



III-II CICT - Technical Training Syllabus AY : 2025 -26

Training Partner : Codenow Academy Pvt. Ltd

React.js Professional Training Program

Total Duration: 36 Hours

Session Duration: 3 Hours

Total Sessions: 12

Module 1: JavaScript Revision (6 Hours / 2 Sessions)

Objective: Strengthen JavaScript fundamentals essential for React development.

Session 1 (3 Hours) — Core JavaScript Essentials

Topics Covered:

- Variables (let, const, var) and Scope
- Functions and Arrow Functions
- Arrays, Objects, and Iteration Methods (map, filter, reduce)
- String Manipulation & Template Literals
- Conditional Logic & Loop Structures

Practical Activity:

Develop a **Student Record System** using arrays and objects to add, list, and filter student data.

Session 2 (3 Hours) — Modern ES6+ and Asynchronous JavaScript

Topics Covered:

- Destructuring & Spread Operators
- Import/Export Modules
- Promises, async/await, and Error Handling
- Fetch API (GET, POST)
- DOM vs Virtual DOM Overview

Practical Activity:

Create a **Data Fetcher App** using Fetch API to display dummy data from jsonplaceholder.typicode.com in a styled table.

Module 2: React.js Development (30 Hours / 10 Sessions)

Objective: Gain hands-on experience in building scalable, component-driven, single-page applications using React.

Session 3 (3 Hours) — Introduction to React

Topics Covered:

- Understanding React and Its Ecosystem
- Virtual DOM & Component-Based Architecture
- Creating a React Project (Vite / CRA)
- JSX Syntax and Best Practices
- Functional Components & Props

Mini Project:

Build a **Profile Card Component** displaying dynamic user data via props.

Session 4 (3 Hours) — State and Events

Topics Covered:

- Managing Local State with `useState()`
- Handling Events in React
- Conditional Rendering
- Rendering Lists and Using Keys

Mini Project:

Build a **To-Do List Application** with Add, Delete, and Complete functionalities.

Session 5 (3 Hours) — Forms and User Input

Topics Covered:

- Controlled Components
- Handling Multiple Inputs
- Real-time Validation Techniques
- Two-Way Data Binding

Mini Project:

Develop a **User Registration Form** with field validations and submission alerts.

Session 6 (3 Hours) — Component Communication

Topics Covered:

- Passing Data from Parent to Child (Props)
- Child to Parent (Callback Functions)

- Lifting State Up
- Understanding Prop Drilling

Mini Project:

Build a **Shopping Cart Component** where total price updates dynamically as child components interact.

Session 7 (3 Hours) — Lifecycle and Effects

Topics Covered:

- Side Effects using `useEffect()`
- Fetching Data from APIs
- Cleanup Functions
- Dependency Arrays and Optimization

Mini Project:

Create a **Weather Information App** fetching live data from a public weather API.

Session 8 (3 Hours) — React Routing

Topics Covered:

- React Router DOM Setup
- `<BrowserRouter>`, `<Routes>`, `<Route>` Components
- Navigation with `useNavigate()` and `useParams()`
- Nested and Dynamic Routes

Mini Project:

Build a **Multi-Page Application** with navigation links for Home, About, and Contact pages.

Session 9 (3 Hours) — Context API and State Management

Topics Covered:

- Global State with Context API
- Creating and Using Contexts
- `useContext()` Hook Implementation
- Avoiding Prop Drilling

Mini Project:

Upgrade the **Shopping Cart** app using Context API for global state management.

Session 10 (3 Hours) — Styling and Responsive Design

Topics Covered:

- Inline, Internal, and External CSS in React
- CSS Modules and Scoped Styling

- Integrating Tailwind CSS / Bootstrap
- Responsive Layout Design

Mini Project:

Design a **Responsive Dashboard Layout** using Tailwind CSS or Bootstrap components.

Session 11 (3 Hours) — API Integration and Backend Communication

Topics Covered:

- Fetching Data from Node.js or JSON Server APIs
- POST and PUT Requests with Axios
- Loading States, Error Handling, and Response Management
- Best Practices for API Integration

Mini Project:

Connect the **User Registration Form** to a mock Node.js backend to post and retrieve data.

Session 12 (3 Hours) — Final Project & Deployment

Topics Covered:

- Structuring a Scalable React Project
- Environment Variables (.env)
- Building for Production
- Deployment on Netlify / Hostinger
- Code Walkthrough and Presentation

Activity:

Final Project Presentation and Evaluation

Major Projects

Project 1: React To-Do Manager (After Session 7)

Duration: 6 Hours

Key Features:

- Add, Edit, Delete, and Complete Tasks
- Persistent Data using Local Storage
- useState, useEffect, and useContext Integration
- Responsive Design

Learning Outcome:

Understand React Hooks and local state management through a real-world productivity application.

Project 2: User Management Dashboard (After Session 12)

Duration: 9 Hours

Key Features:

- Multi-Page Routing (Home, Add User, View User)
- Context API for Global State Management
- CRUD Operations with REST APIs
- Tailwind / Bootstrap UI Integration
- Deployment on Netlify or Hostinger

Learning Outcome:

Full-stack integration of React frontend with backend APIs, covering state, routing, and deployment workflows.

Training Summary

Phase	Hours	Sessions	Focus Area
JavaScript Revision	6	2	ES6+, Async JS, Fetch API
React Fundamentals	15	5	Components, Hooks, State
React Advanced	15	5	Routing, Context API, Integration
Total	36 Hours	12 Sessions	2 Major Projects

Final Deliverables

- Two fully functional React Projects
- GitHub-hosted code repositories
- Deployed application on Netlify/Hostinger