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Course Code: CSE312

SCRIPT PROGRAMMING

Course Objectives

This course will help the learner to develop client side and server side scripts and design rich internet applications using AJAX.

UNIT - I

11 Periods

Introduction to HTML5: First Example - W3C HTML5 validation service-Headings - Linking-Images - Lists - Tables - Forms - Internal Linking - HTML form input Types. **Javascript:** Introduction - Your First Script - Obtaining user Input with prompt Dialogs - Arithmetic - Decision Making - Javascript control statements: Algorithms - Control statements - if, if - else selection statement - while repetition statement - Formulating Algorithms based on counter controlled repetition - Sentinel - Controlled Repetition - Nested Control Statements - Assignment Operators - Increment and Decrement operators - for Repetition statement

UNIT - II

11 Periods

Control Structures: Switch Multiple-Selection Statement - do - while Repetition statement - break and continue Statements - Logical Operators - Functions: Function Definitions - Random Number Generation - Scope Rules - Javascript Global Functions - Recursion-Recursion Vs Iteration. **Arrays:** Declaring and Allocating Arrays - Examples using Arrays-Objects: Math - String - Date - Boolean and Number objects - document Object Model - Modeling a Document - Traversing and Modifying a DOM Tree - DOM Collections - Dynamic Styles and Timer to create Animated Effects

UNIT - III

11 Periods

Ajax: Introduction - Evolution of the Web - The Real Ajax - Ajax Principles - Technologies behind Ajax - Ajax and Web 2.0. **Ajax Basics:** HTTP Primer - Ajax Communication Techniques - Cache Control. **Ajax patterns:** Communication Control Patterns - Fallback Patterns. Ajax Libraries: JQuery. **Request Management:** Priority Queues - The Request Management Object - Using Request Manager. **JSON** - Introduction

UNIT - IV

12 Periods

Introduction to JSP: The Problem with Servlets - The Anatomy of a JSP Page - JSP Processing - JSP Application Design with MVC. **Setting Up and JSP Environment:** Installing the Java Software Development Kit - Tomcat Server & Testing Tomcat JSP Application Development - Generating Dynamic Content - Using Scripting Elements - Implicit JSP Scripting Objects - Using Scriptlets - Using Expressions - Using Declarations - Mixing Action Elements and Scripting Elements. **Processing Input and Output:** Reading Request Parameter Values - Validating User Input - Formatting HTML Output. **Error Handling and Debugging:** Dealing with Syntax Errors - Debugging a JSP Application - Dealing with Runtime Errors. **Accessing a Database:** Accessing a Database from a JSP Page - Validating Complex Input without a Bean - Using Transactions - Application - Specific Database Actions

TEXTBOOKS

1. Paul Deitel, Harvey Deitel and Abbey Deitel. *Internet and World Wide Web How to Program*, Pearson Higher Education, Fifth Edition, 2011.
2. Nicholas C Zakas and Jeremy McPeak. *Professional Ajax*, Wiley India, Second Edition, 2007.
3. Hans Bergsten. *Java Server Pages*, O'Reilly, Third Edition, 2003.

REFERENCES

1. Jeremy McPeak and Paul Wilton. *Beginning JavaScript*. Wrox (Wiley Brand), Fifth Edition, 2015.
2. Tom Negrino and Dori Smith. *JavaScript*, Peachpit Press, Eighth Edition, 2009.
3. Pekowsky. *Java Server Pages*, Addison-Wesley Professional, Pearson, Second Edition 2004.
4. Duane K. Fields, Mark A. Kolb and Shawn Bayern. *Web Development with Java Server Pages*, Manning Publications, Second Edition, 2001.

ONLINE MATERIALS

1. <http://nptel.ac.in/courses/106105084/13>
2. <http://nptel.ac.in/courses/106105084/25>
3. <http://nptel.ac.in/courses/106105084/26>

UNITWISE LEARNING OUTCOMES

Upon successful completion of each unit the learner will be able to

Unit I	<ul style="list-style-type: none"> • Create Webpages using HTML5 • Design simple applications using JavaScript • Apply mark up languages for processing, identifying, and presenting of information in web pages
Unit II	<ul style="list-style-type: none"> • Design and implement dynamic web page with validation using JavaScript objects • Apply different event handling mechanisms
Unit III	<ul style="list-style-type: none"> • Design and implement rich internet enabled applications using AJAX. • Understand how AJAX requests and use the response to dynamically update the web pages
Unit IV	<ul style="list-style-type: none"> • Create server side scripts using Java Server Pages • Develop JSP applications by proper error handling, database connectivity

COURSE LEARNING OUTCOMES

Upon successful completion of this course, the learner will be able to

- Design HTML forms and build rich web applications
- Experiment with client side and server side scripting
- Design Interactive WebPages using JavaScript
- Build dynamic website using AJAX
- Design applications for Communication control patterns using AJAX
- Develop a server-side JSP application with Interactive database connectivity

LIST OF LABORATORY EXERCISES

1. Creation of a webpage using tables, frames, forms and lists
2. Working with controls in HTML 5
3. Developing simple applications using Javascript (Using alert box, confirm, prompt, control structures, and arrays)
4. Create an application using DOM
5. Using a timer and dynamic styles to create animated effects
6. Creating a simple AJAX application using XMLHttpRequest object
7. Implementing communication techniques and cache control using AJAX
8. Creating a jQuery application for customer management system using GET and POST request
9. Create a JSP application for Form validation
10. Develop JSP applications for employee management system and establish database Connectivity