

Frontend Development Course Syllabus

Total Duration: 180hrs

Module 1: HTML, CSS, JAVASCRIPT

Chapter 1: Introduction to Web & Frontend Development

- Understanding the Internet, HTTP, Browsers & Servers
- Client vs Server-Side
- Web Development Life Cycle
- Text Editors & IDEs: VS Code Setup
- Chrome Developer Tools Basics

Chapter 2: HTML5 – Building the Structure

- Semantic Elements and Tags
- Page Structure (Header, Footer, Nav, Main)
- Forms: Input Types, Validation Attributes
- Embedding Media: Video, Audio, Images
- Tables and Lists
- Meta Tags and SEO Basics

Chapter 3: CSS3 – Styling Web Pages

- CSS Syntax and Selectors
- Box Model: Margin, Padding, Border
- Positioning: Relative, Absolute, Fixed
- Display: Block, Inline, Flex, Grid
- Pseudo Classes and Transitions
- Media Queries for Responsive Design
- Web Fonts, Custom Fonts, Icons

Chapter 4: JavaScript Essentials

- Variables (var, let, const) & Data Types
- Operators, Conditions, Loops
- Arrays and Objects
- Functions and Scope
- DOM Manipulation (getElementById, querySelector, etc.)
- Events and Event Listeners
- Form Validation
- Local Storage and Session Storage

Chapter 5: Version Control with Git & GitHub

- Git Basics: Init, Add, Commit, Push
- GitHub Setup and Collaboration
- Branching and Merging
- Resolving Merge Conflicts
- Hosting Pages with GitHub Pages



Module 2: React JS with Real-World Projects

Chapter 6: Introduction to React.js

- Why React? Key Features and Use Cases
- JSX Syntax and Rules
- Functional Components vs Class Components
- Props and Component Communication
- useState Hook for State Management

Chapter 7: Advanced React Features

- useEffect Hook and Lifecycle Simulation
- Conditional Rendering

- List Rendering with Keys
- Handling Events and Forms in React
- Controlled vs Uncontrolled Components
- Lifting State Up
- Prop Drilling and Composition

Chapter 8: React Routing & Navigation

- Introduction to React Router
- Route, Link, Navigate Components
- Nested Routes
- URL Parameters & Query Params
- Programmatic Navigation

Chapter 9: State Management & APIs

- Context API for State Sharing
- Fetching Data from APIs using `fetch()` / `Axios`
- `useEffect` for API Calls
- Loading and Error States
- Building Dynamic UIs with API Data
- Pagination and Filtering

Chapter 10: Deployment & Optimization

- Optimizing React App (Lazy Loading, Code Splitting)
- Environment Variables in React
- Building and Deploying React App on: GitHub Pages, Netlify, Vercel.
- SEO in React (Intro to SSR & Metadata)

Optional Subjects (Choose Any 1 UI Framework)

Option A: Bootstrap (Responsive UI Toolkit)

- Grid System & Layout
- Navbar, Cards, Buttons, Alerts
- Modals, Accordions, Tabs
- Forms and Form Validation
- Utility Classes
- Integrating Bootstrap with React

Option B: Tailwind CSS (Utility-First CSS Framework)

- Tailwind Setup with React
- Utility Classes & Responsive Design
- Customizing Colors, Fonts, Breakpoints
- Reusable Components with Tailwind
- Dark Mode & Theme Switching
- Best Practices in Tailwind Projects