Software Development

Program Brochure · 2026

MEAN STACK FULL STACK

MongoDB, Express, Angular, Node.

Intermediate

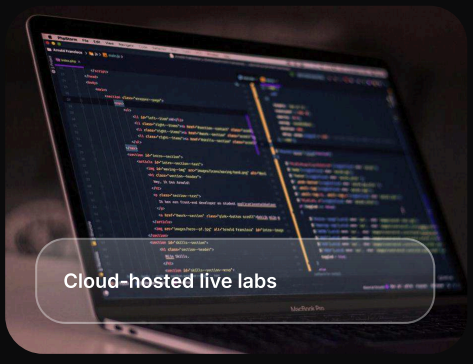
120 Hours

SAM-MEAN

Software Development

Code that ships.

18 programs in this track



8

modules · hands-on labs · capstone project

Inside this brochure

Contents

Program overview 03

Who it's for 04

Learning outcomes 05

Program runway 06

Detailed curriculum 07

Tools & frameworks 10

Projects & capstone 11

Certification & method 12

Learning path 13

FAQs 14



AT A GLANCE

Level	**Intermediate**
Duration	**120 Hours**
Modules	**8**
Certificate	**SAM-MEAN**

Program overview

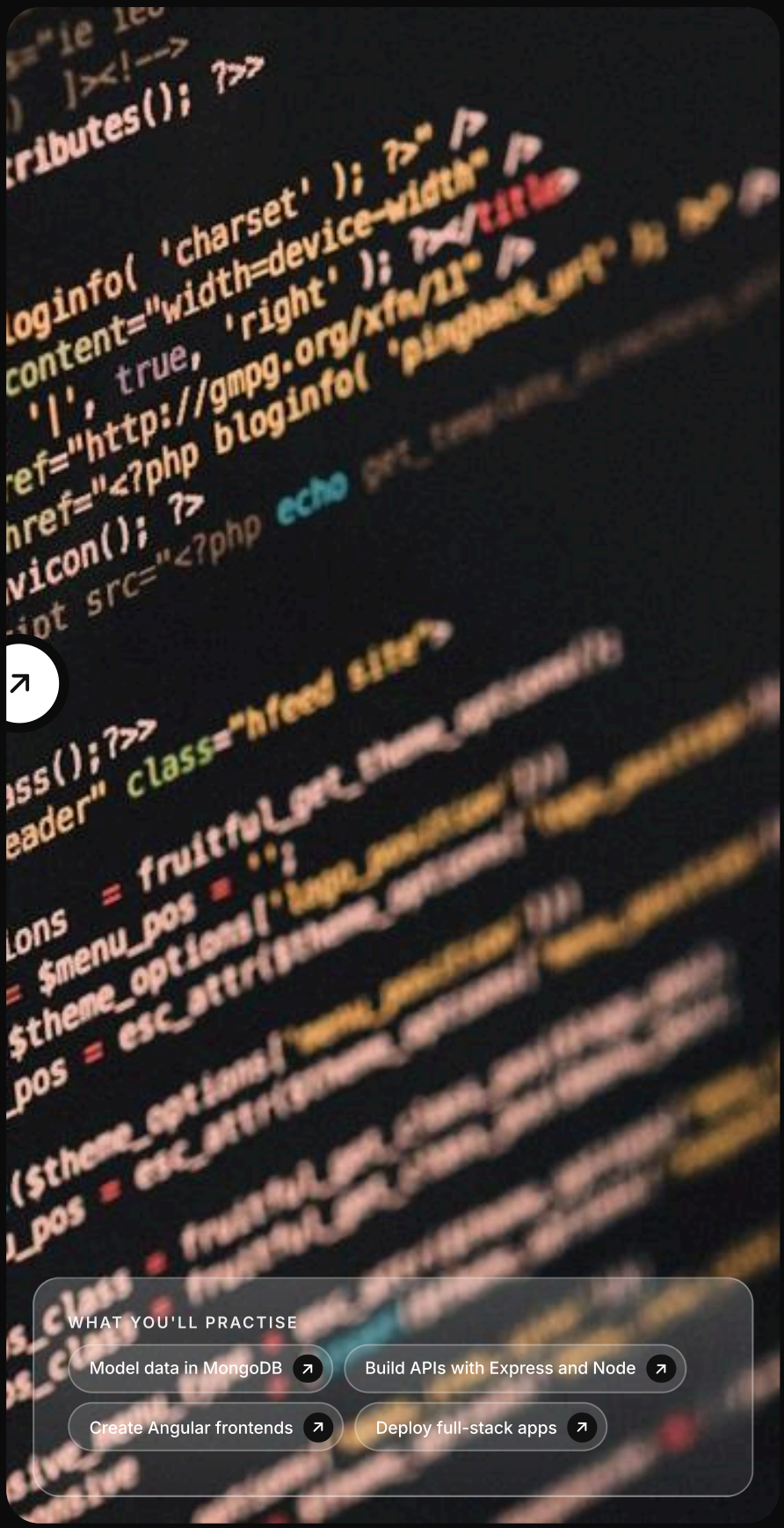
MongoDB, Express, Angular, Node.

