

MERN Full Stack

Core JavaScript Programming

Master the fundamentals of JavaScript — the backbone of modern web development.

- **JavaScript Basics**
Variables, keywords, functions, operators, loops, and conditionals
 - **Data Types & Typecasting**
Numbers, strings, booleans, arrays, objects, null, undefined
 - **Functions & Scope**
Functions, closures, callbacks, recursion, ES6+ features (let, const, arrow functions)
 - **Asynchronous JavaScript**
Promises, async/await, callbacks, error handling
 - **DOM Manipulation**
Selecting and modifying DOM elements, events handling
 - **ES6+ Features**
Destructuring, modules, spread/rest operators, template literals
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Front-End Development with React.js

Build dynamic, interactive user interfaces with React.

- **React Basics**
Components, props, state, lifecycle methods
- **React Advanced Features**
Hooks (useState, useEffect), custom hooks, context API
- **Routing & Navigation**
React Router for single-page applications (SPAs)

- **Form Handling**

Controlled and uncontrolled components, form validation

- **State Management**

Context API, Redux for state management

- **Testing React Components**

Jest and React Testing Library for unit tests

Back-End Development with Node.js & Express.js

Handle server-side logic and API development with Node.js and Express.

- **Node.js Basics**

Setting up a Node.js server, handling requests/responses, middleware

- **Express.js**

Routing, HTTP methods, handling RESTful APIs

- **Authentication & Security**

JWT authentication, session management, password hashing

- **API Testing & Documentation**

Using Postman for API testing, Swagger for API documentation

- **Real-Time Communication**

WebSockets with Socket.io for real-time applications

Database with MongoDB

Store and manage data with MongoDB, the leading NoSQL database.

- **MongoDB Basics**

Installing MongoDB, CRUD operations, queries, and aggregation

- **Mongoose**

ODM for MongoDB, defining schemas, and models

- **Database Relationships**

Embedding and referencing documents, one-to-many, many-to-many relationships

Tools, Workflows & Deployment

Leverage tools to streamline development, collaboration, and deployment.

- **Git & GitHub**

Version control, branching, merging, collaboration on GitHub

- **Deployment**

Deploying MERN stack apps with platforms like Heroku, Netlify, or AWS

- **Testing & Debugging**

Unit tests with Mocha/Chai, debugging with VS Code

- **Virtual Environments & NPM**

Managing dependencies with npm/yarn

Real-Time Practice & Hands-On Experience

- **Mini Projects:** Build small apps to practice each concept

- **Capstone Project:** Develop a complete MERN stack application

- **Team Projects:** Collaborate with peers on GitHub, simulating real-world development workflows

- **Agile Development:** Work in sprints with code reviews, iterations, and testing

Ideal For

- Beginners to web development
 - Students and recent graduates seeking full-stack skills
 - Professionals wanting to switch to full-stack development
 - Freelancers aiming to build scalable web applications
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Career Support & Certification

- Industry-Recognized Course Completion Certificate
 - GitHub Portfolio Development
 - Personalized Resume & LinkedIn Profile Building
 - Mock Interviews – Technical + HR
 - Placement Assistance through Club Coder's partner network
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Let me know if you'd like to make any adjustments or need further details!