Sarvajanik College of Engineering & Technology

<u>Department of Information Technology</u>

<u>SUBJECT FILE</u>

Subject Coordinator: Prof. Tushar Gohil

Name of Subject: Web Technologies

Subject Code: BTCO13502

Year: BE-III IT Div I

Semester: V

Academic Year: 2024-25

Term Date: 01/07/2024 to 26/10/2024

<u>*Address*</u>
Dr. R. K. Desai Marg, Athwalines, Surat
www.scet.ac.in

Index

Teaching Scheme

❖ **Prerequisite**:

Programming for Problem Solving, Computer Networks, Database Management Systems

❖ **Rationale:**

o The demand for Internet based applications is increasing day by day. To make students comfortable in developing various web-based applications is important.

o The subject covers the wide range of web technologies both client side and server side to provide the exposure to the students to develop Rich Internet Applications using them.

❖ **Teaching and Examination Scheme:**

Teaching Scheme				Theory Marks			Practical Marks		Total
L	T	P	C	TEE	CA1	CA2	TEP	CA3	
2	0	2	3	60	25	15	30	20	150

CA1: Continuous Assessment (assignments/projects/open book tests/closed book tests) CA2: Sincerity in attending classes/class tests/ timely submissions of assignments/self-learning attitude/solving advanced problems TEE: Term End Examination TEP: Term End Practical Exam (Performance and viva on practical skills learned in course) CA3: Regular submission of Lab work/Quality of work submitted/Active participation in lab sessions/viva on practical skills learned in course

Syllabus

Sr. No.	Contents	Total Hrs.	% Weight age
1.	**Introduction to WEB:** HTTP protocol, Client Server architecture, Concepts of effective web design, Web design issues, Designing effective navigation.	02	07
2.	**HTML**: Structure of HTML page, HTML tags for data formatting, tables, links, images, meta tags, frames, html form tags, media, APIs, HTML5 tags and validation	05	17
3.	**CSS**: Need for CSS, Syntax and structure, CSS rules for Backgrounds, Colors and properties, manipulating texts, Fonts, borders and boxes, Margins, Padding Lists, CSS Positioning. basics of animations, Style images, Variables, Media Queries, Wildcard Selectors (*, ^ and $) in CSS, Working with Gradients, Introduction to Bootstrap	05	18
4.	**JavaScript**: Client-Side Scripting using JavaScript: 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	06	20
5.	**Server-Side Programming with PHP:** 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	05	16
6.	**Database programming with PHP:** PHP functions for database connectivity, Implementation of CRUD operations using PHP, Prepared Statement, and stored procedure execution in PHP.	04	15
7.	**Advanced Concepts:** Introduction to AJAX, JQuery,Current trends in web application with use cases.	03	07

- Web link ((As per syllabus)
- Video Link (As per syllabus)
- Software (As per syllabus)

- Course Outcomes

Course Outcome	Statement	Weightage (%)
CO1	Summarize the concepts of WWW including browser and HTTP protocol.	05
CO2	Interpret various HTML tags and CSS features to develop modern web pages.	30
CO3	Use JavaScript to develop dynamic web pages.	30
CO4	Develop web pages using PHP, a server-side scripting language with database connectivity.	30
CO5	Understand advanced web programming features using AJAX and JQuery	05

Lecture Plan

Faculties:	Prof. Tushar Gohil (2 Hrs.) (TUE, THU)