Build complete web applications with the MEAN stack.

The MEAN stack combines MongoDB, Express, Angular and Node.js into a TypeScript-friendly, end-to-end platform well suited to structured business applications. This program teaches the full workflow: data modelling, Express APIs, authentication, modern Angular frontends with signals and RxJS, testing and deployment, so you can confidently build complete enterprise-style web applications.

DELIVERY

Instructor-led · Live virtual · Blended



WHAT YOU'LL PRACTISE

- Model data in MongoDB
- Build APIs with Express and Node
- Create Angular frontends
- Deploy full-stack apps

LEVEL

Intermediate

DURATION

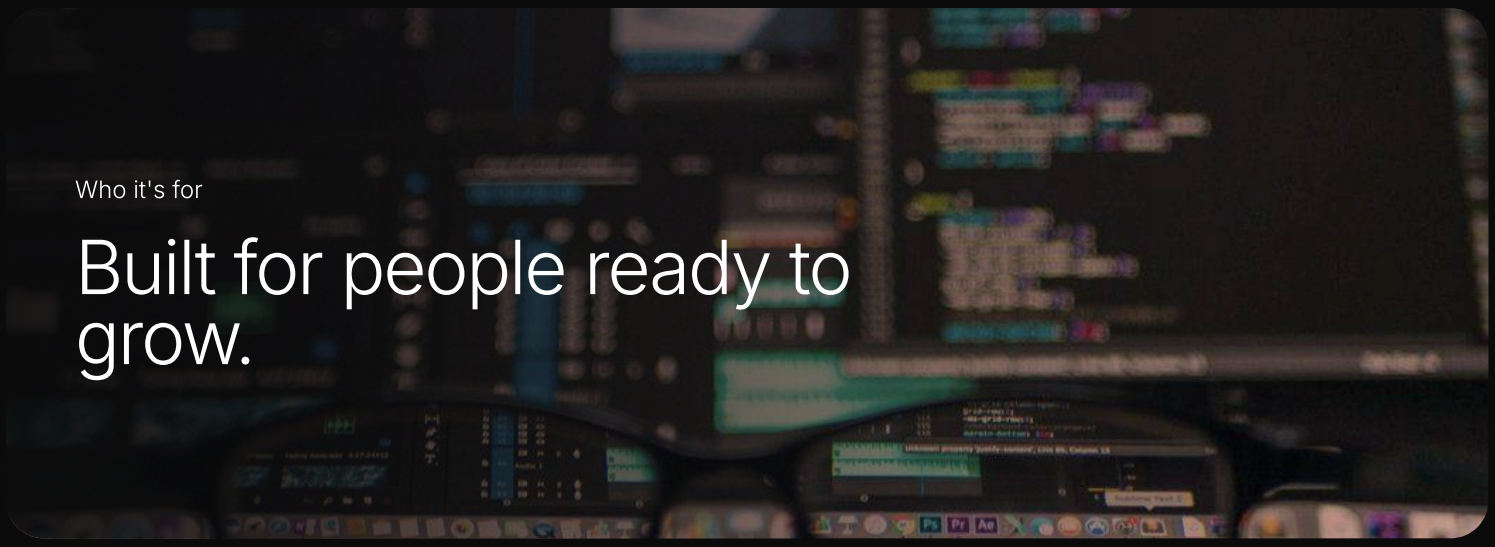
120 Hours

CERTIFICATION

SAM-MEAN

TRACK

Software Development



Who it's for

Built for people ready to grow.

