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Course Code: CSE312

Semester: V

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