Banasthali Vidyapith
Department of Computer Science
Course Handout: B.Tech. (IT)-VI Semester, December 2023-May 2024

Date: 29-12-2023

Course Code: IT 302 **Course Name: Internet and Web Technology**

Credit Points: 4 **Max. Marks: 100 (CA: 40 + ESA: 60)**

Course Instructor: Mr. Sushil Buriya, Assistant Professor, Computer Science

Learning Outcomes: On successful completion of the course students will be able to

- Describe the working of Internet & World Wide Web.
- Develop a dynamic webpage by the use of java script, HTML & CSS.
- Write a well formed / valid XML document.
- Develop web application using JSP with database connectivity.

Syllabus:

Section-A

Introduction: Introduction to Internet, History & Evolution of Internet, Architecture of Internet, Working of Internet, Various services of Internet, Introduction to World Wide Web, Architecture of WWW, Web Browser architecture, working & Features of web browser, Web Documents, type of web documents.

HTML: Introduction to HTML, structure of HTML document, Elements (Headings, Paragraphs, Formatting, Lists, Quotations, Links, Images, Tables, Forms, Audio, Video, Blocks, Layouts etc.) & Attributes.

Section-B

CSS: Introduction, Syntax of CSS rule, Internal, External and Embedded CSS, CSS properties (Text, Fonts, Tables, Border, Box, background), Class Selector, ID Selector, Element Selector, Pseudo classes.

JavaScript(JS): Introduction to JavaScript, JavaScript basics (statements, syntax, comments, variables, operators, data types, control structures, loops), JS objects, JS functions, JS form API, JS HTML DOM, JS Browser BOM, regular expressions, data validations using JS.

XML: Introduction to XML, XML document rules, XML type definition, XML Schemas, XML schema documents, XML programming interfaces.

Section-C

JSON: Introduction to JSON, JSON syntax, uses of JSON, parsing andgenerating JSON.

AJAX: Introduction to AJAX, Creating Ajax requests and responses, Monitoring Ajax request state and events, responding to Ajax requests with HTML and JSON.

Server-side Technologies: Historical background of server sidetechnologies, Web Server architecture, accessing web server, working & features of web server, Basics of JSP, JSP implicit objects, JSP Session Tracking, JSP Cookies handling, JSP page redirecting, database connectivity in JSP.

Web2.0: Introduction to Rich Internet Application, Introduction to Service oriented Architecture, Introduction to Web Services.

Suggested Books:

S1. Deitel, P., & Deitel, H. (2007). Internet & world wide web: how to program. Prentice Hall Press.

S2. Greenlaw, R., & Hepp, E. (2001). Inline/online: fundamentals of the internet and the world wide web. McGraw Hill Higher Education.

S3. Pekowsky, L. (2017). Java Server Pages. Addison Wesley.

S4. Fain, B. Responsive Web Design with HTML5 and CSS3. Packt Publishing Limited.

Suggested E-Learning Material:

1. HTML, CSS, and Javascript for Web Developers
   https://www.coursera.org/learn/html-css-javascript-for-webdevelopers

2. Internet Technology
   https://nptel.ac.in/courses/106105084/

Assessment Schedule:

Component	Marks	Submission/ Examination Date(s)	Allotment/ Syllabus
Assignment 1**	10	24 January, 2024	Topics shall be allotted in the class by 07 January, 2024
Periodical Test 1	10	02-05 February, 2024*	Lecture No. 01 to 16
Assignment 2**	10	28 February, 2024	Topics shall be allotted in the class by 12 February, 2024
Periodical Test 2	10	15-18 March, 2024*	Lecture No. 17 to 32
End-Semester Examination	60	18 April - 05 May, 2024*	Entire Syllabus

*Subject to change.

** Assignment marks will be based on written document(s)/ any other component(s) as decided by the instructor(s).

Lecture Plan:

Lecture Number	Topics to be Covered	Suggested Books
1 – 2	Introduction to Internet, History & Evolution of Internet, Architecture of Internet	S1/ S2
3 – 4	Working of Internet, Various services of Internet, Need of Internet	S1/ S2
5 – 8	Introduction to World Wide Web, Architecture of WWW, Web Browser architecture, working & Features of web browser, Web Documents, type of web documents	S1/ S2
9 – 11	Introduction to HTML, structure of HTML document, Writing and display of HTML documents.	S1/ S2/S4
12 – 16	HTML elements (Headings ,Paragraphs ,Formatting , Lists ,Quotations ,Links, Images, Tables , Forms, Audio, Video, Blocks, Layouts etc.) & Attributes with examples, HTML5 elements	S1/ S2/S4
17 – 18	Introduction to CSS, Benefits & need of CSS, Syntax of CSS rule, Internal, External and Embedded CSS	S1/ S2/S4
19 – 20	CSS properties (Text, Fonts, Tables, Border, Box, background) with examples	S1/ S2/S4
21 – 23	Class Selector, ID Selector, Element Selector, Pseudo classes. CSS box model with CSS examples	S1/ S2/S4
24 – 26	Introduction to JavaScript, JavaScript basics (statements, syntax, comments, variables, operators, data types, control structures, loops)	S1/ S2/S4
27 – 29	JS objects, in built objects of JS, JS functions, in built JS functions, JS form API, JS HTML DOM	S1/ S2/S4
30 – 32	JS Browser BOM, regular expressions, data validations using JS	S1/ S2/S4
33 - 34	Introduction to XML, XML document rules, XML type definition	S1/ S2
35 - 36	XML Schemas, XML schema documents, XML programming interfaces	S1/ S2
37 - 39	Introduction to JSON, JSON syntax, uses of JSON, parsing and generating JSON.	S1
40 - 41	Introduction to AJAX, Creating Ajax requests and responses	S1
42 - 43	Monitoring Ajax request state and events, Responding to Ajax requests with HTML and JSON	S1
44 – 45	Historical background of server-side technologies, Web Server architecture, accessing web server, working & features of web server	S1/S2/ S3
46 - 48	Basics of JSP, JSP implicit objects, JSP Session Tracking, JSP Cookies handling, JSP page redirecting, database connectivity in JSP	S3
49 - 50	Introduction to Rich Internet Application, Introduction to Service oriented Architecture, Introduction to Web Services	S1