01

Students & freshers

Python, Java, C/C++ and JavaScript foundations

02

Frontend developers

React, Angular and TypeScript

03

Backend developers

Node, Django, FastAPI and Spring Boot

04

Senior engineers

Microservices, system design, leadership

PREREQUISITES

Solid JavaScript ES6+ fundamentals	01
Basic TypeScript awareness is helpful	02
HTML, CSS and Git basics	03

ROLES THIS PREPARES YOU FOR

- MEAN Stack Developer ↗
- Full Stack Developer ↗
- Angular Developer ↗
- Node.js Backend Developer ↗
- Enterprise Web Application Developer ↗

Learning outcomes

What you'll be able to do.



01	Model application data in MongoDB using Mongoose
02	Build secure, validated REST APIs with Express and Node.js
03	Create Angular frontends using standalone components and signals
04	Handle forms, routing and HTTP with reactive Angular patterns
05	Implement JWT authentication across backend and frontend
06	Test, containerise and deploy MEAN applications with CI/CD

Program runway

Module by module.

8
modules · 120 hours

01	**Full-Stack and TypeScript Foundations** How full-stack applications work, TypeScript essentials, Node.js and npm	12 hrs
02	**MongoDB and Mongoose** Documents, collections and BSON, MongoDB Atlas setup, Mongoose schemas and validation	14 hrs
03	**Express API Development** Express routing and controllers, Middleware and error handling, Validation with Zod	18 hrs
04	**Authentication and API Security** bcrypt password hashing, JWT access and refresh tokens, Role-based authorization	12 hrs
05	**Angular Frontend Development** Standalone components and templates, Signals and computed state, Services and dependency injection	24 hrs
06	**Forms, HTTP and Integration** Typed reactive forms and validation, HttpClient and interceptors, Attaching JWT to requests	16 hrs
07	**Testing and Quality** API tests with Jest and Supertest, Angular unit tests, End-to-end tests with Playwright	10 hrs
08	**Deployment and Capstone Delivery** Environment configuration, Docker and Docker Compose, CI/CD with GitHub Actions	14 hrs
★	**Capstone · Project Management Web Platform** Assessment, capstone review and certification	

The syllabus.

Modules 01–03

Module 01

Full-Stack and TypeScript Foundations

12 hours

Hands-on lab
Set up a TypeScript Node backend and Angular CLI workspace.

TOPICS COVERED

- How full-stack applications work
- TypeScript essentials
- Node.js and npm
- Git and GitHub workflow
- HTTP, REST and JSON

Git · GitHub · Angular · Node.js

Module 02

MongoDB and Mongoose

14 hours

Hands-on lab
Design and seed MongoDB collections for a project tracker.

TOPICS COVERED

- Documents, collections and BSON
- MongoDB Atlas setup
- Mongoose schemas and validation
- Relationships and population
- Indexes and aggregation

MongoDB

Module 03

Express API Development

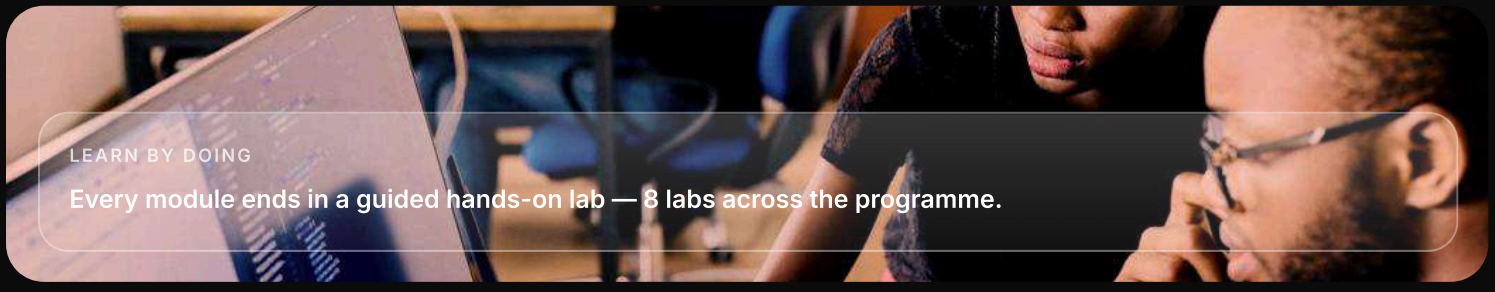
18 hours

Hands-on lab
Build REST endpoints for projects, tasks and team members.