No.	Topics	Plan Date	Actual Date	Mode (B/M) *
Chapter 1: Introduction to WEB (2 Hrs)				
1.	HTTP protocol, Client Server architecture	02/07/24	02/07/24	B + M
2.	Concepts of effective web design, Web design issues, Designing effective navigation.	03/07/24	03/07/24	B + M
Chapter 2: HTML (5 hrs)				
3.	Structure of HTML page, HTML tags for data formatting	09/07/24	09/07/24	B + M
4.	Tables, links, images	10/07/24	10/07/24	B + M
5.	Meta tags, frames, html form tags	16/07/24	16/07/24	B + M
6.	Media, APIs	17/07/24	16/07/24	B + M
7.	HTML5 tags and validation.	23/07/24	23/07/24	B + M
Chapter 3: CSS (5 hrs)				
8.	Need for CSS, Syntax, and structure	24/07/24	24/07/24	B + M
9.	CSS rules for Backgrounds, Color, and properties	30/07/24	30/07/24	B + M
10.	Manipulating texts, Fonts, borders, and boxes	31/07/24	31/07/24	B + M
11.	Margins, Padding Lists, CSS Positioning. basics of animations, Style images, Variables, Media Queries, Wildcard Selectors (*, ^ and $) in CSS,	06/08/24	06/08/24	B + M
12.	Working with Gradients, Introduction to Bootstrap	07/08/24	07/08/24	B + M
Chapter 4: JavaScript (6 Hrs)				
13.	Client-Side Scripting using JavaScript: Syntax of JavaScript, Execution of JavaScript, Internal, Embedded and External JavaScript	13/08/24	13/08/24	B + M
14.	JavaScript: variables, arrays, functions, conditions, loops, Pop up boxes,	14/08/24	14/08/24	B + M
15.	JavaScript objects and DOM, JavaScript inbuilt functions	20/08/24	20/08/24	B + M
16.	JavaScript validations and Regular expressions,	21/08/24	21/08/24	B + M
17.	Event handling with JavaScript, Callbacks in JavaScript	27/08/24	27/08/24	B + M
18.	Function as arguments in JavaScript, Introduction to JSON	28/08/24	28/08/24	B + M

	Chapter 5: Server-Side Programming with PHP (5 Hrs)			
19.	Difference between Client side and Server-side scripting, Structure of PHP page	03/09/24	03/09/24	B + M
20.	PHP Syntax: variables, decision and looping with examples, PHP and HTML	04/09/24	04/09/24	B + M
21.	Arrays and Functions, String, Form processing	10/09/24	24/09/24	B + M
22.	File uploads, Dates and time zone, Working with Regular Expressions, Exception Handling	11/09/24	24/09/24	B + M
23.	Basic concepts of Session and State, State management using query string, hidden form controls, Cookies, Session variables	17/09/24	25/09/24	B + M
	Chapter 6: Database programming with PHP (4 Hrs)			
24.	PHP functions for database connectivity	18/09/24	25/09/24	B + M
25.	Implementation of CRUD operations using PHP	24/09/24	01/10/24	B + M
26.	Implementation of CRUD operations using PHP	25/09/24	01/10/24	B + M
27.	Prepared Statement and stored procedure execution in PHP.	01/10/24	08/10/24	B + M
	Chapter 7 Advanced Concepts (3 hrs)			
28.	Introduction to AJAX	08/10/24	08/10/24	B + M
29.	JQuery	09/10/24	09/10/24	B + M
30.	Current trends in web application with use cases.	15/10/24	09/10/24	B + M

* B - Black Board, M - Multi-media

Lab Plan

Faculty:	Prof. Tushar Gohil (4 Hrs)	Batch:	A, B
	Prof. Ashish Kharvar (2 Hrs.)		B
	Prof. Karuna Patel (2 Hrs.)		A

Practical List

Sr No	Problem Statement	Batch – A		Batch-B	
		Planned Date	Actual Date	Planned Date	Actual Date
1	Practical based on HTML: a) Demonstrate the use of different tags in HTML. b) Implement Web page for demonstration of BOOKMARK or Anchor Tag. c) Implement IMAGE MAP with example. d) Use table tags to prepare the class timetable. e) Create our own co-intra page layout with three frames. Top frame, left frame, and right frame. On the left side frame put links for different subjects of your class in this semester. by clicking on these links syllabus of relevant subjects will open on the right-side frames. use FRAMESET and FRAME tag. f) Create a webpage with the use of input form tags. g) Implement a nested list in HTML. h) Demonstrate the use of HTML media. (audio, video, youtube, plug-ins) i) Implement drag and drop functionality and geo location by HTML API.	02/07/24, 09/07/24, 16/07/24	02/07/24, 09/07/24	01/07/24, 08/07/24, 15/07/24	01/07/24, 08/07/24
2	Practical based on CSS: a) Use different selectors in CSS (Class, id, name) to apply Color, text-align, background of the html file. b) Use different types of CSS with the above example (Internal, External & Inline). c) Use CSS animation properties by taking the appropriate example. d) Demonstrate the use of local and global variables in CSS. e) Use pseudo class and pseudo element concept in CSS to design your web page. f) Implement the problem statement by using media query: "Instead of changing. styles when the width gets smaller than 600px, for devices larger than 600px (but smaller than 750px) and we should change the design when the width gets larger than 750px".	23/07/24, 30/07/24, 06/18/24	16/07/24, 23/07/24	22/07/24, 29/07/24, 05/08/24	15/07/24, 22/07/24

