

## Modern Web Developer SkillJourney

# Mastering React Boot Camp (TT4195)

Hands-on React! Explore React Essentials, Best Practices, Forms, Redux, Flux, Routing, Hooks, Unit Testing, Rest & More

### Course Snapshot

- **Course: Mastering React Boot Camp (TT4195)**
- **Duration:** 5 days
- **Audience & Skill-Level:** This course is for intermediate skilled web developers **new to React** who are proficient in HTML5, CSS3 and JavaScript. This course is not for beginners.
- **Format / Hands-on:** This course combines engaging instructor-led presentations and practical demonstrations with hands-on programming exercises, challenge labs, use case exploration and engaging group activities. Student machines are required.
- **Flexible Delivery Options:** This course can be delivered for your team or organization online-live (virtual), onsite in-person, self-paced or across our immersive blended learning experience platform (LXP).
- **Public Schedule:** This course is currently available on our Public Open Enrollment Schedule.
- **Customizable:** We're flexible! This course agenda, topics, labs, hours and delivery modalities can be adjusted to target your specific training skills objectives, tools and learning goals. Please ask for details.

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### Overview

**React** revolves around the creation of dynamic, interactive, and efficient web applications. By understanding the fundamental principles of React, you'll be armed with the knowledge to craft visually appealing web interfaces and practical user experiences. This is perfect for developers eager to push their web development capabilities further and enhance their existing digital platforms or craft new web projects from scratch.

Geared for experienced web developers, our **Mastering React Boot Camp** is a five-day, comprehensive hands-on program that explores the latest features, skills and benefits React has to offer. Throughout the course you'll learn the practical real-world, foundational and core React skills required to solve the usual challenges you might face when developing modern web applications. The lab intensive course includes plenty of hands-on lab work designed to immerse you in the skills required to get you up and running with React right away.

By the end of this course, you will have built diverse projects like a time-logging app, all while getting familiarized with React's state management, event handling, and various hooks. You'll leave this course equipped with the skills to efficiently design and implement responsive web applications using React. You'll also understand the importance and role of the Virtual DOM, and the nuances of JSX. Above all, you'll be fully equipped with the confidence and skills required to efficiently design and implement responsive web applications using React.

### Learning Objectives

Our engaging instructors and mentors are highly experienced practitioners who bring years of current "on-the-job" experience into every classroom. Working in a hands-on learning environment, guided by our expert team, you'll learn how to:

- **Design and Implement Interactive Web Applications:** Harness the power of React's core principles to craft dynamic, user-centric web interfaces that respond efficiently to user interactions.
- **Integrate Advanced React Features:** Seamlessly incorporate advanced React functionalities such as state management, routing, and complex component structures into their projects, elevating the overall user experience of their applications.
- **Craft Data-Driven Applications:** Implement and manipulate Props to create applications that efficiently handle and present data, enhancing user interaction and information flow.
- **Optimize Web Performance:** Understand and leverage the benefits of the Virtual DOM, enabling faster rendering and efficient updates, resulting in smoother user experiences and reduced page load times.

If your team requires different topics or tools, additional skills or custom approach, this course may be further adjusted to accommodate. We offer additional full stack development, React, React Native, web development, design and security courses which may be blended with this course for a track that best suits your development objectives.

### Audience & Pre-Requisites

This fast-paced course is for intermediate skilled web developers **new to React** who are proficient in HTML5, CSS3 and JavaScript. This course is not for beginners.

**Take Before:** Attendees should have experience with the topics in the following courses, or should have recently attended these as a pre-requisite:

- TT4003: Introduction to HTML5 / CSS3 & JavaScript Essentials – 3 days

### Related Courses

The following is a small subset of related courses. We offer many additional courses and topics on modern web, mobile and full stack development. Please see the online catalog for a complete list of courses and learning paths.

- TT4002 Introduction to HTML5 / CSS3 - 2 days
- TT4003 Introduction to HTML5, CSS3 & JavaScript - 3 days
- TT4110 Introduction to Modern JavaScript – 3 days
- TT4165 Introduction to Angular Essentials - 3-day subset of this course
- TT4168 Mastering Angular Boot Camp - 5 days
- TT4190 Getting Started with React Essentials – 3 days
- TT4195 Mastering React Boot Camp | With Redux, Flux, Unit Testing, JSX & More – 5 days (TT4190 superset)
- TT4198 Introduction to React Native – 3 days
- TT4203 Introduction to GraphQL with React – 3 days
- TT4205 Advanced GraphQL in React – 3 days

**Next Steps / Follow-on Courses:** We offer a wide variety of follow-on courses for next-level web development, React, React Native, Full Stack and more. Please see our **Modern Web Developer / Full Stack Courses & Learning Journey Paths** for options based on your specific role and goals.