TOPICS COVERED

- Express routing and controllers
- Middleware and error handling
- Validation with Zod
- Pagination, search and filtering
- File uploads
- OpenAPI documentation

Express



LEARN BY DOING

Every module ends in a guided hands-on lab — 8 labs across the programme.

Syllabus, continued.

Modules 04–06

Module 04

Authentication and API Security

12 hours

Hands-on lab
Secure the API with JWT authentication and role checks.

TOPICS COVERED

- bcrypt password hashing
- JWT access and refresh tokens
- Role-based authorization
- Helmet, CORS and rate limiting
- OWASP API security basics

OWASP

Module 05

Angular Frontend Development

24 hours

Hands-on lab
Build the project tracker UI with routing and Material components.

TOPICS COVERED

- Standalone components and templates
- Signals and computed state
- Services and dependency injection
- Routing, guards and lazy loading
- RxJS operators and async pipe
- Angular Material UI

Angular

Module 06

Forms, HTTP and Integration

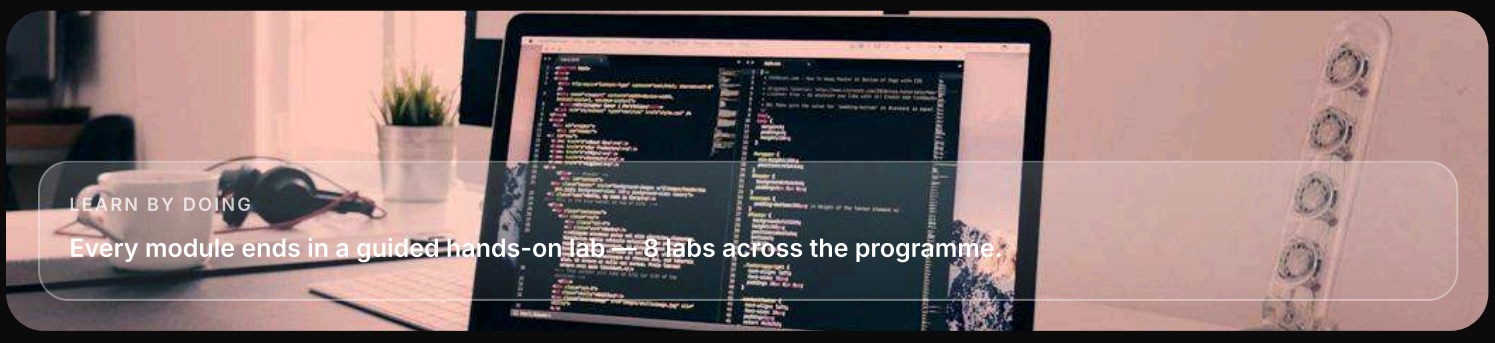
16 hours

Hands-on lab
Connect Angular forms and views to the secured Express API.

TOPICS COVERED

- Typed reactive forms and validation
- HttpClient and interceptors
- Attaching JWT to requests
- Error handling and loading states
- Real-time updates with Socket.IO

Angular Express



Syllabus, continued.

Modules 07–08

Module 07

Testing and Quality

10 hours

Hands-on lab
Write backend, Angular unit and end-to-end tests for core flows.

TOPICS COVERED

- API tests with Jest and Supertest
- Angular unit tests
- End-to-end tests with Playwright
- ESLint and Prettier
- Code review practices

