

MERN STACK Course Syllabus

Total Duration: 90hrs

Module 1

Chapter 1: Web Basics Refresher

1. HTML5 Semantic Tags
2. CSS3 Flexbox and Grid
3. Responsive Design Principles
4. JavaScript (ES6)

Chapter 2: React Fundamentals

1. What is React & Why Use It
2. JSX Syntax and Component Structure
3. State, Props, and Event Handling
4. useState & useEffect Hooks
5. Simple Forms and Input Handling

Chapter 3: Routing & API Integration

1. React Router DOM
2. Route Parameters and Navigation
3. Fetch and Axios for API Requests
4. Displaying Data from APIs
5. Handling Loading and Error States

Chapter 4: Frontend Mini Project

1. Build a Mini React App (e.g., To-Do List, Blog UI, or Product Catalog)

Module 2

Chapter 5: Node.js & Express Basics

1. What is Node.js

2. Setting Up Express Server
3. Creating RESTful APIs
4. JSON Responses and Route Handling
5. Using Nodemon and Environment Variables

Chapter 6: MongoDB with Mongoose

1. Setting Up MongoDB Atlas
2. Defining Mongoose Models and Schemas
3. Basic CRUD Operations
4. Input Validation with Mongoose

Chapter 7: Authentication Essentials

1. User Registration and Login with bcrypt
2. JSON Web Tokens (JWT)
3. Basic Route Protection with Middleware

Chapter 8: MERN Integration

1. Connecting React Frontend with Express Backend
2. Axios Setup and Token Handling
3. Final Minor Project: CRUD App with Auth (e.g., Contact Manager or Notes App)