

## WEB APPLICATION DEVELOPMENT

<b>IV Semester: CSE(AI &amp; ML)</b>								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
<b>AITC10</b>	<b>Core</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>	<b>CIA</b>	<b>SEE</b>	<b>Total</b>
		3	0	0	3	30	70	100
<b>Contact Classes: 45</b>		<b>Tutorial Classes: Nil</b>		<b>Practical Classes: Nil</b>			<b>Total Classes: 45</b>	
<b>Prerequisites: No Prerequisites</b>								
<p><b>I. COURSE OVERVIEW:</b>            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.</p> <p><b>II. COURSE OBJECTIVES:</b>  <b>The students will try to learn:</b></p> <ol style="list-style-type: none"> <li>I. The characteristics, systematic methods, model for developing web applications.</li> <li>II. The fundamentals of HTML and CSS to design static and dynamic web pages.</li> <li>III. The concepts of client - server programming with JavaScript, Servlets, JSX.</li> <li>IV. The MVC architecture, about React and built single and multiple page applications using REACT with REDUX.</li> </ol> <p><b>III. SYLLABUS:</b>  <b>MODULE – I: INTRODUCTION TO WEB APPLICATION AND HYPERTEXT MODELLING</b>            Introduction to web application, Basics of hypertext modeling, hypertext structure modeling concepts, access modeling concepts, relation to content modeling, presentation modeling, relation to hypertext modeling, customization modeling, relation to content, hypertext, and presentation modeling. 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.</p> <p><b>MODULE – II: BUILD INTERFACES USING BOOTSTRAP</b>            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.</p> <p><b>MODULE – III: INTERACTIVE USER INTERFACE AND WEB APPLICATION DEVELOPMENT</b>            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.</p> <p>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.</p> <p><b>MODULE – IV: UI BINDING LIBRARY FOR REACT</b>            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.</p> <p><b>MODULE – V: CONNECT TO AN EXTERNAL API</b>            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.</p>								
<p><b>IV. TEXT BOOKS:</b></p> <ol style="list-style-type: none"> <li>1. Alok Ranjan Abhilasha Sinha, Ranjit Battewad, “JavaScript for Modern Web Development: Building a Web Application Using HTML, CSS, and JavaScript”, 1<sup>st</sup> Edition, 2020.</li> <li>2. Alex Banks and Eve Porcello, “Learning React: Functional Web Development with React and Redux”, 2017.</li> </ol>								

#### **V. REFERENCE BOOKS:**

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

#### **VI. 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/>