Angular

Module 08

Deployment and Capstone Delivery

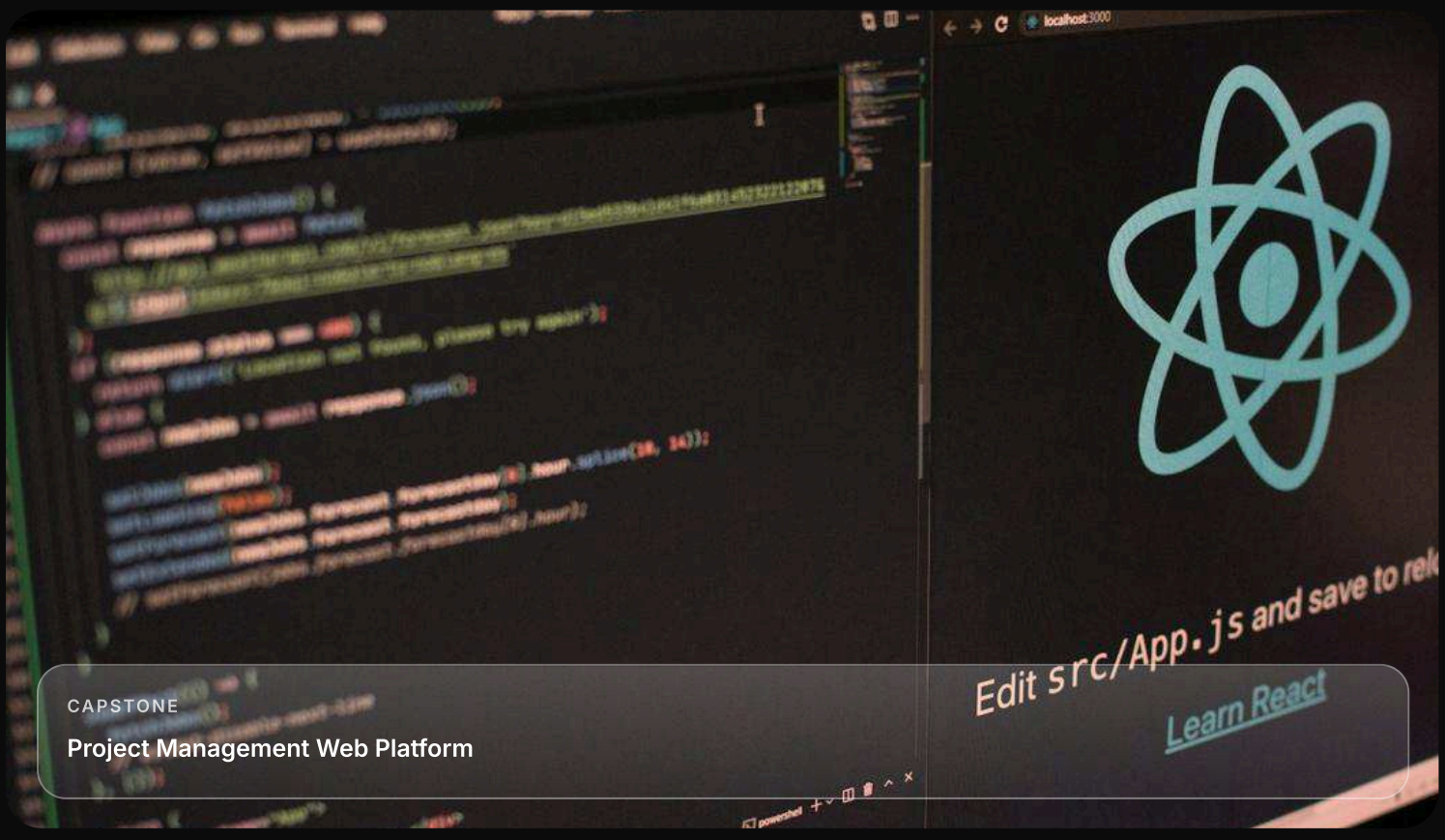
14 hours

Hands-on lab
Deploy the full MEAN application using Docker and CI/CD.

TOPICS COVERED

- Environment configuration
- Docker and Docker Compose
- CI/CD with GitHub Actions
- Hosting on cloud or VPS
- Logging and monitoring basics
- Capstone presentation and assessment

