3/4 B.Tech. SECOND SEMESTER

IT6T3   **WEB TECHNOLOGIES**   **Credits: 4**

Lecture: 4 periods/week   **Internal assessment: 30 marks**
Tutorial: 1 period /week   **Semester end examination: 70 marks**

Objectives:

To provide an idea on

- Basic concepts of Hypertext Markup Language and Cascading Style Sheets.
- JavaScript for creating dynamic websites.
- Operations perform on data among web applications using XML.
- Creation of software components using Java Beans.
- Server-Side Programming using Servlets, Java Server Pages and AJAX.
- Creation of pure Dynamic Web Application using JDBC.

Outcomes:

The students will be able to

- Understand the creation of a web page.
- Develop advanced HTML pages with the help of tags and scripting language.
- Develop user defined tags to exchange the data.
- Understand the object to object communication using JAVA Beans
- Got acquaintance on capabilities of servlet architecture, cookies and session management.
- Understand dynamic content by using JSP architecture and application model.
- Build robust web applications using JSP with JDBC.

Syllabus

UNIT – I
INTRODUCTION TO WEB TECHNOLOGIES:
History of the web, Understanding Web System Architecture, Understanding 3-tier Web Architecture, Overview of HTTP, Exploring Web Technologies, HTML Introducing HTML document structure, Creating Headings on a web page, Working with links, Creating a Paragraph, Working with images (Hot Spots), Working with tables, working with frames, Introduction to Forms and HTML controls.

UNIT – II
INTRODUCING CASCADING STYLE SHEETS:
Inline, External, Internal, Style class, Multiple styles, Introducing DHTML, Introducing JavaScript Client Side benefits of using JavaScript, Embedding JavaScript in an HTML page, Using Variables, Using Operators, Working with Control Flow statements, Working with functions, Handling Events, Using Arrays, Creating objects in JavaScript.

UNIT – III
WORKING WITH XML:
Introduction to XML, XML Basics, Advanced XML, XML Technologies, Extensible HTML (XHTML), Java API for XML Processing, Document Object Model (DOM), Simple API for XML (SAX), Extensible Style Sheet Transformation (XSLT).

UNIT-IV
WORKING WITH JAVA BEANS:
Introducing Java Beans, Introspection Design Patterns for properties, methods, events, creating of a Simple Bean using BDK (optional), bean API.

UNIT –V
WORKING WITH DATABASE:
Getting started with JDBC, Defining ODBC, Introduction to JDBC, Components of JDBC, JDBC Architecture, Type-1,Type-2, Type-3,Type-4 Driver, Working with JDBC APIs Introducing JDBC APIs, Describing the Major classes and Interfaces, Communicating with Database using JDBC APIs, Creating a Simple Application , Describing Basic JDBC Statement, Creating tables by using JDBC, Working with Prepared Statement, Using Callable Statement.

UNIT –VI
WORKING WITH SERVLETS:
Introduction to Web Applications, Benefits of web applications, Introducing Web Architecture Models, Introducing the MVC architecture, Describing Servlets, Understanding Servlets, What are servlets, Introducing the Servlet API, Servlet Life Cycle, Developing First Servlet Application , GenericServlet Class.

UNIT –VII
WORKING WITH REQUESTS & RESPONSES:
Understanding Request Processing and HTTP Describing the ServletRequest Interface, Working with Initialization Parameters, Describing RequestDispatcher Interface, Describing Request Attributes, Describing HTTP basics, Problem with Servlets.

UNIT –VIII
WORKING WITH JSP:
Introduction to JSP, Understanding JSP, Describing the JSP Life Cycle, Creating a Simple JSP pages, Working with JSP basic tags and Implicit objects, Working with Java Beans and Action tags in JSP, Working with JSP standard Tag Library(JSTL), Introduction to AJAX.

Text Books:

1. Web Technologies, Black Book, Kogent Learning Solutions Inc, Dreamtech Press.(UNIT – I , II, III & VIII)
2. JDBC, Servlets, and JSP, New Edition, Santhosh Kumar K , Kogent Learning Solutions Inc, Dreamtech Press (UNIT - IV, V,VI,VII & VIII)

Reference Books:

1. Web Technologies , Uttam K. Roy, Volume 2 , Oxford University
2. Core Servlets and Java Server Pages   Volume 1 CORE
   TECHNOLOGIES , Marty Hall and Larry Brown Pearson
3. Internet and World Wide Web – How to program , Dietel and Nieto
4. An Introduction to Web Design and Programming –Wang-Thomson
5. Professional Java Server Programming S.AllamRaju and othersApres(dreamtech)
6. Java Server Programming ,Ivan Bayross and others,The X Team,SPD
7. Beginning Web Programming-Jon Duckett WROX.
8. Java Server Pages, Pekowsky, Pearson.
9. Java Script,D.Flanagan,O'Reilly,SPD.