

3/4 B.Tech. SECOND SEMESTER
WEB TECHNOLOGIES
(Common to CSE & IT)
Required

CS6T2 **Credits: 4**

Lecture: 4 periods/week
Tutorial: 1 period /week

Internal assessment: 30 marks
Semester end examination: 70 marks

Course context and Overview: On completion of this course, a student will be familiar with client server architecture and able to develop a web application using java technologies To create fully functional website/web application with MVC architecture.

Prerequisites: None

Objectives:

1. To understand the concepts of Hypertext Markup Language and Cascading Style Sheets.
2. To learn JavaScript for creating dynamic websites.
3. To learn the operations perform on data among web applications using XML.
4. To acquire knowledge on creation of software components using JAVA Beans.
5. To learn Server-Side Programming using Servlets and Java Server Pages.
6. To learn the creation of pure Dynamic Web Application using JDBC.

Learning Outcomes:

Ability to:

1. Develop advanced Web Pages with the help of HTML, CSS and Scripting Languages.
2. Make use of DTD, XSL to validate XML Pages.
3. Understand the object to object communication using Java Beans.
4. Apply JDBC to connect different databases using Java.
5. Build dynamic Web Pages using Servlets and JSP.

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 JDK (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.

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
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.