

MERN STACK DEVELOPMENT - COMPLETE SYLLABUS

Outcomes by the End of the Course

- Build full-stack web applications using MERN stack
- Develop RESTful APIs using Node.js & Express
- Design and manage MongoDB databases
- Create dynamic frontend applications using React
- Implement authentication & authorization systems
- Deploy full-stack applications to cloud platforms
- Prepare confidently for full-stack developer roles

Career Opportunities

- Full Stack Developer
- MERN Stack Developer
- Backend Developer
- Frontend Developer
- Software Engineer
- Freelance Web Developer

Foundation Module (HTML, CSS & JavaScript)

- HTML5 & Semantic Tags
- CSS3, Flexbox & Grid
- Responsive Web Design
- JavaScript Fundamentals
- ES6 Concepts
- DOM Manipulation
- Basic Project

MongoDB - Database Module

- Introduction to NoSQL
- MongoDB Installation & Setup
- CRUD Operations
- Data Modeling

- Schema Design
- Mongoose Integration
- Relationships & Population

Node.js & Express - Backend Module

- Introduction to Node.js
- npm & Project Setup
- Creating Server with Express
- Routing
- Middleware
- REST API Development
- Authentication (JWT)
- Error Handling
- MVC Architecture
- API Testing (Postman)

React - Frontend Module

- React Basics & Setup
- Components & Props
- useState & useEffect
- React Router
- API Integration
- Forms & Validation
- Context API
- State Management Basics
- Authentication Integration

Advanced MERN Concepts

- Full Stack Authentication Flow
- Role-Based Access Control
- File Uploads (Multer)
- Pagination & Search
- Performance Optimization
- Environment Variables
- Deployment (Render / Vercel / Netlify)
- Production Build Process

Real-Time Projects

- User Authentication System
- Blog Application
- E-Commerce Website
- Admin Dashboard
- Final Industry-Level Project

Additional (Job-Oriented Topics)

- Git & GitHub Workflow
- Resume & Portfolio Building
- Interview Preparation (MERN Stack)
- DSA Basics for Developers
- Mock Interviews
- Freelancing Guidance

