SARVAJANIK UNIVERSITY
Sarvajanik College of Engineering and Technology
Bachelor of Technology

B. Tech. Semester VI

Subject Name: **Web Technology** **Subject Code: BTEC14603**
Type of course: PEC
Prerequisite: Basics of Programming
Rationale: Course gives the opportunity to learn web technology tools and apply them to solve practical and real life situation problems related to information management using data and databases. Course also gives the opportunity to create websites and web programming modules so it enhances the skill of designing for solving complex problems.

Teaching and Examination Scheme:

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

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

Content:

Sr. no.	Topics	Teaching Hrs.	Module 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 windows and Linux web servers, Logging users, concept of dynamic IP. **Web Design:** Web site design principles, planning the site and navigation.	2	10
2.	**HTML:** Basics, Learning through usage of Elements, Attributes, Comments, Formatting, Links, Images, Tables, Lists, Block, Frames, HTML Meta Tags, HTML Forms, Form Elements, Various Input Elements. HTML5, New Elements, HTML5 Semantics, Storage API, Location API, interfacing using API, latest development in HTML scripting and trends.	6	20
3.	**Cascading Style Sheets:** learning skills to develop meaningful application interfaces using 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, Specific **CSS**	6	20

	3.0 features Rounded Corners, Border Images, Multi background, Multi columns, Shadow, Gradients, Web Fonts, and Media Types. latest development in CSS and trends		
4.	**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 inbuilt functions, JavaScript Form Validation, And Regular expressions, Event handling with JavaScript, Callbacks in JavaScript, Function as arguments in JavaScript, Introduction to JSON, Debugging and Best Practices	6	25
5.	**Server-Side Scripting:** Introduction to Back-end and server side scripting. **a) 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 and introduction to structured database and queries, CRUD operations with Database, Prepared Statements and Bound Parameters, Limiting Data, get last ID. **b) with Node.Js:** Introduction to Node.js and database integration with node.js, application suing node.js	10	25

Suggested Specification table with Marks (Theory/Practical):

% Distribution of Marks					
R Level	**U Level**	**A Level**	**N Level**	**E Level**	**C Level**
8	6	20	8	20	38

Legends: R: Remembrance, **U:** Understanding; **A:** Application, **N:** Analyze, **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 Text Books:

Sr. No.	Title of book /article	Author(s)	Publisher and details like ISBN	Year of publication	Publication Edition
1.	HTML 5 Black Book	Dream tech Editorial	Dream tech 9789351199076	2016	2nd
2.	Web Design Principles	Joel Sklar	Cengage 9788131517376	2012	5th
3.	Learning PHP, MySQL & JavaScript: A Step-by-	Robin Nixon	Shroff/O'Reilly 9789391043810	2021	6th

	Step Guide to Creating Dynamic Websites				
4.	Internet and World Wide Web How to program	P.J. Deitel & H.M. Deitel	Pearson 9788131725221	2009	4th
5.	JavaScript for impatient programmers,	Dr. Axel Rauschmayer	O'Reilly 9781091210097	2019	Latest
6.	PHP: The Complete Reference	By Steven Holzner	McGraw Hill 9780070223622	2017	Latest
7.	The Node.js Handbook	Flavio Copes	flaviocopes.com	2009	Latest

Course Outcome:

Sr. No.	CO Statement After learning this subject students will be able to,	Marks % weightage
CO-1	Identify available web technologies, along with its features, for web design and web pages.	8
CO-2	Design interactive and responsive web page(s) using HTML5, CSS3 and JavaScript.	66
CO-3	Design Dynamic website using server-side PHP-Node JS Programming.	16
CO-4	Construct website demonstrating use of MYSQL database connectivity to web application using PHP or Node JS.	10

Mapping with POs:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO-1	1	-	1	-	2	-	-	-	-	1	2	1	-	-	-
CO-2	-	1	3	-	2	-	-	2	1	2	2	2	-	3	2
CO-3	-	-	3	2	2	-	--	2	1	2	2	2	-	3	2
CO-4	2	2	3	2	2	2	2	2	1	2	2	2	-	3	2

List of practical:

Note:

- Experiment list is designed with real life examples, and matching to industry needs and practices.
- List is prepared to cover individual concepts and integration of different concepts on real life problems.

1. a. Design web pages for your college containing a description of the courses, departments, faculties, library etc, use href, list tags.
   b. Create your class timetable using table tag.
2. Create user Student feedback form (use textbox, text area, checkbox, radio button, select

box etc.)

3. a. 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.
   b. 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.
4. a. Design a web page of your hometown with an attractive background color, text color, an Image, font etc. (use internal CSS).
   4b. Use External, Internal, and Inline CSS to format college web page that you created.
5. a. Develop simple calculator for addition, subtraction, multiplication and division operation using JavaScript
   b. 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.
   c. Use regular expression for validation in Feedback Form.
6. a. Write a php program to display today's date in dd-mm-yyyy format.
   b. Write a php program to check if number is prime or not
7. Create HTML page that contain textbox, submit / reset button. Write php program to display this information and also store into text file.
8. 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)
9. Create database in MYSQL, taking suitable example, using phpMyadmin. Create webpage to enter data in to database.
10. Create web application to read data from MYSQL database and show it on web page taking suitable example.
11. Use API in your created web page. Create your own API Web service and provide services from it. Access the API in your webpage using PHP
12. Small database application using node JS tool.

List of Open Source/learning websites:

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
- e. https://www.lcg.ufrj.br/nodejs/books/node-handbook.pdf

4. PHP:

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

List of Open Source software:

- https://www.php.net/
- https://www.phpmyadmin.net/
- https://www.mysql.com/
- https://html.spec.whatwg.org/multipage/
- https://www.javascript.com/
- https://getbootstrap.com/