**Institute of Information Technology & Management, New Delhi**

**Lesson Plan of Web Technologies Lab**

## Semester: I Paper Code: 175—Web Technologies Lab Academic Session 2021-22

**Note**: All students are required to conduct the listed practical and include the solutions in the practical file. These are to be conducted along with the coverage of syllabus in the classroom. New Program to be done on a fresh page.

**Note: Students are required to get their practical files checked on weekly basis.**

**No of hours allotted to complete the syllabus:**- 60 (Minimum)

**Learning Objectives:-**

1. Apply the Semantic Structure of HTML, JavaScript, CSS, Bootstrap, and XML
2. Design forms and tables using HTML, CSS, and Bootstrap
3. Design Client-side programs using JavaScript
4. Design and develop static web page.

**Course Outcomes: -** After completion of this course, the learners will be able to:

1. Develop static web page through HTML, CSS, JavaScript, Bootstrap, and XML.
2. Implement different constructs and programming techniques provided by JavaScript.
3. Adapt HTML, CSS, JavaScript, Bootstrap and XML syntax and semantics to build web pages.
4. Develop Client-Side Scripts using JavaScript to display the contents dynamically.

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| **PLO** | **Attribute** | **Description** |
| PLO1 | Communication Skills | The student should be able to communicate the technical information both orally and inwriting professionally. |
| PLO2 | Use of Software Tools | Create, select, adapt and apply suitable tools and technologies to a wide range of computational activities. |
| PLO3 | Technical Skills | Acquire necessary knowledge of technical, scientific as well as basic managerial and financial procedures to analyze and solve real world problems within their work domain |
| PLO4 | Domain Awareness | Clarity on both conceptual and application oriented skills in commerce, Finance & Accounting and it Applications in Business context. |
| PLO5 | Technical Support | Must be able to provide technical support for various software applications. |
| PLO6 | Analysis and investigation of Complex Computing Problems | Ability to analyze research and investigate complex computing problems through design of experiments, analysis and interpretation of data and synthesis of the information to arrive at valid conclusions. |
| PLO7 | Design / Development of Solutions | Apply the knowledge gained in core courses to a broad range of advanced topics in computer science, to learn and develop sophisticated technical products independently. |
| PLO8 | Imbibe Cyber Ethics | Awareness on ethics, values, sustainability and creativity aspects of technical solutions. |

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| **Course Outcomes** | **Programme Learning Outcomes** | | | | | |
|  | **PLO2** | **PLO3** | **PLO4** | **PLO5** | **PLO6** | **PLO7** |
| **CO1** | HIGH | MODERATE | MODERATE | MODERATE | LOW | LOW |
| **CO2** | MODERATE | HIGH | LOW | MODERATE | LOW | LOW |
| **CO3** | MODERATE | MODERATE | HIGH | MODERATE | HIGH | HIGH |
| **CO4** | HIGH | HIGH | MODERATE | HIGH | LOW | MODERATE |

