

# Frontend Development syllabus

- **1. HTML and CSS Fundamentals (24 hours)**
  - Introduction to HTML tags and structure – 6 hours
  - Basic CSS properties and selectors – 6 hours
  - Building layouts with CSS Flexbox and Grid – 6 hours
  - Responsive design and media queries – 3 hours
  - CSS preprocessors and libraries – 3 hours
- **2. GIT (3 hours)**
  - Introduction to version control and Git concepts
  - Setting up Git and initializing a repository
  - Basic Git commands (commit, branch, merge, push, pull)
- **3. JavaScript Basics (24 hours)**
  - Variables, data types, and operators – 3 hours
  - Control flow and loops – 3 hours
  - Functions and scope – 3 hours
  - Arrays and objects – 6 hours
  - ES6+ Concepts – 3 hours
  - DOM manipulation and event handling – 6 hours
- **4. Asynchronous JavaScript & API handling (9 hours)**
  - Promises and handling asynchronous errors
  - Asynchronous JavaScript concepts (timers, AJAX)
  - Introduction to RESTful APIs
  - Making API requests with Fetch API
  - Handling JSON data
- **5. Introduction to React.js (15 hours)**
  - Understanding the concept of components – 1.5 hours
  - JSX syntax and rendering components – 1.5 hours
  - Handling props and state – 6 hours
  - Event handling in React – 3 hours
  - Conditional rendering and lists – 3 hours
- **6. React.js Intermediate Concepts (19 hours)**
  - Component lifecycle methods – 4 hours
  - React Router for client-side routing – 6 hours
  - Styling React components – 3 hours
  - Form handling and validation – 6 hours
- **7. Advanced React.js Concepts (10 hours)**
  - Context API for state management – 3 hours
  - Higher-order components (HOCs) – 1 hour
  - Advanced React hooks – 1.5 hours
  - Custom hooks – 1 hour
  - Optimizing performance with memorization – 1.5 hours
  - Error handling and error boundaries – 1 hour
  - Server components – 1 hour

- **8. State Management (10 hours)**
  - Introduction to state management libraries (e.g., Redux, MobX)
  - Setting up Redux toolkit with React
  - Actions, reducers, selectors and the store concept
  - Asynchronous data fetching with Redux
  - Redux middleware (e.g., Redux Thunk)
- **9. Advanced Topics (20 hours)**
  - Debugging and troubleshooting techniques – 3 hours
  - TypeScript – 9 hours
    - I. Configuring a TypeScript environment for React
    - II. Managing state with TypeScript in Redux
    - III. Type-safe routing with React Router and TypeScript
  - Performance optimization techniques (code splitting, lazy loading) – 1.5 hours
  - Internationalization (i18n) and localization – 1.5 hours
  - Testing React applications (unit, integrations, e2e) – 2 hours
  - Introduction to Next.js – 3 hours
- **10. Project Work (20 hours)**
  - Build a complete React application
  - Implement features and functionalities using the tools and concepts covered in the syllabus
  - Practice code organization and project structure
  - Deploy the project to a hosting platform

1 day = 3 hours

1 week = 3 day

**Total hours = 154 hours**  
**4 months + 2 weeks**