

# Course 8: Advanced React Patterns

## ■ Overview

Patterns for reusable, accessible, and performant components.

## ■ Prerequisites

- React Mastery

## ■ Outcomes

Implement HOCs, render props, compound APIs, custom hooks, Suspense.

## ■ Benefits

This course enables learners to move beyond basic React usage and master advanced design patterns that make components reusable, composable, and highly maintainable. Students will gain expertise in render props, higher-order components, and compound component APIs using Context. They will build scalable custom hooks with proper architecture, handle controlled vs uncontrolled input flows, and colocate state effectively. Emphasis is placed on real-world problem solving with error boundaries, recovery UIs, and React Suspense for data-fetching. Learners will also explore performance profiling, memoization strategies, and accessibility testing. By the end of the course, participants will be able to deliver robust, accessible, and production-ready React applications following industry-grade patterns.

## ■ Training Key Features

- Master render props and HOC trade-offs
- Build compound component APIs with Context
- Architect reusable custom hooks (interactors/services)
- Handle controlled vs uncontrolled inputs with refs
- Apply state colocation and derived state principles
- Implement error boundaries and recovery UIs
- Use React Suspense & lazy loading for modern data fetching
- Invert control with context module functions
- Profile performance with React Profiler and memo strategies
- Apply accessibility best practices and testing with axe

## ■ Module Breakdown

- Module 1 – Render Props & HOCs ::: trade-offs && composition patterns
- Module 2 – Compound Components ::: Context-based APIs && reusable design
- Module 3 – Custom Hooks ::: architecture && interactors && services
- Module 4 – Inputs ::: controlled vs uncontrolled && refs usage
- Module 5 – State Management ::: colocation && derived state rules
- Module 6 – Error Handling ::: error boundaries && recovery UIs

- Module 7 – Suspense & Lazy Loading ::: data fetching integration && modern patterns
- Module 8 – Context Module Functions ::: inversion of control && advanced context usage
- Module 9 – Performance ::: React Profiler && memo strategies && optimization
- Module 10 – Accessibility ::: A11y best practices && axe testing