

Full Stack Development

Learn to build and ship complete web applications end-to-end, from relational database design and backend APIs to responsive, deployed user interfaces.

DURATION
16 Weeks

COMMITMENT
10–12 hrs/week

LEVEL
Advanced (End-to-End Track)

FORMATS
Online Live · Offline (Coimbatore) · Self-Paced

Tools & tech stack

React / Next.js

Node.js / Python

PostgreSQL / MongoDB

REST & GraphQL

Cloud Deployment

React

Node.js & Express

PostgreSQL

MongoDB

Docker

GitHub Copilot

Postman

Git & GitHub

ChatGPT

Claude

Perplexity

Who it's for

- Developers ready to build and ship complete applications

What you'll learn

- Connecting frontend, backend, and database layers
- Authentication, authorization, and role-based access
- CI/CD basics and deployment workflows
- A capstone full-stack app built end-to-end

Curriculum

01 Part 1: Web and Development Foundations

- How the Web Works: Requests, Rendering, and Developer Tools
- Semantic HTML and Accessible Forms
- Responsive CSS Layout and Git Collaboration

02 Part 2: JavaScript and TypeScript

- JavaScript Fundamentals: Data, Functions, and Control Flow
- Asynchronous JavaScript and Browser APIs
- TypeScript Types and Application Structure

03 Part 3: React Frontend Engineering

- React Components, Props, and State
- Frontend State Design and Architecture
- Client Routing, Forms, and Server Data Fetching

04 Part 4: Backend API Engineering

- Node.js Server Foundations
- REST API Design and Validation
- Service Architecture and External Integrations

05 Part 5: Databases and Persistence

- SQL and Relational Database Design
- ORMs, Migrations, and Repository Patterns
- Document, Cache, and Search Stores

06 Part 6: Authentication, Security, and Privacy

- Authentication and Session Management
- Authorization and Multi-Tenancy
- Web Security and Data Privacy

07 Part 7: Testing, Accessibility, and Performance

- Automated Testing Across the Stack
- Accessibility and Cross-Browser Quality
- Web Performance and Debugging

08 Part 8: Delivery, Cloud, and Product Engineering

- Containers, CI/CD, and Deployment
- Observability, Reliability, and Operations
- Product Analytics and Continuous Improvement

09 AI Pro

- Using Claude, ChatGPT, and Perplexity Across the Full Stack
- Verifying AI-Suggested Full-Stack Features Before Trusting Them
- Project: AI-Assisted Full-Stack Feature with End-to-End Verification

Projects

- Multi-user task tracker with authentication, per-user data isolation, and full CRUD
- E-commerce storefront with cart, mock checkout, and order history
- Real-time multi-room chat app with typing indicators and reconnect handling
- Server-rendered blog platform with a GraphQL API and draft/publish workflow
- Recipe-sharing app with image upload, tagging, and AI-suggested tags