	g) Design Login and Registration Page using CSS. h) Design Our Department Intranet Home page using CSS. (In CSS, also use CSS i) Gradients and Responsive Images with CSS) j) Design your own website/portfolio/blog using bootstrap					
3	Practical based on Javascript: a) Write a javascript program to display "hello world" using internal javascript and external javascript. b) Write a javascript program to demo local and global variables. c) Write a javascript program to demo alert box, conditional box, and prompt box. d) Write a javascript program to take user input as integer from user and find out if that number is prime or not. e) Write a javascript program to calculate a person's age. Take the user's birthdate from the user and the current date from the system. f) Write a javascript function to find the factorial of a given number and return the answer. g) Create javascript that scrolls a message in the Status window of the browser. h) Create different variables of Array and string objects. And use all the functions related to that. i) Write a javascript program to change the background color of a web page repeatedly. j) Create a webpage containing one button. clicking on this button changes the size of the window & position. k) Put three buttons "OPEN NEW WINDOW"," CLOSE CHILD WINDOW"," CLOSE MAIN WINDOW" in the main HTML page, on click of the first button, execute some JavaScript code that will open one child window. Clicking on the second button child window will close and the third button main html page will close. l) Write a javascript to get details from visitor's browser. m) Write a javascript program to rotate images. n) Write a javascript program to zoom out the image. Use a mouse over event for the same. o) Create a page that includes a select object to change the background color of the current page. The property that needs to be set is bgColor, Similar things for foreground color. p) Create a webpage containing two textboxes as userid and password and one submit button. Check for validation for userid as mobile number and password should contain a minimum 8 character,with special symbol and one uppercase	13/08/24, 20/08/24, 27/08/24	06/08/24, 13/08/24	12/08/24, 19/08/24, 26/08/24	29/07/24, 05/08/24

	letter				
4	Practical based PHP: a) Write PHP Script to print Fibonacci series. b) Write PHP Script to find the maximum number out of three given numbers. c) Write a PHP program to compute the sum of the prime numbers less than 100. d) Find the Transpose of a matrix, Multiplication of two matrices and Addition of two matrices. e) Write PHP script Using user defined function. f) Create form using text box, check box, radio button, select, submit button. And display user inserted value in new PHP page g) Write PHP Script to display content of file and display total number of lines, words, and characters. h) Write a Program to upload an image with extension gif or jpeg having size less than 200kB. i) A web application that takes a name as input and on submit it shows a hello page where name is taken from the request. It shows the start time at the right top corner of the page and provides a logout button. On clicking this button, it should show a logout page with Thank You message with the duration of usage (hint: Use session to store name and time). j) Write PHP script to demonstrate variables with cookies. k) Write a program to keep track of how many times a visitor has loaded the page.	03/09/24, 10/09/24, 17/09/24	20/08/24, 27/08/24, 03/09/24	02/09/24, 09/09/24, 16/09/24	12/08/24, 02/09/24
5	Understand the PHP interface, Study PHPMyAdmin and Perform following: a) Write a PHP script to create a database StudentDB. b) Write a PHP script to list all the databases available in mysql. c) Write a PHP script to list all the tables available in a particular database. d) Write a PHP script to create a table student (Enroll_no,name,age,marks) in the database StudentDB. e) Write a PHP script to insert a row into the table student. The values to be inserted are taken from a HTML page. f) Write a PHP script to list all the records in the student table in tabular format. g) Write a PHP script to delete all rows from the student table whose Enroll_no numbers are between 1 and 3. h) Write a PHP script to display all rows from the student table whose marks are >=35. i) Write a PHP script to update rows from the table	24/09/24, 01/10/24	24/09/24	23/09/24, 30/09/24	23/09/24

