

MEAN Stack (3 Months)

Duration: 3 Months (~120 Hours)

Mode: Live Online / Classroom

Role after completion: Full Stack Developer (MEAN)

Certifications prepared: MongoDB University (M001/M220), Angular Developer (academy/vendor)

Tools & Technologies: MongoDB, Mongoose, Express.js, Node.js, Angular, Angular Material, JWT, Multer, Postman, Docker (intro), Git & GitHub

Syllabus

Week 1: Backend Setup

- Node/Express project structure, middleware flows
- MongoDB schemas with Mongoose, indexing basics
- Config & secrets management
- Assignment

Week 2: REST API Layer

- CRUD APIs with validation and error patterns
- Pagination, search, filtering
- Postman tests and environments
- Assignment

Week 3: Angular Frontend Integration

- Angular services for API, interceptors for auth
- Reactive forms and reusable UI components
- Angular Material tables, dialogs, snackbars
- Assignment

Week 4: Routing & Modules

- Router navigation, guards, resolvers
- Feature/shared module design
- Lazy loading for performance
- Assignment
- Mock Interview 1

Week 5: Auth & Roles

- JWT auth, refresh tokens, interceptor wiring
- RBAC, protected routes, guard strategies
- Secure storage and logout flows

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- Assignment

Week 6: File Handling & Media

- Uploads with Multer, image preview, validation
- Serve/download documents securely
- MongoDB Atlas integration & backups
- Assignment

Week 7: Testing & Deployment

- Angular unit testing basics, component tests
- Dockerizing API, CI basics
- Deploy to cloud (Render/AWS/Heroku)
- Assignment

Week 8: Optimization & Monitoring

- Performance profiling, change detection strategy
- API performance, indexing & query plans
- Monitoring, logging, error reporting
- Assignment
- Mock Interview 2

Projects

- MEAN Ticketing/Booking System (search, book, cancel, invoices)
- MEAN LMS/Portal (courses, lessons, assessments, roles)
- MEAN Inventory/Orders (catalog, orders, dashboards)