

MERN Full Stack Development Course Outline

Module 1: Introduction to Full Stack Development

- 1. Understanding Full Stack Development**
 - Frontend, Backend, and Database
 - Roles and responsibilities of a full stack developer
- 2. Overview of MERN Stack**
 - MongoDB, Express.js, React.js, Node.js
 - Why choose MERN stack?

Module 2: HTML, CSS, and JavaScript

- 1. HTML Basics**
 - HTML elements and attributes
 - Forms and input elements
 - Semantic HTML
- 2. CSS Basics**
 - CSS syntax and selectors
 - Box model and layout
 - Flexbox and Grid
- 3. JavaScript Basics**
 - Variables and data types
 - Functions and control structures
 - DOM manipulation

Module 3: React.js

- 1. Introduction to React**
 - Understanding components and JSX
 - Props and State
 - Lifecycle methods
- 2. Advanced React**
 - React Hooks
 - Context API
 - Routing with React Router
- 3. State Management**
 - Introduction to Redux
 - Actions, Reducers, and Store
 - Middleware (Thunk, Saga)

Module 4: Node.js and Express.js

- 1. Introduction to Node.js**
 - Node.js fundamentals

- Modules and NPM
- Asynchronous programming
- 2. **Building RESTful APIs with Express**
 - Setting up Express server
 - Routing and middleware
 - Handling requests and responses

Module 5: MongoDB

1. **Introduction to MongoDB**
 - NoSQL databases vs. SQL databases
 - CRUD operations
 - Data modeling and schema design
2. **Integrating MongoDB with Node.js**
 - Using Mongoose for data modeling
 - Connecting to MongoDB
 - Performing database operations

Module 6: MERN Stack Integration

1. **Connecting Frontend with Backend**
 - Making API calls from React
 - Handling CORS
 - State management with API data
2. **Building Full Stack Applications**
 - User authentication and authorization
 - File uploads and processing
 - Real-time applications with WebSockets