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| **S.NO** | **Lab Objective** | **Application Area/Functionality/ Concept on which practical is based** | **Problem Statement** | **No of hrs** | **Lab outcome** | **Date Of Delivery** |
|  | To understand the features of some well known web browsers | * Introduction To Web browser * Creating a web page | * Create a list of latest web browsers with their logo, versions, and features. * Create a simple web page that displays welcome message | 2 |  |  |
|  | To understand the features of some well known search engines | * Demonstration of using search engine * HTML Tags:   + Heading style   + Container & empty tags   + Alignment option | * Create a list of latest search engines with their features. * Write HTML code to demonstrate different heading styles * Write an HTML code to display the different paragraphs with different alignment. Use at least three Container tags and empty tags. | 2 |  |  |
|  | To understand basic HTML tags and their usage. | * HTML Tags   + Formatting tags   + Use of blockquote, pre, em tag, bgcolor.   + Link Tag | * Write an HTML code to print the quadratic equation as follows:   In mathematics, a **quadratic equation** is a polynomial equation of the second degree. The general form is  ax2+bx+c = 0  where *a* ≠ 0. (For if *a* = 0, the equation becomes a linear equation.   * Create a web page describing IITM. Use <blockquote> to display address, for sub headings <pre> tag and use <em> tag wherever you are using numbers. Use different background color & different color showing text. | 2 |  |  |
|  | To create different types of lists. | * HTML Tags:   + Images   + List     - * Unordered List       * Ordered List       * Definition List | * Develop an HTML document which displays your name as heading and displays the name of any four of your friends in a list. Each friend’s name should be a hyperlink. When you click a friend’s name, it must open another HTML document which tells about your friend. * Create a web page that has named link to move on the top of the page and to the bottom of the page. * Write HTML code to insert three images that are aligned left, center and right. Also change the background color as blue of the web page. Give a proper heading to the web page. * Write an HTML code to display the name of courses taught in the institute under the list headings Morning and Evening Courses respectively using different type of ordered and unordered list. * Write a code for the following list( **Definition List)**   Coffee  - black hot drink  Milk  - white cold drink | 4 |  |  |
|  | To understand creation of marquee and tables in HTML. | * HTML Tags: Marquee and Tables | * Create an unordered list nested inside ordered list and apply the following :  1. Insert an image of Main item on top right comer of web page. 2. Display heading as a marquee. 3. Use different font styles and colors for different ordered list items. 4. Insert horizontal line after each ordered item.  * Create a table containing S.No, Name, course and marks of 10 students. Use Caption Tag and attributes like cellpadding, cellspacing, height, width, bgcolor, align. | 2 |  |  |
|  | To create a website with various web pages and link them.. | * HTML Tags: Formatting tags, tables, image, marquee, hyperlink | * Make following five different web pages:  1. Create a web page containing information about formatting styles and headings. The following styles should be there: Bold, italics, Underline, Strike, Subscript, superscript and all six type of headings 2. Another web page should contain Font Styles and Image tag 3. The next page should contain Marquee: Move text, image and hyperlink 4. Finally, create a web page containing other tags: br, hr, pre, p. 5. Also, create a home page containing links to all the above pages.   Include following specifications:   * ln all these web pages only mention about use, attributes apply them. * insert a background image on home page * Also, the topics that each page contains should have links to other pages. Therefore, use hyperlinks for the topics that navigate to some other page for description * Insert a marquee showing HTML Tutorial as moving text. * Use different font style for different topics * On every page, make a hyperlink for going back to home page and internal link also. | 2 |  |  |
|  | To create nested tables and frames. | * **HTML Tags: Nested Tables and Frames** | * Create a Table to display the following table with items in the Décor using ordered lists and Hyperlinks. On the click of the Décor items, suitable pages with their images and information should be displayed.      * Create a two-column frameset with the left frame containing bulleted list of items with hyperlinks. While the right frame is further divided into two rows of frames. The top frame contains the header and the bottom frame displays the description of an animal which the user clicks on the left frame. | 2 |  |  |
|  | To understand images, image maps, and forms | * **HTML Tags: Image Maps and Forms** | * Display an image using the <img> tag. Show the use of its attributes like width, height, alt, border etc. * Create a web page containing images with left, right, and center alignment. * Make an image map showing the usage of shape, coords, href attributes in map definition. Link each hotspot to their respective details. All the web pages should be designed with proper background color, images, font styles and headings. * Create an application form for admission to undergraduate students. | 4 |  |  |
|  | To create web page containing different types of styles. | **CSS: Background and Font Styles** | * Create a webpage containing a background image and apply all the background styling attributes. * Create a web page showing the usage of font styling attributes | 2 |  |  |
|  | To create web page containing different types of styles. | **CSS: Text, List, positioning and Dimensions** | * Create a web page and apply all Text styling attributes use  Id and class selector. * Create a webpage and implement all list styling attributes. * Create a Webpage with three equal columns. * Write a CSS rule that make all text size as 18pt and color as red, background color blue. Give the heading style font size as 24pt, font family as sans-serif, color black and text align as Centre. | 4 |  |  |
|  | To understand class, id, and external stylesheets | **CSS: ID and Class, linking stylesheets, margins and padding** | * Write a CSS rule for EM, H1 and P elements. Create Class attributes that applies a style class and inheritance * Write an external linking style sheet to Create a website which show the different courses in your institute * Write a program to show the conflicting style * Create a site of Solar System and insert an image of planets and position the style as absolute and give a proper margins as top ,left, right and bottom | 6 |  |  |
|  | To create CSS to apply width and height and to understand Bootstrap | **CSS: width and height**  **Bootstrap: Images, Tables, Buttons, and Typography**. | * Write a CSS rule that set the three box dimension and align the text. The first box should be 20%, second division should be 80% and centre aligns. And in the third division give a proper height and width. * Create a webpage containing bootstrap table. * Create a webpage containing various types of images. * Create a webpage containing various types of buttons. * Create a webpage containing various, typography classes. | 6 |  |  |
|  | To understand Bootstrap Jumbotron and to illustrate the concept of JavaScript | * **Bootstrap: Jumbotron** * **Javascript: Built-in functions, dialog boxes,** Control Structures | * Create a webpage containing to display the heading using Jumbotron. * Write a program to show the usage of in built functions and dialog boxes. * Create a web page to show the usage of alert box and confirm box * Write a JavaScript to accept your name and display it. * Write a JavaScript code to accept 10 numbers and check how many are +ive, -ive and zero. * Write a Program in JavaScript to find the factorial of a number between 1 to 10 * Write a Program in sJavaScript to find reverse of a digit. | 6 |  |  |
|  | Using function and objects in JavaScript and performing form validation | 1. **JavaScript:** Objects and form validation | * Write a JavaScript code block, which greets a user with a message Welcome’. When a user leaves this page, the ‘Good-bye’ alert dialog box is displayed * Write a script that displays the various Math & String Functions. * Write a script that reads a date from an HTML form and creates a Date object in which to store that date. Then, use the various method of Date object to display the date in several formats. * Create a student registration form and show the form details. After clicking on submit button following validations must be performed:  1. Clear the previous value when field is selected. 2. Display warning message when field is left blank. | 4 |  |  |
|  | Using event handler and to make students understand the concept of XML language and how to use DTD in it. | * **JavaScript:** Event Handling * XML-DTD | * Create a web page to implement event handling using onclick, onmouseover and onmouseout events. * Create a web page to show the usage of all the date,  math and string object functions * Writea program to display the bookstore details in XML with CSS and internal DTD. * Write a program to format the Teacher details in XML with CSS using external DTD * Design the registration form for a web site and when the user clicks on submit button the login form should be appeared on the screen (use external javascript file). | 6 |  |  |
|  | To create a website using HTML, CSS, JavaScript and Bootstrap | * Introduction to Website Creation & Publishing Concepts | * Design a website and apply all the features of HTML, css, javascript and bootstrap to make the website attractive. * Write a JavaScript function that creates a table by accepting the size of the table from user. For instance, user should enter number of rows and columns from user, and display row-column number as content (e.g. Row-0 Column- 0) in each cell. * Create a web page containing zebra stripped table. Also, make use of pseudo classes. * Create a Questionnaire related to any topic of your choice by using Form Elements. | 4 |  |  |

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