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Certificate Course in Frontend Development

1: HTML, CSS & JavaScript Fundamentals

Goal: Build a solid base in web development before using React.

Topics: • HTML5 structure and semantic tags • CSS basics: selectors, box model, flexbox, grid • JavaScript: variables, functions, loops, DOM manipulation • ES6+ features: arrow functions, destructuring, spread/rest, template literals • Basic Git & GitHub usage Tools: VS Code, Chrome DevTools, GitHub

2: JavaScript in the Browser

Goal: Learn how JavaScript interacts with the DOM and events.

Topics: • DOM traversal and manipulation • Event handling and form validation • Working with localStorage / sessionStorage • Fetch API and working with JSON • Responsive design (media queries) Tools: Vanilla JS, CSS, Postman (for API testing)

3: React.js Basics

Goal: Understand core React concepts and start building components.

Topics: • Setting up React with Vite or CRA • JSX and rendering elements • Functional components & props • State and useState hook • Event handling in React • Conditional rendering and lists Tools: React.js, Vite / CRA, VS Code, npm

4: Advanced React & Project Architecture

Goal: Structure scalable React apps and handle real-world complexity.

Topics: • React Router (v6+) for routing • useEffect and lifecycle with hooks • Controlled forms and form validation • Lifting state up, prop drilling vs. context • State management with Context API / Redux • Folder structure and code splitting Tools: React Router, React Context / Redux Toolkit, ESLint, Prettier

5: API Integration, Testing & Deployment

Goal: Connect to backend APIs, test components, and deploy apps.

Topics: • Fetching data with Axios / Fetch API • Error handling and loading states • Unit testing with Jest & React Testing Library • CI/CD basics (GitHub Actions, Netlify builds) • Deployment on Netlify / Vercel / Firebase Tools: Axios, Jest, React Testing Library, Netlify / Vercel