

Devi Ahilya University, Indore, India Institute of Engineering & Technology			III Year B.E. (Information Technology (Full Time)				
Subject Code & Name	Instructions Hours per Week			Credits			
5ITRE1 Web Technology	L	T	P	L	T	P	Total
Duration of Theory Paper: 3 Hours	3	1	2	3	1	1	5

Learning Objectives:

- Introduce the students to emerging web technologies
- Introduce the students with XML concepts and its application
- Motivate the students to develop 3 tier web applications
- Understanding of server side programming using Java Servlets To create awareness about the MVC

Prerequisite: NIL

COURSE CONTENTS

UNIT-I

Introduction to Web Technology: WWW and Protocols: TCP/IP , HTTP, DNS, SMTP etc. Web Servers (IIS, Apache etc)- Web Browsers, Uniform Resource Locator, HTTP Request and Response Types , n -Tier Architecture, Common Gateway Interface, Introduction to HTML5 (Elements, Attributes, Hyperlinks, Forms, div, Tables, links, images), Designing effective navigation. Cascading Style Sheets- using CSS, background images, colors and properties, using fonts, borders and boxes, margins, positioning, animation and transition effects with CSS3.

UNIT-II

JavaScript and DHTML: JavaScript and variables, functions, conditions, loops and repetition, Pop up boxes,, Event Handling, forms and validations, JavaScript standard objects, DOM, AJAX, Regular Expression. XML Technologies: Introduction of XML, Validation of XML documents, DTD, XML for data files, HTML vs XML, Embedding XML into HTML documents, Displaying XML using CSS and XSL, Introduction to JQuery.

UNIT-III

Java Servlets: Difference between CGI & Servlets, Servlet API, HttpServletRequest, HttpServletResponse, ServletConfig, ServletContext Session Management, RequestDispatcher , Filters

UNIT-IV

Working with JDBC: Database concepts, Connection to server, creating database, creating a table, inserting data, altering tables, queries, JDBC Overview & Architecture, JDBC Driver Types, Connecting servlets with databases.

UNIT-V

Introduction to JSP: JSP API, JSP Life Cycle, JSP Elements, JSP Directives, JSP Implicit Objects, Configuring Error Pages in JSP, JSP Scopes(request, session, application, page), JSP Standard Actions, MVC architecture, Introduction to Expression Language and JSTL

Learning Outcomes:

After completion of the course students will be able to -

1. Describe the concepts of WWW including browser and HTTP protocol.
2. Develop modern Web Applications using the client and server-side technologies and web design fundamentals.
3. Develop the modern web pages using the HTML5 and CSS3 features with different layouts as per the need of applications.
4. Use JavaScript to develop the dynamic web pages and validate data entered by users through forms.
5. Use Servlets to generate the web pages dynamically using database connectivity.

Books Recommended:

- [1]. Complete Reference JAVA - Naughton Schildt
- [2]. Steven M. Schafer, "HTML, XHTML and CSS", Fourth Edition by, Wiley India Edition.
- [3]. HTML 5, Black Book, Dreamtech Press
- [4]. JDBC, Servlets and JSP Black Book, by Kogent Solutions Inc. Santosh Kumar K.
- [5]. Web Technologies, Black Book, Dreamtech Press
- [6]. Head First – Servlet and JSP - Bryan Basham, SPD O'REILLY, 2nd Edition.
- [7]. Java Server Pages – Hans Bergsten, SPD O'REILLY, 3rd Edition
- [8]. Web Design, Joel Sklar, Cengage Learning
- [9]. Web Technologies – Achyut S Godbole and Atul Kahate

List of Practical Assignments:

During the learning of course, students need to do assignments:

1. Design web pages using HTML5
2. Style web pages using CSS3 features
3. Accepting and validating user entered data using JavaScript
4. Creating html pages to submit data to server
5. Write a program to demonstrate the use of Servlet request and response as well as doGet () and doPost () methods.
6. Collecting submitted data in a Servlet
7. Using redirection and request forwarding in Servlets
8. Write a Servlet to store form data to database – using Type 4 JDBC driver and Database connectivity support from server.
9. Experiment with scriptlets, declaration and expression tags
10. Writing java server pages to use JSP actions
11. Writing error pages in JSP
12. Develop sample application for session management using Servlet and JSP.
13. Develop sample application with database connectivity using Servlet/JSP