WEB APPLICATION DEVELOPMENT

V Semester: CSE(CS) / CSIT / CSE / IT
IV Semester: CSE(AI&ML) / CSE(DS)

Course Code	Category	Hours / Week			Credits	Maximum Marks		
AITC09	**Core**	**L**	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
		3	0	0	3	30	70	100

Contact Classes: 45	Tutorial Classes: Nil	Practical Classes: Nil	Total Classes: 45

Prerequisite: There is no prerequisite to take this course

I. COURSE OVERVIEW:

This course introduces students to create concurrently a web app and a native app (for Android and iOS) with React Native and React Native Web. It covers HTML5 for structuring and presenting content on the World Wide Web. CSS3 being used to format structured content. To create a dynamic and interactive experience for the user it covers JAVASCRIPT. How build the applications using React concepts such as JSX, REDUX.

II. COURSE OBJECTIVES:

The students will try to learn:
I.   The characteristics, systematic methods, model for developing web applications.
II.   The fundamentals of HTML and CSS to design static and dynamic web pages.
III. The concepts of client - server programming with JavaScript, Servlets, JSX.
IV.   The MVC architecture, about React and built single and multiple page applications using REACT with REDUX.

III. COURSE OUTCOMES

After successful completion of the course, students should be able to:

CO 1	**Summarize** HTML elements and attributes for structuring and presenting content of webpage based on the user equirement.	Understand
CO 2	**Make use of** CSS properties for formatting webpages.	Apply
CO 3	**Develop** responsive webpage using Bootstrap for viewing webpages in various devices	Apply
CO 4	**Utilize** the concepts of JS with event actions for displayinginformation on WebPages.	Apply
CO 5	**Identify** UI binding library elements for deploying a reusablecomplex UI.	Apply
CO 6	**Develop** a native web application with the help of Reactframework.	Apply

IV. COUSRSE SYLLABUS:

MODULE – I: INTRODUCTION TO WEB APPLICATION AND HYPERTEXT MODELLING (10)

Introduction to web application, Basics of hypertext modelling, hypertext structure modelling concepts, access modelling concepts, relation to content modelling, presentation modelling, relation to hypertext modelling, customization modelling, relation to content, hypertext, and presentation modelling. Basics of HTML5 and web design, creating tables, HTML forms, styles and classes to your web pages, web page layouts with CSS, introduction to responsive web design with CSS3 and HTML5.

MODULE – II: BUILD INTERFCAES USING BOOTSTARP (08)

Introduction to web design from an evolutionary perspective, user interface design through bootstrap, containers, tables, jumptrons, list, cards, carousal, navigation, modals, flex and forms, responsive web page design, basic UI grid structure.

MODULE – III: INTERACTIVE USER INFERFACE AND WEB APPLICATION DEVELOPMENT (10)

JavaScript variable naming rules, data types, expressions and operators, pattern matching with regular expressions, managing web page styles using JavaScript and CSS, script forms, introduction to AJAX.

Introduction to web design from an evolutionary perspective, create a native and web app, JSX, class and function components, props, state, lifecycle methods, and hooks.

MODULE – IV:UI BINDING LIBRARY FOR REACT   (09)

Introduction to client-side routing using React Router, global state management and transitions using REDUX, server side rendering and testing using Jest, Enzyme and more. Web Development Using REACT is delivered both in a blended learning and self-paced mode.

MODULE – V: CONNECT TO AN EXTERNAL API (08)
REDUX store using the official create store function, REDUX toolkit has a configure store API, loading state for that particular API, adding an API service as a middleware, example uses create REACT App.

V. TEXT BOOKS:
1. AlokRanjanAbhilashaSinha, RanjitBattewad, "JavaScript for Modern Web Development: Building a Web Application Using HTML, CSS, and JavaScript", 1st Edition, 2020.
2. Alex Banks and Eve Porcello, "Learning React: Functional Web Development with React and Redux", 2017.

VI. REFERENCE BOOKS:
1. Adam BoduchandRoy Derks, "React and React Native: A complete hands-on guide to modern web and mobile development with React.js", 3rd Edition, 2020.
2. W Hans Bergsten, "Java Server Pages", O'Reilly, 3rd Edition, 2003.
3. D. Flanagan, "Java Script", O'Reilly, 6th Edition, 2011.
4. Jon Duckett, "Beginning Web Programming", WROX, 2nd Edition, 2008.

VII. WEB REFERENCES:
1. https://www.codecademy.com/learn/paths/web-development/
2. https://nptel.ac.in/courses/106/105/106105084/
3. https://medium.com/@aureliomerenda/create-a-native-web-app-with-react-native-web-419acac86b82
4. https://www.coursera.org/learn/react-native
5. https://desirecourse.net/react-native-and-redux-course-using-hooks/