

## Web Technology I

**Course Title:** Web Technology I  
**Course No:** BIT251  
**Nature of the Course:** Theory + Lab  
**Semester:** IV

**Full Marks:** 60 + 20 + 20  
**Pass Marks:** 24 + 8 + 8  
**Credit Hrs:** 3

**Course Description:** This course covers the concepts of HTML, CSS, JavaScript and XML.

**Course Objectives:** The main objective of this course is to provide basic knowledge of HTML, CSS and client side scripting using JavaScript. In addition, the course covers the concepts of XML.

### **Course Contents:**

#### **Unit 1: Introduction (4 Hrs.)**

Web Basics: Internet, Intranet, WWW, Web Page; Web Site: Static and Dynamic; Client Server Architecture: Single Tier, Two-Tier, Multi-Tier; Web Clients; Web Servers; HTTP: HTTP Request and Response; URL, Client Side Scripting, Server Side Scripting, Web 1.0, Web 2.0

#### **Unit 2: Markup Language (11 Hrs.)**

Introduction to HTML; Elements of HTML Document: HTML, Head, and Body tags; HTML Elements and HTML Attributes, Document Type Declaration; Comments in HTML; Entity and Character References; Headings, Paragraph, Division, Formatting: b, i, small, sup, sub; Spacing: Pre, Br; Formatting Text Phrases: span, strong, tt; Image element; Anchors; Lists: Ordered and Unordered and Definition; Tables; Frames; Forms: Form Elements, Meta Tag, HTML Events: Window Events, Form Element Events, Keyboard Events, Mouse Events, HTML5 Basics: Audio, Video, Canvas, Main, Section, Article, Header, Footer, Aside, Nav, Figure Tags

#### **Unit 3: Style Sheets (10 Hrs.)**

Introduction; Cascading Style Sheets (CSS); CSS Syntax; Inserting CSS: Inline, Internal, External, ID and Class Selectors; Colors; Backgrounds; Borders; Text; Font; List; Table; CSS Box Model; Normal Flow Box Layout: Basic Box Layout, Display Property, Padding, Margin; Positioning: Relative, Float, Absolute; CSS Media Queries; Basics of Responsive Web Designs, Slicing: Converting image design into HTML

#### **Unit 4: Client Side Scripting (12 Hrs.)**

Introduction to JavaScript; Basic Syntax; Structure of JavaScript Program; Variables and Data Types; Statements: Expression, Keyword, Block; Operators; Flow Controls, Looping, Functions; Popup Boxes: Alert, Confirm, Prompt; Objects and properties; Constructors; Arrays; Built-in Objects: Window, String, Number, Boolean, Date, Math, RegExp, Form, User Defined Objects; Event Handling and Form Validation, Error Handling, Handling Cookies, Basics of AJAX and jQuery

**Unit 5: XML (8 Hrs.)**

Introduction; XML Documents; Syntax Rules; XML Elements; XML Attributes; XML Tree; XML Namespace XML schema languages: Document Type Definition(DTD), XML Schema Definition (XSD); XSD Simple Types, XSD Attributes; XSD Complex Types; XML Style Sheets (XSLT), XQuery

**Laboratory Works:**

The laboratory work includes creating web pages and applications with client side scripting using HTML, CSS, JavaScript and XML technologies.

**Text Books:**

1. Web Technologies: A Computer Science Perspective, Jeffrey C. Jackson , *Pearson Prentice Hall*

**Reference Books:**

1. HTML5 and CSS3 for the Real World”, Estelle Weyl, Louis Lazaris, Alexis Goldstein, *Sitepoint*
2. Dynamic Web Programming and HTML5, Paul S. Wang, *CRC Press*
3. HTML5 Programming with JavaScript for Dummies, John Paul Mueller
4. JavaScript: The Web Technologies Series, Don Gosseli, *Course Technology Cengage Learning*
5. Web Technologies: Html, Javascript, Php, Java, Jsp, Asp.Net, Xml And Ajax, Black Book, *Dreamtech Press*
6. An Introduction to XML and Web Technologies Anders Møller and Michael I. Schwartzbach *Addison-Wesley*
7. [www.w3schools.com](http://www.w3schools.com)