FSMR2	REACT JS	L	T	P	C	Int	Ext
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COURSE OBJECTIVES:

1. Basics of JavaScript used in React and functional programming with JavaScript.
2. Develop applications by using JSX and state management.
3. Demonstrate modern web applications by using enhanced components with hooks.
4. React Router and leverage its features to handle routing on the client and server.

COURSE OUTCOMES:

After successful completion of the course, the students are able to

1. Summarize the ES6 features and implement functional techniques with JavaScript.
2. Design and develop React applications with JSX and state management.
3. Create modern data driven React web application by using enhanced components with hooks.
4. Design and implement client server applications by using React Router.

UNIT I [CO:1] **(12)**

Introducing React: Old School Multi-Page Design, New School Single-Page Apps, Meet React - Automatic UI State Management, Lightning-fast DOM Manipulation, APIs to Create Truly Composable UIs, Visuals Defined Entirely in JavaScript, Just the V in an MVC Architecture, Reacts Past and Future.

JavaScript for React: Declaring Variables, Creating Functions, Compiling JavaScript, Objects and Arrays, Asynchronous JavaScript, Classes, ES6 Modules.

Functional Programming with JavaScript: Imperative versus Declarative, Functional Concepts - Immutability, Pure Functions, Data Transformations, Higher-Order Functions, Recursion, Composition, Putting It All Together.

UNIT II [CO:2] **(12)**

How React Works: Page Setup, React Elements, React DOM, React Components.

React with JSX: React Elements as JSX, Babel, Recipes as JSX, React Fragments, Intro to webpack.

React State Management: Building a Star Rating Component, The useState Hook, Refactoring for Advanced Reusability, State in Component Trees, Building Forms, React Context.

UNIT III [CO:3] **(12)**

Enhancing Components with Hooks: Introducing useEffect, The Dependency Array, Deep Checking Dependencies, When to useLayoutEffect, Rules to Follow with Hooks, Improving Code with useReducer, useReducer to Handle Complex State, Improving Component Performance, shouldComponentUpdate and PureComponent, When to Refactor.

Incorporating Data: Requesting Data, Render Props, Virtualized Lists, Introducing GraphQL.

Suspense: ErrorBoundaries, Code Splitting.

UNIT IV [CO:4] **(12)**

React Router: Incorporating the Router, Router Properties, Using Redirects.

React and the Server: Isomorphic Versus Universal, Server Rendering React,Server Rendering with Next.js, Gatsby, React in the Future.

LEARNING RESOURCES:

TEXT BOOK:

Learning React: Modern Patterns for Developing React Apps by Alex Banks and Eve Porcello, 2nd Edition, Published by O Reilly.

REFERENCE BOOK(s):

1. Learning React: A Hands-On Guide to Building Web Applications Using React and Redux by Kirupa Chinnathambi, Second edition, Addison-Wesley Professional.
2. Fullstack React: The Complete Guide to ReactJS and Friends by AnthonyAccomazzo, Nate Murray, Ari Lerner, Clay Allsopp, David Gutman, and Tyler McGinnis.

WEB RESOURCES:

1. https://reactjs.org/
2. https://www.geeksforgeeks.org/reactjs-tutorials/
3. www.w3schools.com
4. www.tutorialspot.com