Course : React JS, developing web applications

Practical course - 3d - 21h00 - Ref. AJB
Price : 1830 € E.T.

NEW

This course is aimed at developers, architects and project managers wishing to master the development of modern, high-performance user interfaces with ReactJS. This training program is intended for employees of professional branches covered by the OPCO Atlas.

🎯 Teaching objectives

At the end of the training, the participant will be able to:

- ✅ Understand the key concepts of ReactJS and its specific features
- ✅ Create functional components
- ✅ Mastering JSX syntax
- ✅ Using Flux and managing bugs
- ✅ Test your development

Intended audience
For OPCO Atlas members: developers, architects, project managers.

Prerequisites
Practical knowledge of web development, mastery and practice of JavaScript.

Practical details
Teaching methods
To optimize the learning experience, e-learning modules can be provided before and after the classroom session or virtual class, at the participant's request.

Course schedule

1   JavaScript, learning the basics - Pre-training digital learning content

- Introduction.
- Basic language.
- Script execution.
- JavaScript objects and callbacks.
- DOM manipulation.

Digital activities

This online course teaches the essential basics of JavaScript, such as functions, conditions and loops, so you can develop your first applications independently. Participants will put their knowledge into practice by creating a task management application (ToDoList), and will be ready to tackle frameworks such as AngularJS or Node.js.

2   React, advanced features of the front-end development framework - Pre-training digital learning content

- Introduction.
- Component life cycle.
- Refs, fragments and propTypes.
- React Hooks.

Digital activities

This online training course provides in-depth knowledge of React, enabling participants to exploit its full potential in front-end development. After setting up the environment, participants will study the component lifecycle, references, fragments and propTypes. They will then discover Hooks, a key feature that enriches functional components. Each notion will be illustrated by concrete demonstrations.

3   Introduction to React and the JavaScript ecosystem

- Modern JavaScript ecosystem and tools.
- React fundamentals and architecture.
- JSX: syntax, operation and best practices.
- Virtual DOM and reconciliation mechanisms.
- React development tools and debugging.

Hands-on work

Set up the environment, get to grips with React and master the tools.

4   Fundamental React components

- Architecture and anatomy of React components.
- Props management and validation.
- Component composition patterns.
- Modern styling approaches.
- React event system.

Hands-on work

Create components, use styling and events, validate in test.

⑤ Condition and life cycle

- State management with useState.
- Effects and life cycle with useEffect.
- Context API for global status.
- Create custom hooks.
- State management patterns.

Hands-on work

Local state and hooks, context and global state and custom hooks.

⑥ Communication between components

- Analysis of communication patterns.
- Props drilling solutions.
- Advanced use of context.
- Composition patterns and render props.
- Complex event management.

Hands-on work

Communication patterns, advanced composition, review and optimization.

⑦ Advanced status management

- Redux architecture and fundamental principles.
- Implementation of actions and reducers.
- Configure and use middleware.
- Optimization with Redux Toolkit.
- Selectors and performance.

Hands-on work

Set up redux, actions and reducers, optimization and selectors.

⑧ Routing and navigation

- Fundamental concepts of React Router.
- Road architecture and navigation.
- Advanced parameter management.
- Protection and authentication.
- Optimized routing.

Hands-on work

Configure routing, protected routes, optimize routing.

⑨ Performance and optimization

- Memoization with React.memo and useMemo.
- Optimizing callbacks with useCallback.
- Code splitting techniques.
- Implementation of lazy loading.
- Profiling and debugging tools.

Hands-on work

Memory and optimization, advanced code splitting, profiling and analysis.

10 Testing and debugging

- Testing with Jest and React Testing Library.
- Unit and integration testing strategies.
- Mocking and data simulation.
- Advanced debugging techniques.
- Error handling with Error Boundaries.

Hands-on work
Unit testing, integration testing, debugging and Error Boundaries.

11 React Server Components

- Server component architecture.
- Differences between server and client components.
- SSR Streaming implementation.
- Data fetching strategies.
- Performance and hydration.
- Integration with Next.js.

Hands-on work
RSC architecture, data fetching and streaming, integration and testing.

12 API integration and data management

- Select and configure http clients.
- React Query architecture.
- Cache strategies and invalidation.
- Advanced error handling.
- Patterns of optimistic updates.

Hands-on work
React Query set-up, advanced patterns, testing and monitoring.

13 Deployment and CI/CD

- Build strategies and optimization.
- Multi-environment configuration.
- Setting up the CI/CD.
- Monitoring and analytics.
- Safety and best practices.

Hands-on work
Configure build, CI/CD pipeline and monitoring.

14 Final project and conclusion

- Synthesis of advanced React concepts.
- Patterns and best practices.
- Architecture and scalability.
- Resources and community.
- Developments and prospects.

Hands-on work
Project presentation, technical review, outlook and resources.

(15) React, managing web application navigation with react-router - Post-training digital learning content

- Introduction.
- Getting started with react-router.
- Application: production of a country guide.

Digital activities

This 1 hour 53-minute online training course teaches how to set up a client-side navigation system with React using the react-router library. After configuring the environment, participants will discover the essential components for creating links, managing redirects and organizing multiple pages. They will apply these notions to a concrete project, developing the navigation of a country consultation application via the restcountries.eu API.

Dates and locations

REMOTE CLASS
2026 : 31 Mar., 26 May, 13 Oct., 17 Nov.

PARIS LA DÉFENSE
2026 : 24 Mar., 19 May, 6 Oct., 3 Nov.

LILLE
2026 : 31 Mar., 26 May, 13 Oct., 17 Nov.