

Sr. No.	CO statement	Marks % weightage
CO-1	Implement interactive web page(s) using HTML, CSS and JavaScript	15%



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CO-2	Design a responsive web site using HTML5 and CSS3	15%
CO-3	Demonstrate use of web technology	10%
CO-4	Build Dynamic website using server-side PHP Programming	30%
CO-5	Design web page to control devices for IoT application	30%

List of Experiments:

1. Design web pages for your college containing a description of the courses, departments, faculties, library etc, use href, list tags.
2. Create your class timetable using table tag.
3. Create user Student feedback form (use textbox, text area, checkbox, radio button, select box etc.)
4. Create a web page using frame. Divide the page into two parts with Navigation links on left hand side of page (width=20%) and content page on right hand side of page (width = 80%). On clicking the navigation Links corresponding content must be shown on the right-hand side.
5. Write html code to develop a webpage having two frames that divide the webpage into two equal rows and then divide the row into equal columns fill each frame with a different background color.
6. Design a web page of your hometown with an attractive background color, text color, an Image, font etc. (use internal CSS).
7. Use External, Internal, and Inline CSS to format college web page that you created.
8. Develop simple calculator for addition, subtraction, multiplication and division operation using JavaScript
9. Create HTML Page that contains form with fields Name, Email, Mobile No, Gender , Favorite Color and a button now write a JavaScript code to combine and display the information in textbox when the button is clicked.
10. Use regular expression for validation in Feedback Form.
11. Write a php program to display today's date in dd-mm-yyyy format.
12. Write a php program to check if number is prime or not.
13. Create HTML page that contain textbox, submit / reset button. Write php program to display this information and also store into text file.
14. Write a php script to read data from txt file and display it in html table (the file contains info in format Name: Password: Email)
15. Design web page to control devices for IoT applications
16. Design webpage to get sensor data from IoT Embedded device and display it on screen

Open Ended Problems:

1. Develop an attractive Web site for an event to be organized in your institute.
2. Develop a Web based application to manage the Visiting Cards which allows user to add new



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cards, delete the cards, update the cards etc.

3. Develop a web-based application for Internet of Things

Major Equipment:

- Computer system with Web Server and Database Server.
- Embedded IoT device

List of Open Source Software/learning website:

- <https://www.w3schools.com/html/>
- <https://www.tutorialspoint.com/css>
- <https://www.javatpoint.com/javascript-tutorial>
- NPTEL Video Lectures of Internet Technology by Indranil Sengupta, IIT Kharagpur [Available at: <http://nptel.ac.in/courses/106105084/>]