Course Code	Course Title	L	T	P	C
BCSE203E	Web Programming	1	0	4	3
Pre-requisite	NIL	Syllabus version			
		1.0			

Course Objectives

1. To convey the Internet and Its Application in Real world.
2. To introduce the fundamentals of web programming through HTML and CSS.
3. To establish the application of Javascript in designing interactive web pages.
4. To investigate various elements of ReactJS and design user interfaces to deploy in the real time.

Course Outcomes

At the end of this course students will be able to:

1. Apply various elements of HTML and CSS.
2. Design interactive web pages using JavaScript.
3. Create Dynamic Web Applications using ReactJS.
4. Deploy and host web applications in Local Servers or Cloud platforms.

Module:1	**Introduction**	**2 hours**

World wide web and its evolution - E-mail, Telnet, FTP, E–commerce, Cloud Computing, Video conferencing - Internet service providers, IP Address, URL, Domain Name Servers - Web Browsers, Search Engine -Web Server vs Application Server.

Module:2	**Hypertext Markup Language**	**2 hours**

HTML Tags, Structure, HTML Coding Conventions - Block Elements, Text Elements, Code-Related Elements, Character References - Lists, Images, section, article, and aside Elements - nav and a Elements - header and footer Elements.

Module:3	**Cascading Style Sheets**	**2 hours**

CSS Overview - CSS Rules, CSS Syntax and Style - Class Selectors, ID Selectors, span and div Elements - Cascading, style Attribute, style Container, External CSS Files - CSS Properties: Color Properties, Font Properties, line-height Property, Text Properties, Border Properties. Element Box, padding Property, margin Property - Hosting a Website and GIT.

Module:4	**JavaScript**	**3 hours**

Hello World Web Page - Buttons, Functions, Variables, Identifiers - Assignment Statements and Objects - Document Object Model, Forms: form Element, Controls, Text Control Accessing a Form's Control Values, reset and focus Methods – Event Handler Attributes: onchange, onmouseover, onmouseout.

Module:5	**Advanced JavaScript**	**2 hours**

While Loop, External JavaScript Files, do Loop, Radio Buttons, Checkboxes, for Loop - fieldset and legend Elements- Manipulating CSS with JavaScript- Using z-index to Stack Elements-Textarea Controls - Pull-Down Menus- List Boxes- Canvas and Drawing - Event Handler and Listener.

Module:6	**ReactJS**	**2 hours**

React Environment Setup - ReactJS Basics - React JSX - React Components: React Component API - React Component Life Cycle - React Constructors - React Dev Tools - React Native vs ReactJS.

Module:7	**Advanced ReactJS**	**2 hours**

React Dataflow: React State - React Props - React Props Validation - Styling React - Hooks and Routing - Deploying React - Case Studies for building dynamic web applications.

	Total Lecture hours:	**15 hours**

Text Book(s)

1. Dean, J., Web Programming with HTML5, CSS, and JavaScript. Jones & Bartlett Learning, 2018

2.	Minnick, C. Beginning ReactJS foundations building user interfaces with ReactJS: An Approachable Guide, OReillly, 2022.
Reference Books	
1.	Harvey M Deitel, Paul J Deitel and Tem R Nieto, Internet and World Wide Web How to Program, Pearson, 6th Edition, 2020.
2.	Rebah, H.B., Boukthir, H. and Chedebois, A., Website Design and Development with HTML5 and CSS3. John Wiley & Sons, 2022.
Mode of Evaluation: Written Assignment, Quiz.	
Indicative Experiments	
1.	Explore various terminologies related to Internet (ISP, Email, Telnet, FTP, Web browsers, Search Engines)
2.	Experiment the use of basic HTML elements.
3.	Demonstrate the applications of Lists, Tables, Images, Section, article and aside elements.
4.	Investigate the various components of CSS.
5.	Develop web pages using HTML and various elements of CSS.
6	Designing simple dynamic webpages using Javascript.
7.	Build web pages using While Loop, External JavaScript Files, do Loop, Radio Buttons, Checkboxes, for Loop - fieldset and legend Elements.
8.	Manipulating CSS with JavaScript- Using z-index to Stack Elements-Textarea Controls - Pull-Down Menus- List Boxes- Canvas and Drawing - Event Handler and Listener.
9.	React Environment Setup - ReactJS Basics - React JSX - React Components: React Component API.
10.	Understand React Component Life Cycle and apply React Constructors - React Dev Tools - React Native vs ReactJS.
11.	Envisage React Dataflow: React State - React Props - React Props Validation - Styling React - Hooks and Routing.
12.	Deploying React - Case Studies for building dynamic web applications.
Total Laboratory Hours	**60 hours**
Text Book	
1.	Laura Lemay, Rafe Colburn and Jennifer Kyrnin, Mastering HTML, CSS and Javascript Web Publishing, BPB Publication, 1st Edition, 2016.
Reference Books	
1.	Alex Banks and Eve Porcello, Learning React: Functional Web Development with React and Redux, O'Reilly Publishers, 1st Edition, 2017.
Mode of assessment: Continuous Assessments, FAT	
Recommended by Board of Studies	26-07-2022
Approved by Academic Council	No. 67 Date 08-08-2022