3/4 B.Tech. SIXTH SEMESTER

EM6T5 **WEB TECHNOLOGIES** **Credits: 3**

Lecture: 3 periods/week **Internal assessment : 30 marks**
Tutorial: 1 period /week **Semester end examination: 70 marks**

Course Objectives:

This course focuses on giving the students the insights of the Internet programming and how to design and implement complete applications over the web.

Learning Outcomes:

- Extensible Markup Languages Client-side Programming using JavaScript, Creation of software components (objects) using Beans.
- Server-Side Programming using Servlets and Java Server Pages.
- Creating a pure Dynamic Web Application which retrieves the data from Database according to the client request using JDBC.

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

Cascading style sheets and JAVA script: Introducing Cascading Style sheets, Inline, External, Internal, Style class, Multiple styles, Introducing DHTML, Introducing Java
Script : 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

J**DBC**: 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

Web applications and 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

Understanding Request Processing and HTTP: Describing the ServletRequest Interface, Working with Initialization Parameters, Describing RequestDispatcher Interface, Describing Request Attributes, Describing HTTP basic, Problem with Servlets.

UNIT –VIII

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.

Learning resources

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