Full Stack Development Course

Module 1: Web Development Fundamentals

- Internet basics: Client–Server architecture, HTTP/HTTPS, APIs

- How the web works (DNS, hosting, browsers)

- Git & GitHub (version control basics)

- VS Code & developer tools

📌 Mini Project: Personal portfolio using basic HTML & CSS

Module 2: Frontend Development – Core

- HTML5: Semantic tags, forms, media

- CSS3: Selectors, box model, flexbox, grid, transitions/animations

- JavaScript (ES6+): Variables, functions, loops, arrays, objects

- DOM manipulation & events

- ES6 features (arrow functions, spread/rest, destructuring, promises, async/await)

📌 Mini Project: To-do list app with JavaScript

Module 3: Frontend Development – Advanced

- Responsive Design: Media queries, Bootstrap/Tailwind CSS

- Modern JS Framework: React (or Angular/Vue, but React is most popular)

Components, props, state

Hooks (useState, useEffect, useContext)

   React Router (navigation)

State management (Redux / Context API)

- API integration with fetch/axios

📌 *Mini Project*: Weather app with React + external API

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Module 4: Backend Development – Core

- Node.js: Basics, modules, npm, event loop

- Express.js:

Routing, middleware

Handling requests/responses

RESTful APIs

- Authentication & Authorization: Sessions, JWT

- Error handling & security basics

📌 Mini Project: REST API for a blog system

Module 5: Databases

- Relational DB (SQL – MySQL/PostgreSQL): Tables, joins, CRUD, indexing

- NoSQL DB (MongoDB): Documents, collections, aggregation

- ORM/ODM: Sequelize (SQL) / Mongoose (MongoDB)

📌 Mini Project: User registration + login system (with DB integration)

Module 6: Full Stack Integration

- Connecting frontend (React) with backend (Express + Node)

- Fetching & sending data via REST APIs

- MVC architecture in projects

- File upload & handling

- Real-time apps (WebSockets, Socket.io basics)

📌 Mini Project: Chat application (real-time)

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Module 7: Deployment & DevOps Basics

- Hosting frontend (Netlify, Vercel)

- Hosting backend (Heroku, Render, Railway, AWS)

- Databases in cloud (MongoDB Atlas, AWS RDS)

- Docker basics for containerization

- CI/CD basics with GitHub Actions

📌 Mini Project: Deploy full-stack app to cloud

Module 8: Advanced Topics

- GraphQL (Apollo, queries, mutations)

- Microservices architecture basics

- Testing: Jest, Mocha, Cypress

- Performance optimization & caching (Redis)

- Serverless functions (AWS Lambda, Vercel functions)

Module 9: Project

- Build a complete production-level full stack app (e.g., E-commerce, social media, Project Management Tool)

- Features: authentication, CRUD, payments (Stripe/PayPal), deployment

- Document the project in GitHub with README & API docs