GitHub Docker



CAPSTONE

Project Management Web Platform



MongoDB
Document database

Express
Node web framework

Angular
Enterprise frontend

Node.js
JavaScript runtime

OWASP
Top 10 & testing standards

Git
Version control

GitHub
Code hosting & Actions CI

Docker
Containers & images

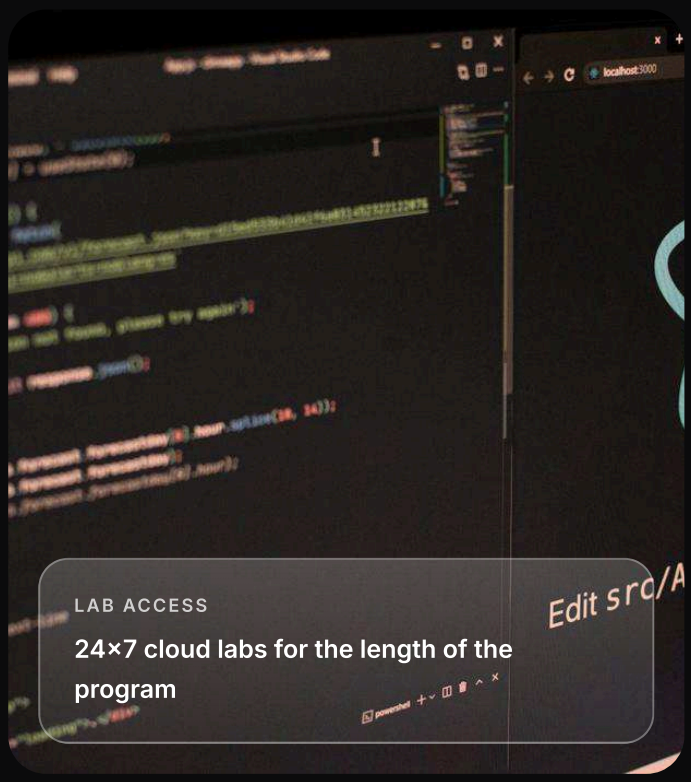
TypeScript
Typed JavaScript

Frameworks & standards

OWASP

FOCUS AREAS

- Model data in MongoDB 01
- Build APIs with Express and Node 02
- Create Angular frontends 03
- Deploy full-stack apps 04



01

Student Portal

A MEAN student portal with courses, enrolments, role-based dashboards and reactive forms for registration and profile management.

02

Inventory Management App

An inventory system with product CRUD, stock alerts, search, Angular Material tables and secure API endpoints.

03

Team Chat Workspace

A real-time team chat built with Socket.IO, MongoDB message storage and an Angular interface using RxJS streams.



Capstone project

Project Management Web Platform

Build and deploy a project management platform with workspaces, tasks, assignments, comments and real-time updates, using MongoDB, Express, Angular and Node, JWT authentication, automated tests and CI/CD deployment.

Real-world scenario ↗ Mentor review ↗ Portfolio ready ↗

Certification

SAM-MEAN

Awarded on successful completion of the program assessments.

- MCQ assessments
- Practical lab evaluation
- Project & capstone review
- Final presentation



The SAM Learning Framework™

Scenario · Apply · Master · Mentor

Phase 01

Scenario

Real-world attack and use-case scenarios open every module.

Phase 02

Apply

Hands-on lab work, CTF challenges and live projects.

Phase 03

Master

Assessment, peer review and certification prep.

Phase 04

Mentor

Post-program career guidance and support.

DELIVERY MODELS

- Instructor-Led (ILT)
- Virtual Instructor-Led
- Self-Paced Online
- E-Learning Licensing
- Blended Learning
- Corporate Onsite
- Bootcamp Intensive

Learning path · Software Development

Where this program fits.

