

MEAN Stack Development Course

Course Duration: 3 Months

The MEAN Stack Development course provides comprehensive training to build dynamic and scalable web applications using MongoDB, Express.js, Angular, and Node.js. This full-stack course covers both client-side and server-side development, API creation, and database management, preparing learners for real-world application development.

Module 1: Introduction to MEAN Stack

- Overview of Full Stack Development
- Understanding the MEAN Architecture
- Setting up the Development Environment (Node.js, npm, MongoDB, Angular CLI)
- Version Control with Git and GitHub

Module 2: Front-End Development with Angular

- Introduction to Angular and TypeScript
- Angular Components, Templates, and Data Binding
- Directives, Pipes, and Dependency Injection
- Routing and Navigation in Angular
- Reactive Forms and Validation
- HTTP Client Module for API Communication

Module 3: Back-End Development with Node.js & Express.js

- Understanding Node.js Runtime and Event Loop
- Creating RESTful APIs with Express.js
- Middleware, Routing, and Request Handling
- Authentication and Authorization with JWT
- Error Handling and Logging
- Connecting Express with MongoDB

Module 4: Database Management with MongoDB

- Introduction to NoSQL Databases
- CRUD Operations with MongoDB Shell and Compass
- Data Modeling and Schema Design using Mongoose
- Aggregation Framework and Indexing
- Connecting MongoDB to Node.js Applications

Module 5: Integration & Advanced Concepts

- Integrating Angular Front-End with Express API
- Managing Application State and Services in Angular
- Implementing Secure Authentication Workflows
- Role-Based Access Control
- Error Handling and Optimization

Module 6: Deployment & DevOps Basics

- Environment Configuration and Secrets Management
- Deploying MEAN Stack Applications on AWS / Heroku / Render
- Introduction to Docker and Containerization
- Continuous Integration/Deployment (CI/CD) Overview
- Using Git for Version Control

Module 7: Real-Time Project

- Building a Complete MEAN Stack Web Application (e.g., E-commerce / Job Portal)
- Front-End, Back-End, and Database Integration
- Testing and Debugging
- Final Project Presentation and Deployment

