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Learning Style: Virtual Classroom

Technology:

Difficulty: Beginner

Course Duration: 3 Days

Next Course Date: **May 4, 2026**

Getting Started with React Essentials (TT4190)



About This Course:

React is one of the most in-demand tools for building fast and interactive web applications, and learning it can open the door to exciting new projects and career opportunities. In this engaging three day expert-led course, you will get hands-on

experience creating modern React applications from the ground up. You will not just follow along with examples but build real projects that help you understand why React works the way it does and how to use it effectively. You will walk away with the confidence to create polished user interfaces using tools like TailwindCSS and Material UI and apply best practices that keep your code clean and easy to maintain.

Course Objectives:

- Build modern React applications confidently using functional components and Hooks.
- Style your applications with TailwindCSS, Material UI, and styled-components to create polished user interfaces.
- Create smart, reusable forms with validation using React Hook Form, Formik, Zod, and Yup.
- Implement routing and navigation using the latest React Router tools, including dynamic routes and loader patterns.
- Connect your React apps to REST APIs using fetch and axios while handling responses and errors smoothly.
- Write meaningful unit tests and debug effectively using Vitest, React Testing Library, and React Developer Tools.

Audience:

- This introductory-level course is designed for experienced web developers who have a basic understanding of JavaScript and want to strengthen their React skills to become confident and job ready. It is a great fit for roles like front end developers, full stack developers, or software engineers who want to build modern web applications using React. The course is fast paced but welcoming, making it ideal for anyone ready to roll up their sleeves and apply what they learn through hands-on practice.
- Before attending, you should have a general comfort working with JavaScript and a basic understanding of how web applications work

Prerequisites:

This course is designed for experienced web developers who have a basic understanding of JavaScript and want to strengthen their React skills to become confident and job ready. It is a great fit for roles like front end developers, full stack developers, or software engineers who want to build modern web applications using React. The course is fast paced but welcoming, making it ideal for anyone ready to

roll up their sleeves and apply what they learn through hands-on practice.

Before attending, you should have a general comfort working with JavaScript and a basic understanding of how web applications work.

Here are three helpful skills to bring with you:

- Familiarity with JavaScript concepts like functions, arrays, and objects.
- Experience using a code editor
- A general understanding of how HTML and CSS work together to build web pages.

Course Outline:

1. Your First React Web Application

- Creating a new React project with Vite
- Understanding the project structure
- Installing necessary dependencies

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
- `ReactDOM`

4. JSX

- JSX Creates Elements
- JSX Attribute Expressions

- JSX Conditional Child Expressions
- JSX Boolean Attributes
- JSX Comments
- JSX Spread Syntax
- JSX Gotchas
- Enhance Component with TailwindCSS, Material UI, styled-components

5. Essential React Hooks

- useState
- useEffect
- useContext

6. Forms

- Forms 101
- Text Input
- Multiple fields
- Validation
- Creating reusable form components
- Controlled vs. uncontrolled components
- React Hook Form
- Formik
- Zod and Yup for Validation

7. Routing 6.30+ and 7

- Navigating and routing in a React application
- Defining routes and rendering components based on URL
- Dynamic routing and parameters
- loader, errorElement
- React Router's core components
- Building the components of react-router
- Outlet component
- Router Hooks: useNavigate, useLocation, useParams

8. Unit Testing

- Vitest + React Testing Library
- Snapshots, async testing, mocking, coverage
- Optional: JEST

9. Debugging React

- Using React Developer Tools
- Using Visual Studio Code
- Using the Chrome Debugger
- 10. REST
- REST Basics
- Using fetch

- Handling responses and errors
- Using axios

11. 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
- Modules
- Classes