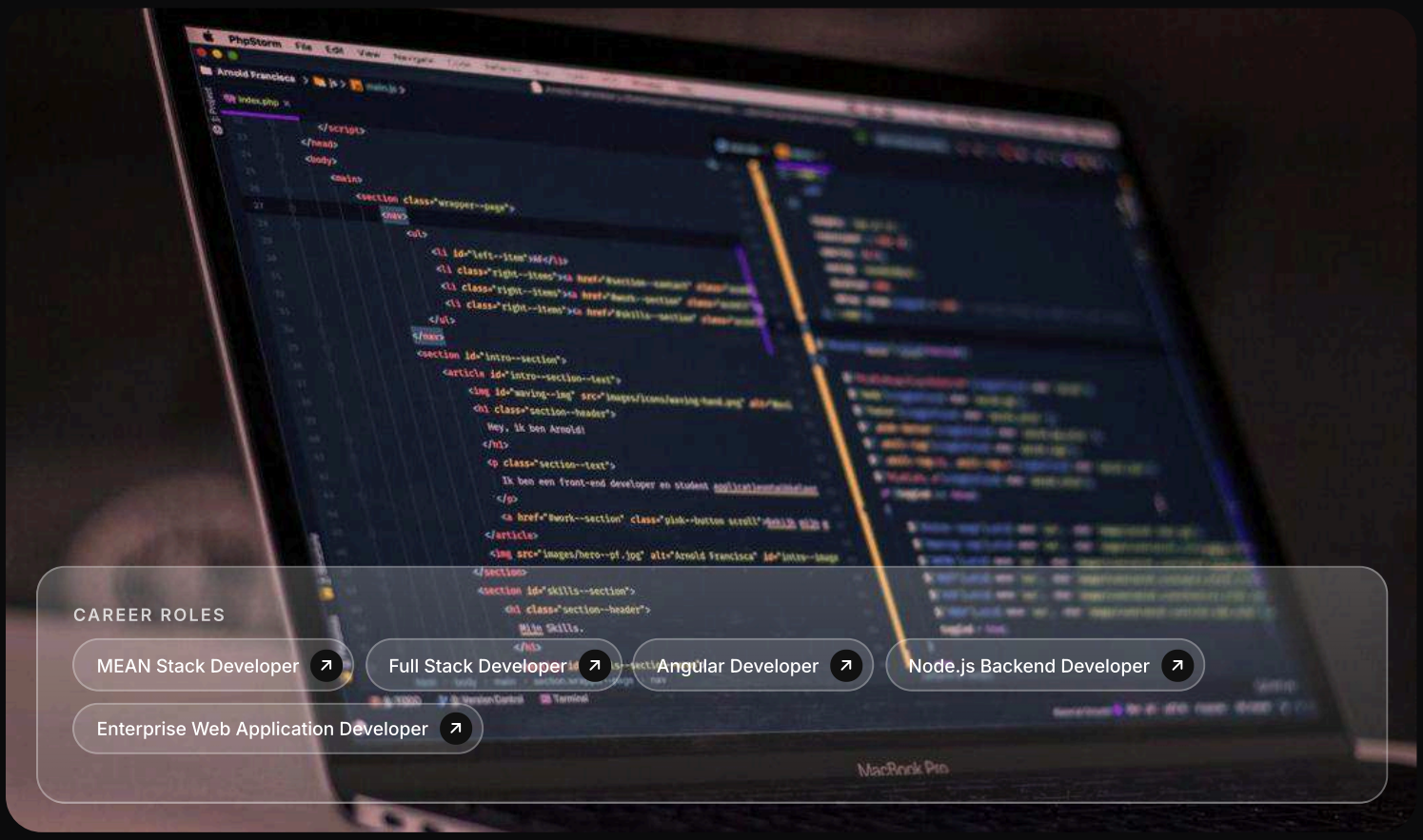
Beginner	Intermediate	Advanced	Expert
4 programs	You are here	3 programs	1 programs

Before this

Python Programming Fundamentals	40 Hours
Java Programming Fundamentals	48 Hours
C & C++ Programming	48 Hours
JavaScript Essentials	40 Hours

Up next

Full Stack Development (React + Node + MongoDB)	160 Hours
Microservices Architecture	72 Hours
System Design & Architecture	64 Hours



CAREER ROLES

- MEAN Stack Developer
- Full Stack Developer
- Angular Developer
- Node.js Backend Developer
- Enterprise Web Application Developer

Questions, answered.

Q01

Do I need prior experience to join?

You should know JavaScript fundamentals, HTML and CSS. TypeScript basics help but are covered early. Prior Angular or Node.js experience is not required for this intermediate full-stack program.

Q02

How are classes scheduled and delivered?

Sessions are instructor-led and run as live virtual or blended batches, with weekday and weekend options where available. Each session combines concept walkthroughs, live coding and guided lab time, with recordings or notes shared for revision.

Q03

Will I receive a certificate?

Yes. Learners who complete the required labs, projects and final assessments receive the Samcommunity Academy SAM-MEAN certificate. It is awarded on the basis of assessed work, not attendance alone.

Q04

What tools and lab access will I need?

You need a laptop with Node.js LTS, the Angular CLI, VS Code, Git, Docker Desktop and a free MongoDB Atlas account. Free hosting tiers are used for deployment labs.

Q05

Is career support included?

You get guidance on building a portfolio from your projects, resume and GitHub profile reviews, and mock technical interviews. We help you prepare and present your skills, but we do not guarantee jobs, placements or salary outcomes.



Let's talk

START MEAN STACK FULL STACK.

academy@samcommunity.in

corporate@samcommunity.in

samcommunity.in

@samcommunity_

Learn practical skills. Grow with mentors.

Xylyn Samcommunity Private Limited · DPIIT-recognized startup · Surat, Gujarat, India