

# Beginner to React JS Development

**Course Duration: 40 Hours**

**Course code: BRJSD**

## 1. Course Overview

This course is designed to provide complete beginners with a strong foundation in React.js, the most popular JavaScript library for building modern, interactive web applications. Starting from the fundamentals of React, learners will progress through components, props, state, hooks, and event handling, before moving into advanced concepts like routing, forms, and API integration. The course follows a hands-on approach, where students will build small projects along the way and a final capstone project that ties all concepts together. By the end, learners will be able to create fully functional single-page applications (SPAs) using React.js.

## 2. What you'll learn?

**By completing this course, you will be able to:**

- Understand the basics of React and how it fits into modern web development.
- Set up and configure a React development environment.
- Work with components, JSX, and props.
- Manage application state and events effectively.
- Use React hooks (useState, useEffect, etc.) for functional programming.
- Build forms, handle input, and manage validation.
- Integrate APIs and fetch data using Axios / Fetch API.
- Implement React Router for navigation in SPAs.
- Style React applications using CSS, Styled Components, and frameworks.
- Develop and deploy a complete React project.

## 3. Target Audience

- Beginners with little to no experience in React.js.

- Frontend developers looking to transition into React-based development.
- Students, professionals, and aspiring web developers aiming to build modern web applications.

## 4. Pre-Requisites

### Familiarity with:

- HTML, CSS, and JavaScript fundamentals
- ES6+ features (arrow functions, destructuring, modules, etc.)

## 5. Course content

### Day 1: HTML5 & CSS Fundamentals

#### HTML Basics & HTML5 Features

- Introduction to Front-End Development
- Installing Developer Tools
- Creating the First HTML File
- Text, List, Image, and Link Tags
- Tables and Basic Forms
- HTML5 Semantic Tags
- Adding Media and Intro to Web APIs

#### CSS Fundamentals

- Introduction to CSS
- Properties & Selectors
- External, Internal, and Inline Styles
- Fonts, Colors, Text, and Backgrounds
- Box Model, Borders, Margins, Padding

#### Advanced CSS Techniques

- Position, Float, Display
- CSS Pseudo-classes and Pseudo-elements

- CSS Combinators
- CSS Image Gallery, Sprites, Opacity
- Media Queries for Responsiveness

### **Hands-on Lab**

- Build a responsive landing page using HTML5 and CSS3

## **Day 2: JavaScript Essentials & Forms**

### **JavaScript Basics**

- Variables (Local vs Global), Data Types
- Operators and Control Statements
- Functions and Scope
- JavaScript Objects (Array, String, Date, Math)

### **DOM and Events**

- DOM Basics and getElement Methods
- innerHTML vs innerText
- Events: addEventListener, onClick, dblclick, onLoad
- Functions: Declarations vs Expressions, Closures, this

### **Forms & Validations**

- Creating and Validating Forms
- Text Fields, Select Boxes
- Adding/Removing Options
- Form Serialization & Rich Text Interactions

### **ES6+ features and Hands-on Lab**

- De-structuring, template literals
- Spread/rest operators, map(), & filter()
- Create a dynamic form with validations and JavaScript DOM manipulation

## **Day 3: Introduction to React & JSX**

### **React Setup & Hello World**

- Why React? Problems it Solves
- Setting up with Create React App
- JSX: Syntax, Usage of JSX
- First Functional & Class Components

### **Props, State & Events**

- Props & State Basics
- Functional vs Class Components
- React Event Handling & Synthetic Events

### **Parent-Child Communication**

- Children Components
- Props Drilling
- Parent to Child and Vice Versa Communication

### **Hands-on Lab**

- Build a simple profile component with props, state, and event handling

## **Day 4: Component Lifecycle & Lists**

### **Component Lifecycle**

- Mounting, Updating, Unmounting
- useEffect, useState, useRef
- Error handling and error boundaries

### **Working with Lists**

- Rendering Lists with map
- Using key Property

- Conditional Rendering

### **Forms in React**

- Controlled vs Uncontrolled Components
- Form State Management
- Extracting Form Data

### **Hands-on Lab**

- Build a contact form component with validations and error handling

## **Day 5: Routing and Final Integration**

### **React Routing Basics**

- What is Routing and Why?
- Using react-router-dom
- Tying Components to URLs

### **Dynamic Routing & URL Parameters**

- Nested Routes
- Passing Parameters in URL
- Navigation using Link, useNavigate

### **Capstone Lab**

- Build a mini single-page app with routing, forms, and component communication (e.g., Product Catalog or Blog)