Web Technologies I

Evaluation:

	Theory	Practical	Total
Sessional	30	20	50
Final	50	-	50
Total	80	20	100

Course Objectives:

1. To focus on the phenomenon known as World Wide Web (WWW) and Domain name hierarchy.
2. To impart the new concepts in Web Technologies.
3. To identify, evaluate and apply appropriate technologies for web development.
4. To develop understanding about the different technologies used in World Wide Web including the concept of HTML, CSS, Java script, XML and jQuery.

Learning Outcome

1. This course enables students to understand web page site planning and management.
2. Students will be able to develop advanced HTML pages with help of frames, scripting languages and evolving technologies like CSS, jQuery and XML.

Unit I: Internet and WWW **4 hours**

Introduction to internet and its applications, Internet service providers, domain name server, internet address; Protocols used in internet (HTTP, HTTPS, FTP, SMTP, TCP, IP, UDP); World Wide Web and its evolution, uniform resource locator (URL), web server and browsers; search engine, meta search engine; Domain name and its hierarchy, Issues related with domain name registration, DNS concept; Client server architecture, cross browser communication

Unit II: HTML and Graphics **10 hours**

Introduction to HTML,<!doctype>, Creating basic HTML file, core elements and attributes, comment, <meta>;

- **HTML basis** Basic text formatting, Phrase elements, lists, ordered lists, unordered lists, nesting of lists, Using character entities for special character, <font> element and attributes; Grouping elements
- **Links and Navigation** Linking to other web pages, linking to email address, Understanding directories and directories structure, Understanding URLs, Absolute and relative URLs, Advanced email links;
- **Images, Audio and Video**
  Adding images, images as link, Image maps, Client side and server side image maps; Choosing the right image format, Gif images, animated gif, jpeg, png, keeping file size small; Working with multimedia, Exploring audio and video file formats, describing multimedia elements, <embed>, <object>, <audio>, <video>, embedding video from other websites, initializing an object using <param> element
- **Tables**
  Introducing tables Basic table elements and attributes , Grouping section of;**,** table, Nested Tables, Accessible tables, How to linearize tables using ID, scope and header attributes;
- **Form**

Introducing forms, attributes, controls in form, <fieldset> and <legend> elements; Focus, Tabbing order, access keys, Disabled and read only controls, Sending form data to the servers, http get, http post

- **Frames**
  Introducing frameset, When to use frames, <frameset> element, Attributes, Nested framesets, Inline or floating frames with <iframe>;
- **Exploring new elements of HTML 5**
  <input> types,<keygen>, <progress>, <meter>, <command>, <menu>, <header> and <footer>,Spell check attribute;

Unit III: Scripting language **10 hours**

Introduction to scripting language, Difference between client side and server side scripting language, Features of javascript, What javascript can and cannot do, Using javascript in HTML document;

- **Programming fundamentals**
  Variables, operators, control flow statements, popup boxes;
- **Javascript functions**
  Defining and invoking a function, function argument, return statement, calling function with timer;
- **Events and Event Handlers**
  General Information about Events, Defining Event Handlers, events in javascript
- **Javascript objects**
  Properties of an object, methods of an object,
- w**orking with browsers object**
  Understanding window object, object collection, object properties, object methods;
- **DOM**
  Exploring document object methods, understanding DOM nodes;

Unit IV: Style sheets **10 hours**

Introduction to stylesheets, Value of stylesheets, stylesheet rules and syntax; Creating simple stylesheets, adding comments on style sheets, exploring cascading order, working with properties and selectors, applying multiple properties to selector, grouping selector, applying contextual selectors, applying selector class, applying with accociated elements; Applying tag to style sheet, applying to stylesheet, linking stylesheets, creating CSS file, linking multiple page to CSS file; **CSS properties** Controlling text, Text formatting, Text pseudo-classes, lengths, Introducing the box model; Links, backgrounds, lists, tables, outline, positioning and layout with CSS;

Unit V: Extensible Markup Language (XML) **6 hours**

XML: Introduction, Structure of XML: Logical Structure, Physical Structure; Naming Rules, Element Content Models, Element Occurrence Indicators, Character Content Document Type Declaration (DTD) and Validation, Developing a DTD, XML Schema, basic example; XSL (Extensible Style Sheet Language) or CSS (Cascading Style Sheet); XML processors: DOM and SAX;

Unit VI: Introducing j Query **2 hours**

Why jquery, Jquery fundamentals, Page layout using jquery;

Unit VII: Page layout and Design issues **3 hours**

Page Layout : Understanding site audience, page size and screen resolution, designing pages, coding your design, developing for mobile devices; Design issues : Typography, navigation, tables, forms;

Laboratory Work

List of Practical:

1. Design a web page using different text formatting tags.
2. Design a web page with links to different pages and allow navigation between pages.
3. Design a web page with Imagemaps.
4. Design a web page with different tables. Include nesting of tables in web page.
5. Design a webpage using frames.
6. Using Java Script design a web page that prints factorial / Fibonacci series / any given series.
7. Design a form with a text box and a command button. Using Java Script write a program whether the number entered in the text box is a prime number or not.
8. Design a form with all controls and validate all the controls placed on the form using Java Script.
9. Design a website using style sheets so that the pages have uniform style.
10. Design a DTD, corresponding XML document and display it in browser using CSS.
11. Design an XML document and display it in browser using XSL.
12. Design XML Schema and corresponding XML document.

Text Books

1. *HTML black book* – Steven Holzner, Dreamtech press
2. *Beginning HTML, XHTML, CSS and Java Script* – Jon Duckett, Wiely India Edition

Reference Books

1. *Web Technologies Black Book* - Kogent learning solutions
2. *Java Script step by step* - Steve Suehring East economy edition
3. *Jquery in Action* – Bear Bibeault, Yehuda Katz
4. *The complete reference* HTML and CSS - Thomas A. Powell Tata Mcgraw Hill edition