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MEAN Stack Roadmap & Syllabus

One language — TypeScript/JavaScript — across the whole application. Angular on the frontend, Node.js and Express on the backend, and MongoDB for data.

JavaScript · TypeScript · Angular · RxJS · Node.js · Express.js · MongoDB

FRESHERS & STUDENTS	EXPERIENCED (JOB SWITCHERS)	WORKING PROFESSIONALS
5–6 months	**3 months**	**3–6 months (alongside work)**

Durations are approximate and assume about 2–3 hours of focused study a day. Move faster or slower as you need — understanding matters more than speed.

Contents: 1. Freshers & Students · 2. Experienced (Job Switchers) · 3. Working Professionals · 4. Complete Syllabus

Freshers & Students

Starting from the basics and preparing for a first developer job.

Approximate duration: 5–6 months — From web basics to a complete Angular + Node.js + MongoDB application.

1 HTML, CSS & JavaScript — 5 weeks

- Semantic HTML and responsive CSS
- JavaScript fundamentals and DOM
- Closures, async/await and the event loop

Milestone: Build a responsive multi-page site with interactive JavaScript.

2 TypeScript & Angular — 6 weeks

- TypeScript types, interfaces, generics
- Components, signals, routing
- Reactive forms and services
- HttpClient and basic RxJS

Milestone: Build an Angular app with routing, forms and API calls.

3

Node.js, Express & MongoDB

5 weeks

- REST APIs with Express
- Middleware, validation, error handling
- MongoDB with Mongoose
- JWT authentication

Milestone: Build a secure REST API backed by MongoDB.

4

Full Project & Interview Prep

4 weeks

- Connect Angular to your API end to end
- Deploy and publish on GitHub
- JavaScript, Angular and Node.js interview questions
- Mock interviews

Milestone: Demo and explain a complete MEAN application.

Projects to build

- Task manager with login and user roles
- Blog or notes platform with comments
- Simple e-commerce store with cart and admin panel

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Experienced (Job Switchers)

1–4 years of experience, preparing to switch jobs or move to a stronger role.

Approximate duration: 3 months — Deepen Angular, RxJS and Node.js to the level senior interviews expect.

1

Advanced Angular

4 weeks

- Signals vs Observables and interop
- Change detection and OnPush
- Lazy loading and performance
- State management patterns

Milestone: Explain how Angular renders and how you optimise a slow screen.

2

RxJS Mastery

2 weeks

- Choosing switchMap, mergeMap, concatMap, exhaustMap
- Combining streams
- Error handling and retries
- Sharing and caching with shareReplay

Milestone: Pick the right operator for a scenario and justify it.

3

Node.js in Depth

3 weeks

- Event loop and non-blocking I/O
- Streams and worker threads
- Security: rate limiting, CORS, input validation
- Testing APIs

Milestone: Diagnose and fix a slow or blocking Node.js endpoint.

4

MongoDB & Interview Readiness

3 weeks

- Schema design trade-offs and indexing
- Aggregation pipeline
- Scenario questions from your project
- Mock interviews with feedback

Milestone: Answer design and debugging questions with real examples.

Projects to build

- Real-time chat or notifications with WebSockets
- Analytics dashboard using MongoDB aggregation
- Refactor an Angular app to signals and OnPush

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Working Professionals

Working developers upskilling toward senior, lead or architect responsibilities.

Approximate duration: 3–6 months (alongside work) — Architect larger JavaScript applications and lead frontend and backend decisions.

1

Architecture at Scale

4–6 weeks

- Monorepos and shared libraries (Nx)
- Micro-frontends: when and when not
- API design and versioning
- Caching strategies

Milestone: Propose an architecture for a multi-team product.

2

Performance & Security

3–4 weeks

- Core Web Vitals and bundle optimisation
- SSR and hydration in Angular
- OWASP risks in Node.js apps
- Load testing

Milestone: Measurably improve load time and harden an existing app.

3

DevOps & Cloud

4 weeks

- Docker for Node.js
- CI/CD pipelines
- Managed MongoDB (Atlas) operations
- Monitoring and logging

Milestone: Ship with automated builds, tests and deployments.

4

Leadership & AI Features

Ongoing

- Code reviews and mentoring
- Technical documentation
- Adding LLM features with Node.js
- Responsible use of AI coding tools

Milestone: Lead a feature from design to release.

Projects to build

- Nx monorepo with shared UI and API libraries
- SSR Angular app with performance budget
- AI-assisted search or support assistant in a Node.js API

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Complete MEAN Stack Syllabus

Everything this track covers, grouped by topic. Use it as a checklist.

01 Web Fundamentals

- HTML5 and semantic markup
- CSS, Flexbox and Grid
- Responsive design
- How the browser and HTTP work

02 JavaScript

- Scope, closures and hoisting
- this, prototypes and classes
- Promises and async/await
- The event loop
- ES6+ features
- Array methods

03 TypeScript

- Types and interfaces
- Generics
- Union and utility types
- Modules
- Strict mode

04 Angular

- Standalone components and templates
- Signals and change detection
- Routing and lazy loading
- Reactive forms and validation
- Services and dependency injection
- HttpClient and interceptors

05 RxJS

- Observables and subscriptions
- map, filter, switchMap, mergeMap
- debounceTime and distinctUntilChanged
- Error handling with catchError
- Avoiding memory leaks

06 Node.js & Express.js

- Node.js runtime and modules
- Express routing and middleware
- REST API design
- Validation and error handling
- Environment configuration

07 MongoDB

- Documents and collections
- CRUD and query operators
- Schema design and Mongoose
- Indexes
- Aggregation pipeline

08 Auth, Testing & Deployment

- JWT authentication and password hashing
- Role-based access
- Unit testing (Jasmine/Jest)
- Git workflow
- Deploying API and Angular app

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Roles this track prepares you for

MEAN Stack Developer · Angular Developer · Node.js Developer · Full Stack Developer

Want a personal plan or interview preparation?

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Roadmaps are for learning guidance and do not guarantee jobs or placements.