# Getting Started with React Essentials Training

Duration: **3 Day**

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

React Essentials is an engaging, three-day course tailored for web developers who are new to React. This course is a perfect starting point for those looking to add this powerful JavaScript library to their skill set. React is renowned for its efficiency in building dynamic user interfaces, making it a valuable asset for any web project. By learning React, you'll be equipped to create more interactive, responsive websites, enhancing both user experience and organizational web strategies.
During the course, you'll explore essential React topics through a mix of lectures and hands-on labs.

Throughout the course, you'll dive into the essentials of React, starting with the fundamentals of building your first React web application, where you'll learn about setting up your development environment and creating your initial application. You'll also explore the intricacies of React's component-based architecture, including functional components, and understand the role of JSX in developing intuitive user interfaces. You'll also explore creating and managing web forms, along with an understanding of routing to build multi-page applications. Complementing these core topics, the course also introduces you to advanced concepts such as the Virtual DOM, state management using Hooks, and essential tools like React Router, ensuring you have a comprehensive foundation in React.

This course prioritizes a practical approach, ensuring that 50% of your time is spent in hands-on labs, solidifying your understanding through real-world application. Guided by an industry expert, you'll acquire problem-solving skills and gain confidence in applying your new knowledge immediately in your projects. By the end of the course, you will have not only a theoretical understanding of React but also practical basic experience in its application, ready to enhance your web development projects with your newfound skills.

**Who Should Attend?**

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.

## Prerequisites

In order to be successful in the course, you should have solid, current hands-on experience developing basic web applications, and be well versed in HTML5, CSS3 and JavaScript.

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## What You Will Learn

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:

- Develop and Deploy a Basic React Application: Gain basic skills in setting up a React development environment and deploying a basic React web application.
- Work with React Components and JSX: Learn to effectively use class and functional components in React, integrating JSX syntax for dynamic user interface development.
- Implement Forms and Routing in React: Acquire skills in creating and managing interactive web forms and implementing seamless navigation using React Router.
- Apply State Management and Lifecycle Methods: Understand and apply state management using the useState Hook and lifecycle methods with the useEffect Hook in React applications.

## Training Outline

1. **Your first React Web Application**
   - Setting up your development environment
   - JavaScript ES6 /ES7
   - Next.js Introduction
   - Getting started
2. **Functional Components**
   - What's a component?
   - Class components
   - Functional components - Motivation behind Hooks
   - Our first component
   - Building the App
   - Props - Making the App data-driven
   - Events - Your app's first interaction with the useEffect() Hook
   - State - Updating state with the useState() Hook
3. **JSX and the Virtual DOM**
   - React Uses a Virtual DOM
   - Why Not Modify the Actual DOM?
   - What is a Virtual DOM?
   - Virtual DOM Pieces
   - ReactElement
4. **JSX**
   - JSX Creates Elements
   - JSX Attribute Expressions
   - JSX Conditional Child Expressions
   - JSX Boolean Attributes
   - JSX Comments
   - JSX Spread Syntax
   - JSX Gotchas
5. **Forms**
   - Forms 101
   - Text Input
   - Multiple fields

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    - Validation
6. **Routing**
    - What's in a URL?
    - React Router's core components
    - Building the components of react-router
7. **Advanced Component Configuration with context**
    - Context - Provider/Consumer
    - useContext() Hook Example
8. **Unit Testing & Jest**
    - Writing tests without a framework
    - What is Jest?
    - Using Jest
    - Testing strategies for React applications
9. **Debugging React**
    - Using React Developer Tools
    - Using Visual Studio Code
    - OPTIONAL - Using the Chrome Debugger

**Bonus Content / Time Permitting**

1. **REST**
    - REST Basics
    - Using fetch
    - Using axios
2. **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