



Codevensiva Academy

Modern React.js with AI-Assisted Development

Program

Detailed Course Syllabus

Duration: 2 Months (8 Weeks)

Mode: Online Training

Level: Beginner → Advanced → Industry Ready

1. Course Overview

This React.js training program is designed to transform beginners into industry-ready frontend developers. The curriculum starts with strong JavaScript and React fundamentals, gradually progressing to advanced React, real-world projects, API integration, state management, performance optimization, deployment, and AI-assisted development workflows.

2. Learning Objectives

- Build a strong foundation in React.js and JavaScript
- Understand React architecture and component-based development
- Build scalable, reusable, production-ready applications
- Learn API integration and real-time data handling
- Understand state management with Redux Toolkit
- Work with Material UI and responsive design
- Use AI tools to improve productivity in frontend development
- Build real-world React applications and portfolio projects
- Prepare for frontend interviews and real-world development

3. Who Should Join?

- Students preparing for software development careers
- Frontend developers upgrading to React.js
- Working professionals transitioning into frontend development
- JavaScript developers learning modern UI development

- Developers interested in AI-assisted frontend development

4. Prerequisites

- Basic understanding of HTML and CSS
- Basic JavaScript knowledge preferred
- Interest in frontend development

5. Detailed Curriculum

Week 1 — JavaScript Foundation for React

- Variables, Data Types, Operators, Conditions, Loops
- Functions, Scope, Hoisting, Closures
- Objects & Arrays in depth
- ES6+: let, const, arrow functions, template literals, destructuring
- Spread & Rest Operators
- Array Methods: map(), filter(), reduce()
- Promises, Async/Await, Fetch API
- Local Storage & Session Storage
- Mini JavaScript practical assignments

Week 2 — React Fundamentals

- Introduction to React and React Ecosystem
- Single Page Application (SPA) architecture
- Virtual DOM vs Original DOM
- Node.js basics and npm
- Project setup using Vite (Industry Standard)
- JSX in depth
- Functional Components
- Props and State
- Event Handling in React
- Mini Projects: Counter App, Dynamic Greeting App

Week 3 — React Hooks & Forms

- useState, useEffect, useRef
- useMemo, useCallback, useContext
- Conditional Rendering
- Lists & Keys
- Component Communication
- Controlled Forms
- Form Validation

- Projects: Todo App, Registration Form, Expense Tracker

Week 4 — API Integration & Routing

- REST APIs
- Fetch API & Axios
- Loading and Error Handling
- CRUD Operations
- React Router DOM
- Route Parameters
- Protected Routes
- JWT Authentication Basics
- Projects: Product Listing App, Movie Search App

Week 5 — Advanced React & Industry Practices

- Reusable Components
- Feature-based folder structure
- Performance Optimization
- React.memo
- Lazy Loading & Code Splitting
- Redux Toolkit Introduction
- RTK Query Basics
- Material UI
- Responsive UI

Week 6 — AI-Assisted React Development

- Introduction to AI for Developers
- Prompt Engineering Basics
- Using ChatGPT for Development
- Cursor AI for React
- GitHub Copilot
- AI-assisted debugging
- Generating components with AI
- AI-powered documentation
- Intro to OpenAI APIs

Week 7 — Real Industry Projects

- Expense Tracker Application
- E-Commerce Frontend
- LMS UI Project
- Reusable architecture
- API integration
- Responsive UI implementation

Week 8 — Deployment & Career Preparation

- Deployment on Vercel
- Deployment on Netlify
- Git & GitHub workflow
- Debugging with React DevTools
- Interview preparation
- Resume building
- LinkedIn & portfolio guidance

6. Industry Tools Covered

- React DevTools
- Material UI
- Google Maps Integration
- Toast Notifications
- GitHub
- Cursor AI
- ChatGPT
- GitHub Copilot

7. Capstone Project

Students will build a production-level React application including Authentication, APIs, State Management, Reusable Components, Responsive UI, Deployment, and AI integration concepts.

8. Why Learn React at Codevensiva Academy?

- Industry-Oriented Curriculum
- AI-Assisted Frontend Development
- Real-World Projects
- Live Mentor-Led Sessions
- Hands-On Practical Learning
- Portfolio Building
- Interview Preparation