### Course Topics / Agenda

*Please note that this list of topics is based on our standard course offering, evolved from typical industry uses and trends. We will work with you to tune this course and level of coverage to target the skills you need most. Course agenda, topics and labs are subject to adjust during live delivery in response to student skill level, interests and participation.*

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| <p><b>1. Your first React Web Application</b></p> <ul style="list-style-type: none"> <li>• Setting up your development environment</li> <li>• JavaScript ES6 /ES7</li> <li>• Next.js Introduction</li> <li>• Getting started</li> </ul> <p><b>2. Functional Components</b></p> <ul style="list-style-type: none"> <li>• What's a component?</li> <li>• Functional components - Motivation behind Hooks</li> </ul> <p><b>3. Our first component</b></p> <ul style="list-style-type: none"> <li>• Building the App</li> <li>• Props - Making the App data-</li> </ul> | <p>driven</p> <ul style="list-style-type: none"> <li>• Events - Your app's first interaction with useEffect() Hook</li> <li>• State - Updating state with useState() Hook</li> </ul> <p><b>4. JSX and the Virtual DOM</b></p> <ul style="list-style-type: none"> <li>• React Uses a Virtual DOM</li> <li>• Why Not Modify the Actual DOM?</li> <li>• What is a Virtual DOM?</li> <li>• Virtual DOM Pieces</li> <li>• ReactElement</li> </ul> | <p><b>5. JSX</b></p> <ul style="list-style-type: none"> <li>• JSX Creates Elements</li> <li>• JSX Attribute Expressions</li> <li>• JSX Conditional Child Expressions</li> <li>• JSX Boolean Attributes</li> <li>• JSX Comments</li> <li>• JSX Spread Syntax</li> <li>• JSX Gotchas</li> </ul> <p><b>6. Forms</b></p> <ul style="list-style-type: none"> <li>• Forms 101</li> <li>• Text Input</li> <li>• Multiple fields</li> <li>• Validation</li> </ul> |
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**7. Routing**

- What's in a URL?
- React Router's core components
- Building the components of react-router

**8. Advanced Component Configuration with context**

- Context - Provider/Consumer
- useContext() Hook Example

**9. Unit Testing & Jest**

- Writing tests without a framework
- What is Jest?
- Using Jest
- Testing strategies for React applications
- React Testing Library

**10. Debugging React**

- Using React Developer Tools
- Using Visual Studio Code
- OPTIONAL - Using the Chrome Debugger

**11. React Custom Hooks**

- Writing and Using Custom Hooks

**12. REST**

- REST Basics
- Using fetch
- Using axios

**13. A larger Component React Application:**

- A time-logging app
- Getting started
- Breaking the app into components
- The steps for building React apps from scratch

- Step 2: Build a static version of the app
- Step 3: Determine what should be stateful
- Step 4: Determine in which component each piece of state should live
- Step 5: Hard-code initial states
- Step 6: Add inverse data flow
- Updating timers
- Deleting timers
- Adding timing functionality
- Add start and stop functionality
- Methodology review

**14. Flux and Redux Basics**

- Why Flux?
- Flux is a Design Pattern
- Flux implementations
- Redux's key ideas
- Building a counter
- The core of Redux
- The beginnings of a chat app
- Building the reducer()
- Subscribing to the store
- Connecting Redux to React

**15. Intermediate Redux**

- Building the redux store
- Representing messages as objects in state
- Introducing chat threads for the chat application
- Adding the ThreadTabs component
- Supporting threads in the reducer
- Adding another action to the reducer

**Bonus Content / Time Permitting****16. ES6 Primer**

- Prefer const and let over var
- Arrow functions
- Modules
- Object.assign()
- Template literals
- The spread operator and Rest parameters
- Enhanced object literals
- Default arguments
- Destructuring assignments

**17. Using Vite:**

- Using Vite to create the TypeScript React application
- Start it up and watch it run
- Unique features of Vite
- Why combine TypeScript and Vite?
- Benefits of using React with Vite
- Creating a Vite project
- Project structure
- Running the application
- Building a blog application
- Creating the blog data
- Creating a blog component
- Adding authentication with Okta to the application
- Performance comparison: CRA vs. Vite

**18. Legacy Class Components:**

- Class components
- Props – this.props vs props
- How Hooks Map to Component Classes
- Events – Class component lifecycle
- State – this.state object and this.setState()

**Setup Made Simple! Learning Experience Platform (LXP)**

All applicable course software, digital courseware files or course notes, labs, data sets and solutions, live coaching support channels, CodeCoach.AI anytime tutor access, and rich extended learning and post training resources are provided for you in our "easy access, single source, no install required" online remote lab and content environment. Access periods vary by course. We'll collaborate with you to ensure your team is set up and ready to go well in advance of the class. Please inquire about set up details and options for your specific course of interest.

## For More Information

For more information about our training services (instructor-led, self-paced or blended), collaborative coaching services, robust Learning Experience Platform (LXP), Career Experiences, public course schedule, partner programs, courseware licensing options or to see our complete list of course offerings, solutions and special offers, please visit us at [www.triveratech.com](http://www.triveratech.com), email [Info@triveratech.com](mailto:Info@triveratech.com) or call us toll free at **844-475-4559**. Our pricing and services are always satisfaction guaranteed.

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