	student whose age is 30. j) Write a PHP script to drop the table student and drop the database StudentDB.				
6	Write a web application code using PHP, HTML and MySql for Employees that stores employee's id, name, department, designation, etc. in the database. Create a proper GUI including buttons that run separate .php file for each database operation like insert, update, delete, select etc.	08/10/24	01/10/24	07/10/24	30/09/24

Rubrics

Category	Level of Performance		
	10-8 marks	7-4 marks	3-1 marks
Implementation (10)	Able to implement in time limit with correct result	Able to implement in time limit, no proper result	Able to implement with error and no result
	5-4 marks	3-2 marks	1 marks
Viva (5)	Able to interpret practical theoretically as well as practically	Partially able to interpret theoretically as well as practically	Unable to interpret theoretical as well practical concepts
Documentation Level			
	5-4 marks	3-2 marks	1 marks
File Submission (5)	Completed on time	Incomplete but on time	Incomplete and delay

Reference Books

1. HTML 5 Black Book 2ed, DT Editorial Services
2. PHP: The Complete Reference, Steven Holzner
3. Developing Web Application, Ralph Moseley, M.T. Savaliya
4. Learning PHP, MySQL &JavaScript with jQuery, CSS and HTML5, 4th Edition, Robin Nixon
5. Fundamentals of Web Development, 2nd Edition, Randy Connolly, Ricardo Hoar

Mid-semester Question Paper

<div align="center">

Subject: Web Technologies (BTCO13502)
10-September-2024, Marks: 25, Time: 12:00 Noon to 01:15 PM

</div>

Q:1	1. Differentiate between internal, embedded, and external JavaScript. When should each be used? Provide examples for each method.	**4**
Q:2	**Attempt Any Three.**	**9**
	2. Discuss the challenges and solutions in designing web pages for multiple devices and screen sizes.	
	3. Describe the basic syntax and structure of a CSS rule. Provide an example to illustrate your answer.	
	4. Explain the CSS box model. What is the difference between margin and padding?	
	5. Explain the Document Object Model (DOM). How can JavaScript be used to manipulate the DOM? Provide examples of common methods to access and modify HTML elements.	
Q:3	**Attempt Any Three.**	**12**
	1. Create a basic HTML page with a proper structure, including a title, headings, paragraphs, and a footer.	
	2. Create an HTML page with two frames: one frame displaying a navigation menu, and the other displaying content linked from the menu.	
	3. Create a CSS style that sets a background image for a webpage, makes it cover the entire screen, and centers it without repeating.	
	4. Develop a JavaScript program to create an array of fruits, add a new fruit to the array, and display the updated list using console.log ().	

Remedial Question Paper

-N.A.-

Continuous Assessment Record

Printed Mark sheet (in the given format)

Result Analysis

Number of Students	Mid-I (10/09/24)
Total	78
Not allowed	00
Absent	00
Fail	00
Pass	78
Pass (%)	100
AA	47
AB	17
BB	08
BC	03
CC	01
CD	02
FF	00

Note*: AA (>=85%), AB (>=75% < 85%),BB (>=65% < 75%), BC (>=55% < 65%), CC (>=45% < 55), CD (>=40% < 45%), FF (<45%)*

Counselling Report

Date	Enrollment No.	Name Of Students	Details

Attendance Record

Musters

Answer Books

Students Practical Files/Tutorials/Assignments/Other Records

Note:

1) Max 5 best records for student Files/Tutorial/Assignments
2) Other records – Term end practical exam supplementary / Quiz Hard copy or any other records (all the records need to be submitted)