

## Front End Framework using Angular and React

**Course Code:** 21CSDE15

**Credits:** 03

**L: T: P:** 3:0:0

**Contact Hours:** 45

**Prerequisite(s):** Web Technology

**CA: UE:** 50:50

### Course Objectives

*The objective of this course is to*

1. Comprehend the basics of the react concepts methods, props and hooks
2. Expose to the basic tools and node framework used in Web publishing
3. Introduce frameworks for developing server-side rendering.
4. Practice server-side programming
5. Design and development of pure dynamic web-applications using MYSQL

### Course Outcomes

*At the end of the course, students will be able to*

Course Outcomes	Description	Bloom's Taxonomy Level
CO1	<b>Implement</b> methods in React using states and props.	Applying (3)
CO2	<b>Illustrate</b> various React features including Components and forms.	Understanding(2)
CO3	<b>Implement</b> a functional front end web application using React.	Applying (3)
CO4	<b>Implement</b> React hooks for designing responsive React Applications.	Applying (3)
CO5	<b>Illustrate</b> refs to design the architecture for React-Refs Application.	Understanding(2)
CO6	<b>Demonstrate</b> complex user application using ReactCode.	Understanding (2)

## **Course Contents**

### **Module1: React Basics**

**[9 hours]**

React Basics: Introduction to JSX, Babel, Virtual DOM, React DOM, List, Forms, Keys, Rendering Elements, Conditioning Rendering.

### **Module2 Methods:**

**[9 hours]**

Introduction to Methods, Methods as Props, Prop Types, Props – Set 1, Props – Set2, Unidirectional Data Flow, State in React, State vs props, Implementing State & Lifecycle..

### **Module3 : Basic Component**

**[9 hours]**

Basic Components: Introduction to Components – Set 2, Pure Components, Functional Components, Lifecycle of Components, Functional Components vs Class Components, Presentational vs container components, ReactJS Anchor Component, Back Top Component, Config Provider Component, Alert Component, Drawer Component, Message Component, Modal Component, Notification Component, Pop confirm Component, Progress Component, Result Component, Skeleton Component, Spin Component.

### **Module 4: Introduction to Hooks**

**[9 hours]**

Hooks: Introduction to React Hooks, Custom Hooks, useContextHook, use Effect Hook, use Reducer Hook, useRef Hook, use State Hook, useLayoutEffect Hook, use Memo Hook, Advanced Components: Data Display Component, Data Entry Component, Navigation Component, Component Complete, General Component, Result Component, Typography Component, Statistical Component.

### **Module-5: ReactCode:**

**[9 hours]**

React Code-Splitting, React Context, React Fragments, React JSX In Depth, React refs, React Creating Refs, React JS Functional Components, React JS DOM, React JS Virtual DOM, React.js Uncontrolled Vs Controlled Inputs, Lifting State up in React JS

### **Books:**

[1] **Fullstack React:** The Complete Guide to ReactJS and Friends (2017)

[2] The Road to React: Your journey to master plain yet pragmatic React.js (2023).