Core VIII

Semester IV
Web Technologies

Course Objectives:

- To understand the essentials of Web Technologies.
- To understand frontend (HTML, CSS, JavaScript) and backend Technologies (PHP) for developing Web Sites.

Learning Outcomes:

Upon completion of this course, students will be able to:

1. Learn the basics of Internet protocols and HTML
2. Learn the use of CSS
3. Learn the use of Java Scripts
4. Learn the use of PHP and design a Website

Unit-I:

Introduction to the Internet, Internet Protocols, World Wide Web (WWW): Introduction, History, HTTP and HTTP methods, Web Browser, Web Server and their examples, Web page, working principles of WWW. Web Development: Introduction, Front-end and Backend Development Technologies. Concepts of Client-Server communication.
HTML: Introduction, characteristics, basic structure of an HTML document, understanding basic HTML tags and attributes, creating an HTML document. Working with tags for text-formatting, lists, hyperlink, images, tables, frames, multimedia. HTML forms and its basic elements.

Unit-II:

Cascading Style Sheets (CSS): Introduction, Benefits of using CSS, Understanding the Syntax, CSS Selectors, Using CSS: External, Internal Inline CSS. Comments in CSS. Basic CSS Properties: Color, Background, Text, Font, List, Table, Display.
CSS Box Model: Introduction, working with Margin, Border, and Padding. Pseudo-class & element, working with block elements, Scrolling text, Navigation Bar and Drop Downs.

Unit-III:

- JavaScripts: Introduction, Features, Benefits, Creating Simple JavaScript. Using JavaScript in HTML. Exploring Popup Boxes: alert, confirm, prompt box. Displaying outputs in JavaScript.
- Programming using JavaScript: Data types, Variables, Operators, Expressions

(Arithmetic, String, Logical), Comments. Control Statements: Conditional, Looping and Jump Statements. Functions (built-in & user defined) and their usage. Working with Array and Date Objects. Introduction to DOM, Event handling and Form validation in JavaScript.

Unit-IV:

PHP: Features, Print/echo statement, Data Types, Variables, Constants, Strings, Arrays, Operators. Control Structures: Conditional, Looping & Jump Statements. Brief overview of Arrays, Functions: String, Date-Time, Mathematical and User-defined functions.
Embedding PHP in HTML, Reading Form data of a Web Page. Introduction to PHP with Database: Connecting to Database, Creating Table, inserting records, modifying data and retrieving data and displaying in HTML.

Text Book:

Web Technologies (Black Book), DreamTech Press

Reference Books:

- ✓ *Web Enabled Commercial Application Development Using HTML, JavaScript, DHTML and PHP 4th Edition by Ivan Bayross.*
- ✓ *HTML, XHTML and CSS Bible, 5ed, Willey India-Steven M. Schafer.*

Core VIII- Lab: Web Technologies

1. Create a Web Page to display "Hello HTML".
   - Display the same using different headings: h1 to h6
   - Apply bold, italic formats
   - Change text color, background of the page

2. Create a Web Page to display the list of Fruits using both ordered and unordered list. Recreate the lists using images of the same items.
3. Use the web page created in Question Number 2. When the user clicks on the image of a Fruit, it should open a new page that contains an image of the Fruit along with its benefits (use multiple paragraphs, and make sure the image is aligned properly).
4. Create a web page that displays details of the Fruits in Tabular format. Use serial no., name, color, taste, price/kg.
5. Create a Web Page that displays a video file (record/create a video of your own).
   - Apply various controls such as paly, pause, volume.
   - Apply autoplay, muted and both.
   - Display a Youtube Video in your Web Page.

6. Design a Student registration form to collect various data about a Student which includes Name, Age, Gender (M, F, O), Mobile No., Email ID, Stream (Science/Arts/Commerce in drop-drown), Choice for participating in NCC, NSS, YRC (use check box), and two buttons for reset and submit respectively. Display the form at the center of the page with proper alignment of each item in the form.
7. Use the web page created in Question no. 4. Use CSS and apply various styling to the text, colors to each row of the table, styling to borders and background color of the table.
8. Create a Web page with a Horizontal Navigation bar containing four items such as Home, College, Students, Teachers. The first item should be active, by default. The background color of the item changes when the user moves the mouse over it.
9. Create a Web Page that asks the user to enter the number of Students, and then iteratively ask the details of each Student and display them in a list, using JavaScript.
10. Modify the above program (Q. 9) to display the details in a tabular format, dynamically using JavaScript.
11. Create a Web Page with two text fields and four buttons to perform arithmetic operations such as Addition, Subtraction, Multiplication and Division. The user has to enter numbers in the text fields and press any of the above buttons. The JavaScript progrm shoud perform corresponding operations and display the result in the same page. [NOTE: Use different functions for each operation]
12. Use JavaScript and validate the form data in the Student registration Page (created in Q. no. 6). When the user clicks the Submit button, the program has to validate that every field contains valid data. [NOTE: validate name, age, gender, email, mobile number]
13. Write a PHP program that asks the user to enter a number and finds the factorial of it.
14. Write a PHP program that creates a Table in a database with a number of columns as determined by the fields in the Student registration form created above.
15. Write a PHP program to store the data of the Student registration form in a Database.
16. Write a PHP program that asks the user to enter a Student name and display the Student details retrieved from the database in the same page.
17. Students are required to combine the Student Registration form, and PHP program (s) [which interact with Database] to see the dynamic updation of the Student registration data in the Database when a new Student is registered.