Course Title: Web Technology   **Full Marks: 60+20+20**

Course No: CSC318   **Pass Marks: 24+8+8**

Nature of the Course: Theory + Lab   **Credit Hours: 3**

Year: Third, Semester: Fifth

Course Description: This course covers the fundamental concepts of HTML, CSS, JavaScript, XML, and PHP.

Course Objectives: The main objective of this course is to provide basic knowledge of web design using HTML and CSS, client side scripting using JavaScript, handling web data using XML and server side scripting using PHP.

Detail Syllabus

Chapters / Units	Teaching Methodology	Teaching Hours
Unit I: Introduction 1.1.Web Basics: Internet, Intranet, WWW, Static and Dynamic Web Page; Web Clients; Web Servers 1.2.Client Server Architecture: Single Tier, Two-Tier, Multi-Tier 1.3.HTTP: HTTP Request and Response; URL 1.4.Client Side Scripting, Server Side Scripting, 1.5.Web 1.0, Web 2.0	**Class Lecture**	**3 Hours**
Unit II: Hyper Text Markup Language 2.1. Introduction to HTML; Elements of HTML Document; HTML Elements and HTML Attributes, Headings, Paragraph, Division , Comments in HTML 2.2. Formatting: b, i, small, sup, sub; Spacing: Pre, Br; Formatting Text Phrases: span, strong, tt 2.3. Image element; Anchors; Lists: Ordered and Unordered and Definition; 2.4. Tables(table, tr, td colspan, rowspan, thead, tbody,tfoot); Frames (iframe) 2.5. Forms: Form Elements, ID attributes, Class Attributes of HTML Elements	**Class Lecture** **+** **Lab Session**	**10 Hours**

2.6. Meta Tag, Audio (src, controls, autoplay, preload, loop), Video (src, controls, autoplay, poster, loop), Canvas, Main, Section, Article, Header, Footer, Aside, Nav, Figure Tags		
2.7. HTML Events: Window Events, Form Element Events, Keyboard Events, Mouse Events		
Unit III: Cascading Style Sheets 3.1. Introduction; Cascadding Style Sheets (CSS); CSS Syntax 3.2. Inserting CSS: Inline, Internal, External 3.3. CSS ID and Class Selectors 3.4. Colors; Backgrounds; Borders; Text; Font; List; Table 3.5. CSS Box Model; Normal Flow Box Layout: Basic Box Layout 3.6. Display Property, Padding, Margin; Positioning: Relative, Float, Absolute 3.7. CSS3 Borders, Box Shadows, Text Effects and shadow 3.8. Basics of Responsive Web Designs; Media Queries (Media Types, Viewport) 3.9. Introduction to Bootstrap (Basic concepts and installation)	**Class Lecture** **+** **Lab Session**	**8 Hours**
Unit IV: Client Side Scripting with JavaScript 4.1. Structure of JavaScript Program 4.2. Variables and Data Types; Statements: Expression, Keyword, Block; Operators 4.3. Flow Controls, Looping 4.4. Functions; Popup Boxes: Alert, Confirm, Prompt 4.5. Objects and properties; Constructors	**Class Lecture** **+** **Lab Session**	**9 Hours**

4.6. Arrays		
4.7. Built-in Objects: Window, String, Number, Boolean, Date, Math, RegExp, Form, DOM		
4.8. User Defined Objects; Event Handling and Form Validation		
4.9. Error Handling (Try/Catch),		
4.10. Handling Cookies		
4.11. jQuery Syntax; jQuery Selectors (Element, Id, Class), jQuery Events (Mouse, Keyboard, Form, Document/Window) and jQuery Effects (Hide/Show, Fade, Slide, Animate, Stop, Callback, Chaining)		
4.12. Introduction to JSON (Syntax, Data types, Parsing JSON)		
Unit V: AJAX and XML 5.1. Basics of AJAX 5.2. Introduction to XML and its Application 5.3. Syntax Rules for creating XML document 5.4. XML Elements; XML Attributes; XML Tree 5.5. XML Namespace 5.6. XML schema languages: Document Type Definition(DTD), XML Schema Definition (XSD); XSD Simple Types, XSD Attributes; XSD Complex Types 5.7. XML Style Sheets (XSLT) 5.8. Xquery	**Class Lecture** **+** **Lab Session**	**7 Hours**
Unit VI: Server Side Scripting using PHP 6.1. PHP Syntax 6.2. Variables, Data Types , Strings, Constants 6.3. Operators, Control structure, Functions, Array	**Class Lecture** **+** **Lab Session**	**8 Hours**

6.4. Creating Class and Objects		
6.5. PHP Forms, Accessing Form Elements, Form Validation, Events		
6.6. Cookies and Sessions		
6.7. Working with PHP and MySQL, Connecting to Database, Creating, Selecting, Deleting, Updating Records in a table, Inserting Multiple Data		
6.8. Introduction to CodeIgniter, Laravel, Wordpress (Basic concepts and Installation)		

Text Books:
1. Web Design with HTML, CSS, JavaScript and jQuery Set, Jon Duckett, *John Wiley & Sons*
2. Web Technologies: A Computer Science Perspective, Jeffrey C. Jackson *, Pearson Prentice Hall*
3. Learning PHP, MySQL & JavaScript: with jQuery, CSS & HTML5, Robin Nixon, *O'Reilly*
4. PHP & MySQL: Server-side Web Development, Jon Ducket, *Wiley*

