

# HTML, CSS, JS, ReactJS

## Day 1: HTML5 & CSS Fundamentals

### HTML Basics & HTML5 Features (9:00–11:00 AM)

- Introduction to Front-End Development
- Installing Developer Tools
- Creating the First HTML File
- Text, List, Image, and Link Tags
- Tables and Basic Forms
- HTML5 Semantic Tags
- Adding Media and Intro to Web APIs

### CSS Fundamentals (11:15 AM–1:00 PM)

- Introduction to CSS
- Properties & Selectors
- External, Internal, and Inline Styles
- Fonts, Colors, Text, and Backgrounds
- Box Model, Borders, Margins, Padding

### Advanced CSS Techniques (2:00–3:30 PM)

- Position, Float, Display
- CSS Pseudo-classes and Pseudo-elements
- CSS Combinators
- CSS Image Gallery, Sprites, Opacity
- Media Queries for Responsiveness

### Hands-on Lab (3:45–5:00 PM)

- Build a responsive landing page using HTML5 and CSS3

## Day 2: JavaScript Essentials & Forms

### JavaScript Basics (9:00–11:00 AM)

- Variables (Local vs Global), Data Types
- Operators and Control Statements
- Functions and Scope
- JavaScript Objects (Array, String, Date, Math)

### DOM and Events (11:15 AM–1:00 PM)

- DOM Basics and getElement Methods
- innerHTML vs innerText
- Events: addEventListener, onClick, dblclick, onLoad
- Functions: Declarations vs Expressions, Closures, this

### **Forms & Validations (2:00–3:30 PM)**

- Creating and Validating Forms
- Text Fields, Select Boxes
- Adding/Removing Options
- Form Serialization & Rich Text Interactions

### **ES6+ features and Hands-on Lab (3:45–5:00 PM)**

- De-structuring, template literals
- Spread/rest operators, map(), & filter()
- Create a dynamic form with validations and JavaScript DOM manipulation

## **Day 3: Introduction to React & JSX**

### **React Setup & Hello World (9:00–11:00 AM)**

- Why React? Problems it Solves
- Setting up with Create React App
- JSX: Syntax, Usage of JSX
- First Functional & Class Components

### **Props, State & Events (11:15 AM–1:00 PM)**

- Props & State Basics
- Functional vs Class Components
- React Event Handling & Synthetic Events

### **Parent-Child Communication (2:00–3:30 PM)**

- Children Components
- Props Drilling
- Parent to Child and Vice Versa Communication

### **Hands-on Lab (3:45–5:00 PM)**

- Build a simple profile component with props, state, and event handling

## **Day 4: Component Lifecycle & Lists**

### **Component Lifecycle (9:00–11:00 AM)**

- Mounting, Updating, Unmounting
- `useEffect`, `useState`, `useRef`
- Error handling and error boundaries

### **Working with Lists (11:15 AM–1:00 PM)**

- Rendering Lists with `map`
- Using `key` Property
- Conditional Rendering

### **Forms in React (2:00–3:30 PM)**

- Controlled vs Uncontrolled Components
- Form State Management
- Extracting Form Data

### **Hands-on Lab (3:45–5:00 PM)**

- Build a contact form component with validations and error handling

## **Day 5: Routing and Final Integration**

### **React Routing Basics (9:00–11:00 AM)**

- What is Routing and Why?
- Using `react-router-dom`
- Tying Components to URLs

### **Dynamic Routing & URL Parameters (11:15 AM–1:00 PM)**

- Nested Routes
- Passing Parameters in URL
- Navigation using `Link`, `useNavigate`

### **Capstone Lab (2:00–5:00 PM)**

- Build a mini single-page app with routing, forms, and component communication (e.g., Product Catalog or Blog)