3/4 B.Tech. FIRST SEMESTER

CS5T5C **WEB TECHNOLOGIES** **Credits: 4**

Free Elective

Lecture: 4 periods/week **Internal assessment: 30 marks**

Tutorial: 1 period /week **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: Nil

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:

The students will be able to

Understand web page creation.

1. Develop advanced HTML pages with the help of tags and scripting language.
2. Develop user defined tags to exchange the data.
3. Understand the object to object communication using JAVA Beans
4. Get acquaintance on capabilities of servlet architecture, cookies and session management.
5. Understand dynamic content by using JSP architecture and application model.
6. Build robust web applications using JSP with JDBC.

Unit – I

Introduction to Web Technologies:

History of the web, OSI Reference Model, Understanding Web System Architecture, Understanding 3-tier Web Architecture, Overview of HTTP, Exploring Web Technologies,

Unit – II

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.

Unit – III

Working with frames, Introduction to Forms and HTML controls, Introducing Cascading Style sheets, Inline, External, Internal, Style class, multiple styles.

Unit - IV

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 - V

Getting started with Web applications in Java:

Introduction to web applications, Exploring Java Based Web Technologies, Introducing Web Architecture models, Introducing MVC architecture.

Unit - VI

Working with JSP; Understanding the JSP, Describing the JSP Life Cycle, Creating simple JSP pages, Working with JSP basic tags and Implicit objects.

Unit - VII

Using Java beans and Action tags in JSP, Using JSP standard tag library (JSTL) [core JSTL, SQL tag Library].

Unit - VIII

Working with JDBC: Introduction to JDBC, Exploring JDBC drivers, Describing JDBC APIs, Creating s Simple JDBC application.

Learning Resources

Text Books :

1. Web Technologies, Black Book, Kogent Learning Solutions Inc, Dreamtech Press.
2. JDBC, Servlets, and JSP, New Edition, Santhosh Kumar K , Kogent Learning Solutions Inc, Dreamtech Press

Reference Books:

1. Web Technologies, Uttam K. Roy, Volume 2 , Oxford University
2. Core SERVLETS ANDJAVASERVER 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.