Reference Books:
1. HTML5 and CSS3 for the Real World", Estelle Weyl, Louis Lazaris, Alexis Goldstein, *Sitepoint*
2. HTML & CSS: Design and Build Websites, Jon Duckett, *John Wiley & Sons*
3. Dynamic Web Programming and HTML5, Paul S. Wang, *CRC Press*
4. HTML5 Programming with JavaScript for Dummies, John Paul Mueller
5. JavaScript and JQuery: Interactive Front-end Web Development, Jon Duckett, *Wiley*
6. The Complete Reference: HTML and CSS, Thomas A. Powell, *Mc Graw Hill*
7. JavaScript: The Web Technologies Series, Don Gosseli, *Course Technology Cengage Learning*
8. Web Technologies: HTML, JAVASCRIPT, PHP, JAVA, JSP, ASP.NET, XML and AJAX, Black Book, *Dreamtech Press*
9. An Introduction to XML and Web Technologies, Anders Møller and Michael I. Schwartzbach, *Addison-Wesley*
10. PHP and MySQL Web Development, Luke Welling, *Addison Wesley*
11. www.w3schools.com

Laboratory Work Manual

The laboratory work includes creating web pages and applications with using HTML, CSS, JavaScript, XML, and PHP. Student should write programs and prepare lab sheet for all of the units in the syllabus. The instructors have to prepare lab sheets for individual units covering the concept of the units as per the requirement. All of the lab reports should be evaluated during the corresponding weeks of hands on practice. The lab session for above chapters should be as per following description however the depth of lab works are not limited to the below mentioned contents only. Based on the lab works in each of the units, students have to prepare a web based application, using above mentioned technologies, as a project work.

Unit II: Unit 2: Hyper Text Markup Language (10 Hrs.)

- Write HTML scripts for illustrating all of the concepts mentioned in this unit.

Unit III: Cascading Style Sheets (8 Hrs.)

- Write CSS scripts for implementing the concepts mentioned in this unit like;
  - o Inline, internal and external css for Backgrounds; Borders; Text; Font; List; Table, HTML elements etc.
  - o Class, id, box models, Display layouts
  - o CSS3 concepts like box shadow, text effects etc.
  - o Responsive Designs using media queries (media types, viewports)
  - o Using Bootstrap

Unit IV: Client Side Scripting with JavaScript (9 Hrs.)

- Write programs/scripts for illustrating the concepts of JavaScript mentioned in this unit as
  - o Operators, Flow Controls, Looping, Functions; Popup Boxes
  - o Arrays
  - o Built-in Objects: Window, String, Number, Boolean, Date, Math, RegExp, Form
  - o Event Handling and Form Validation, Error Handling,
  - o Handling Cookies,

- Write programs/scripts for implementing
  - o Basics of jQuery Syntax;
  - o jQuery Selectors, Events and Effects;
  - o Basics of JSON

Unit V: AJAX and XML (7 Hrs.)
- Write programs/scripts for implementing
  - o Basics of AJAX; Using XMLHTTPRequest Object
  - o XML Files with XML Elements and XML Attributes
  - o XML schema languages: Document Type Definition(DTD), XML Schema Definition (XSD)
  - o XML Style Sheets (XSLT)

Unit VI: Server Side Scripting using PHP (8 Hrs.)

- Write PHP programs for implementing concepts of PHP like;
  - o Variables, Data Types , Strings, Constants, Operators, Control structure, Functions, Array, Class and Objects,
  - o PHP Forms, Accessing Form Elements, Form Validation, Events,

- o Management of Cookies and Sessions,
- o Hanlding databse in PHP using MySQL, Database Connection, Creating, Selecting, Deleting, Updating Records in a table using PHP and MySQL,

- Installation and usages of Introduction to CodeIgniter, Laravel, Wordpress.

Course Title: Web Technology **Full Marks:** 60
Course No: CSC318 **Pass Marks:** 24
Level: B. Sc CSIT Third Year/ Fifth Semester **Time: 3 Hrs**

Section A
Long Answer Questions

Attempt any Two questions. *[2*10=20]*

1. Explain the structure of HTML file with example. How is HTML different from CSS? Explain three different ways for inserting CSS code into an HTML file.
2. Write HTML Script for creating a form containing text box for username, password field for password, and checkbox for Education fields. Write a JavaScript function for the validation of the form for all of the fields as required. In addition length of username should at least 4, the password should start with digit and end with $.
3. Prepare a form that should contain text box, selection list and radio button. Write PHP script to store data from the form into database using database connection and appropriate query.

Section B
Short Answer Questions

Attempt any Eight questions. *[8*5=40]*

4. Describe client server architecture with its types.
5. Write a HTML script to insert audio file in a HTML page? Use the controls and autoplay properties.
6. What is CSS selector? Compare id selector with class selector.
7. Write a JavaScript code to create an array of elements {csit, it, bca, bim}. Display the array in body of HTML.
8. Write a HTML script containing use of media query for changing the background-color of html page to black if the viewport is 600 pixels wide or more than that otherwise if the viewport is less than 500 pixels, the background-color should be changed to red.
9. What is XML namespace? How it is used in XML files?
10. Discuss different types of jQuery Selectors with examples.
11. Write a PHP script that illustrates handling of cookie.
12. Write HTML script for displaying div with following output. The div should be floating right.

CSIT
1. PMC
2. BMC
BCA
• TC
• PPL