**WEB TECHNOLOGIES**

**COURSE OUTCOMES**

At the end of the course, the student will develop ability to

1. Create a website using HTML5 and add dynamic functionality to it by using JavaScript, CSS & XHTML.
2. Implement three tier architecture using servlets and JSP.
3. Organizing JSP for Dynamic Web Development Applications.
4. Apply JDBC knowledge to make connection to various connections.
5. Recite EJB and Struts’ for Web Development Applications
6. Build dynamic websites on real world problems.

**UNIT I**

HTML 5.0, CSS and XML.

Basic Tags of HTML, Tables, div, span, Forms, Media Tags.

Controlling Page Layout, Backgrounds, borders, colours, and text, Transformations and Animations

XML Elements, XML DTD and Schema.

**UNIT II**

JavaScript and JQuery

JavaScript Essential Syntax: Declaring variables and arrays, Using operators and expressions, Loops and decision-making constructs, JavaScript Functions, Alert, confirmation and prompt boxes, Regular expressions, JavaScript Objects, Event-handling.

jQuery introduction, The jQuery ready Function, jQuery Selectors, jQuery and DOM, jQuery and Events, jQuery UI: jQuery UI overview, Animation and special effects, the amable widgets.

**UNIT III**

AJAX and Angular JS

Overview of AJAX, Creating an XML Http Request object, Interacting with a server, Handling XML and JSON. Angular JS Introduction, Expressions and Data Biding, Working with Directives, Controllers and Forms

**UNIT IV**

JDBC and Servlets

JDBC Drivers, Connections, Statements and Result Set

Servlet Life Cycle, Servlet Types, Session Management JDBC-Servlet.

**UNIT V**

JSP and Beans

JSP Life Cycle, JSP Elements, implicit Objects, JDBC-JSP.

Bean Creation, JDBC-Bean ,Introspection.

**UNIT VI**

Struts and Hibernate

Struts Introduction, Struts Flow of Execution, Struts Elements, Struts Tag Library and Validations

Advantages of Hibernate compared to JDBC, ORM (Object Relational Mapping)

Configuration xml file and Mapping xml file along with dtds. Hibernate architecture

Installation and Directory Structure Hibernate Data Types. Application using Hibernate.

**TEXT BOOKS**

* + - 1. Web Programming, building internet applications, Chris Bates 2nd edition, WILEY Dreamtech.

1. Java Server Pages –Hans Bergsten, SPD O’Reilly.

**REFERENCE BOOKS**

* + - 1. Programming world wide web-Sebesta, Pearson

**WEB TECHNOLOGIES LAB**

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**Week 1**

Design the following static web pages required for an online book store web site. HOME PAGE: The static home page must contain three frames.

Top frame: Logo and the college name and links to home page, Login page, Registration page, Catalogue page and Cart page (the description of these pages will be given below). Left frame: At least four links for navigation, which will display the catalogue of respective links. For e.g.: When you click the link “CSE” the catalogue for CSE Books should be displayed in the Right frame.

Right frame: The pages to the links in the left frame must be loaded here. Initially this page contains

**Week 2**

Design a web page using CSS (Cascading Style Sheets) which includes the following:

1. Use different font, styles: In the style definition you define how each selector should work font, color etc.). Then, in the body of your pages, you refer to these selectors to activate the styles.
2. Set a background image for both the page and single elements on the page.
3. Control the repetition of the image with the background-repeat property. As background-repeat: repeat Tiles the image until the entire page is filled, just like an ordinary background image in plain HTML.
4. Define styles for links asA: link A: visited A: active A: hover Example: <style type="text/css"> A:link {text-decoration: none} A:visited {text-decoration: none} A:active {text-decoration: none} A: hover {text-decoration: underline; color: red;} </style>

**Week 3**

Write an XML file which will display the Book information which includes the following: 1) Title of the book

2) Author Name

3) ISBN number

4) Publisher name

5) Edition

6) Price

Write a Document Type Definition (DTD) to validate the above XML file. Display the XML file as follows. The contents should be displayed in a table. The header of the table should be in color GREY. And the Author names column should be displayed in one color and should be capitalized and in bold. Use your own colors for remaining columns. Use XML schemas XSL and CSS for the above purpose. Note: Give at least for 4 books. It should be valid syntactically. Hint: You can use some xml editors like XML-spy.

**Week 4**

Create a simple XMLHttpRequest, and retrieve data from a TXT file.

Create an XMLHttpRequest to retrieve data from an XML file and display the data in an HTML table.

How a web page can communicate with a web server while a user type characters in an input field.

**Week 5**

Write an AngularJS application for User Registration and Login.

Write an AngularJS application to develop Forms

Write AngularJS and java script applications for form Validation

**Week 6**

Demonstrates the jQueryhide() method, hiding the current HTML element.

Demonstrates the jQueryclick() event.

Demonstrates a simple use of the jQueryanimate() method.

Demonstrates that you can manipulate multiple CSS properties with the jQueryanimate() method.

**Week 7**

Install a database (Mysql ) with port no (3306) username is root and password is root.

Create a table which should contain at least the following fields: name, password, email-id, phone number (these should hold the data from the registration form).

Installing JDBCDriver to JAVA.

Write a java program to connect to that database and extract data from the tables and display them. Experiment with various SQL queries(DML and DDL).

Use Prepared Statements to store the data into the above the Table.

**Week 8**

Install APACHE TOMCAT web server.

While installation assign port number 8080 to APACHE Tomcat.

Demonstration of (Generic and HTTP)Servlet Execution.

User Authentication : Assume four users user1, user2, user3 and user4 having the passwords pwd1, pwd2, pwd3 and pwd4 respectively. Write a serve let for doing the following.

1. Create a Cookie and add these four user id’s and passwords to this Cookie.

2. Read the user id and passwords entered in the Login form (week1) and authenticate with the values (user id and passwords ) available in the cookies.

If he is a valid user(i.e., user-name and password match) you should welcome him by name(user-name) else you should display “ You are not an authenticated user “.

**Week 9**

Installing JDBC Drivers into Tomcat.

Design a three tired architected program which involves User Interface to read the details of a Student ,and a Servlet to read the form details and store it into a Student Table.

**Week 10**

Doing the pre-requisite for executing a JSP.Demonstation of JSP

Write JSP Script which accepts user name and nick name from user. At first visit, display message “Hello user name” and for next successive requests, display “Hello nick name”. Use username if visit count is odd and nick name if visit count is even. (use declaration scripting elements)

Write JSP code to generate department wise monthly attendance reports of employee

Write a JSP which does the following job: Insert the details of the 3 or 4 users who register with the web page using registration form. Authenticate the user when he submits the login form using the user name and password from the database.

**Week 11**

Create a Employee Bean which will be used in JSP page, Get the value of java Bean variable using <jsp:getProperty> tag.

Create a JDBC Bean which takes the name of the table and display the content of the table in a tabular format using JSP.

**Week 12**

Using Struts Design an Drop Down Box for Choosing Different Search Engines and Year of Creation.

Demonstrate a program on iterations in Struts.

**Week 13**

Store the details of a student into a Table using Hibernates and Annotations.

Design a Web Application using Hibernates.