Geegstack ACADEMY

RC-1995047

Fullstack Development Curriculum

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Course Objective.

The goal of the Fullstack Development course is to give you all the skill sets needed to build professional, scalable and modern software applications and web pages — using the same tools and workflows that the industry demands in 2026.

Technologies.

- **HTML**
- **CSS**
- **JavaScript**
- **TypeScript**
- **Git & Github**
- **React**
- **NodeJS**
- **ExpressJS**
- **MongoDB**
- **Web Hosting**
- **AI Coding Tools**

Duration: 20 weeks. Time:

- Week days: 9:00am - 1:00pm (3 days a week)
- Weekend: 10am - 4pm (Saturday & Sunday)

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CURRICULUM

Section 1: Web Foundations — HTML, CSS & Responsive Design

Week 1: HTML — Structure & Semantics

- ➢ Introduction to Web Development
- ➢ Setting up the development workspace
- ➢ Introduction to HTML
- ➢ Understanding HTML tags and attributes
- ➢ Working with images and hyperlinks
- ➢ Creating tables, ordered and unordered lists
- ➢ Understanding element display types
- ➢ Embedding third-party content with iframes
- ➢ Writing special characters with HTML entities
- ➢ Deep dive in Web Forms
- ➢ Working with media: videos and audios
- ➢ Semantic HTML5 elements
- ➢ HTML Tasks 1 & 2
- ➢ HTML Project 1 & Review

Week 2: CSS — Styling, Layout & CSS3

- ➢ Introduction to CSS
- ➢ Understanding color formats
- ➢ Backgrounds, borders, padding and margin
- ➢ Modifying texts and fonts
- ➢ CSS Display and Visibility
- ➢ Controlling element positions: static, relative, absolute, fixed

- Selecting elements dynamically: pseudo-classes and pseudo-elements
- Managing content overflow
- Flexbox — arranging elements professionally
- Grid — building structured layouts
- CSS Variables for reusable styling
- CSS3: gradients, transitions and animations
- Using third-party fonts from the web
- Modifying images with CSS filters
- CSS Challenges 1, 2 & 3

Week 3: Responsive Design, AI-Assisted UI & CSS Projects

- Building responsive web pages with media queries
- Mobile-first design approach
- Understanding breakpoints and responsive units
- Responsive navigation bars and dropdowns
- Introduction to AI-assisted UI building with v0.dev
- Generating UI components with AI and reviewing them critically
- Understanding where AI-generated CSS breaks and how to fix it
- CSS Project 1 & Review
- CSS Project 2 & Review

Section 2: JavaScript, TypeScript & AI-Augmented Development

Week 4: Introduction to Programming, JavaScript Basics & AI Coding Tools

- Introduction to Programming
- Getting started with JavaScript
- Using operators for programming operations
- Understanding data types

- ➢ Working with strings and numbers
- ➢ Developing programs with conditions
- ➢ Creating reusable code with functions
- ➢ Setting up Cursor IDE as the primary development environment
- ➢ Introduction to GitHub Copilot
- ➢ Using AI to explain unfamiliar code and debug errors
- ➢ Understanding what AI tools cannot do — thinking critically as a developer
- ➢ JavaScript Challenge 1

Week 5: JavaScript Deep Dive — Data Structures & the DOM

- ➢ Keeping similar data dynamically with arrays
- ➢ Tracking data with objects
- ➢ Working with dates
- ➢ Running programs multiple times with loops
- ➢ Creating object constructors with Constructor Functions
- ➢ Selecting document elements for JavaScript operations
- ➢ Modifying element content and values
- ➢ Creating and deleting elements
- ➢ Traversing element nodes
- ➢ Listening to and handling events
- ➢ Storing data in the browser with Local Storage and Session Storage
- ➢ JavaScript Challenges 2, 3 & 4

Week 6: Modern JavaScript — ES2015+ & API Consumption

- ➢ ES2015+ features: let, const, arrow functions, template literals
- ➢ Destructuring, spread and rest operators
- ➢ Modules: import and export
- ➢ Promises and the event loop

- ➢ Async/await for asynchronous operations
- ➢ Error handling with try/catch
- ➢ Introduction to APIs and how they work
- ➢ Consuming third-party data with the Fetch API
- ➢ Handling and displaying live API data
- ➢ Using AI assistance to integrate unfamiliar APIs faster
- ➢ JavaScript Challenges 5 & 6
- ➢ JavaScript Project 1 & Review

Week 7: TypeScript Fundamentals

- ➢ Why TypeScript? Problems it solves in large codebases
- ➢ Setting up a TypeScript development environment
- ➢ Primitive types: string, number and boolean
- ➢ Arrays, tuples and enums
- ➢ Interfaces and type aliases
- ➢ Union types and type inference
- ➢ Writing functions with typed parameters and return types
- ➢ Introduction to generics
- ➢ Using TypeScript with the DOM
- ➢ Migrating an existing JavaScript file to TypeScript
- ➢ TypeScript Challenge 1

Week 8: Git, GitHub & Professional Developer Workflow

- ➢ Why version control matters
- ➢ Core Git commands: init, add, commit, push, pull
- ➢ Branching and merging
- ➢ Resolving merge conflicts
- ➢ Collaborating on GitHub with pull requests
- ➢ Reviewing code on GitHub
- ➢ Tracking tasks with GitHub Issues
- ➢ Using GitHub Copilot within the development workflow
- ➢ Deploying frontend projects on Vercel
- ➢ Understanding Vercel deployment previews

Week 9: JavaScript & TypeScript Projects & Peer Review

- ➢ JavaScript Project 2 — API-powered application: build & review
- ➢ TypeScript Project — refactoring JavaScript Project 1 with TypeScript
- ➢ Writing a professional GitHub README for your projects
- ➢ Ensuring all projects are live and portfolio-ready
- ➢ Peer critique session — giving and receiving technical feedback
- ➢ Conducting a code review using AI tools

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Section 3: Frontend Engineering with React

Week 10: React Fundamentals

- Why React? Problems it solves over vanilla JavaScript
- Setting up the React development environment
- React project structure and how it works
- Introducing JSX
- Functional components
- Understanding props
- Managing state with useState
- Handling side effects with useEffect
- Event handling in React
- Working with forms in React
- Using AI assistance to scaffold and review components
- React Challenge 1

Week 11: React Advanced & React with TypeScript

- Conditional rendering
- React Router: navigating between pages
- React styling: CSS modules and inline styles
- Consuming third-party APIs in React components
- Introduction to React with TypeScript
- Typing props and state with TypeScript interfaces
- Handling typed events in React
- Production builds and how they work
- Deploying a React app on Vercel
- React Project 1 & Review

Week 12: React Project 2 — Real Client Brief Format

- ➢ Understanding how to read and interpret a client brief
- ➢ Scoping a project: identifying features, pages and components
- ➢ Planning a component tree before building
- ➢ Building React Project 2 from a simulated local business brief
- ➢ Connecting the frontend to a live third-party API
- ➢ Deploying the finished project on Vercel
- ➢ Writing a portfolio case study for the project
- ➢ Project review and presentation
- ➢ Frontend Advanced Resources & Project References

Week 13: React Project 3 & Mid-Stack Break

- ➢ React Project 3 — student-chosen brief: build & review
- ➢ Group project presentations
- ➢ Freelance pricing workshop: how to scope and quote a frontend project
- ➢ Understanding value-based versus hourly pricing
- ➢ Mid-stack Break

Section 4: Backend Engineering — Node.js, Express.js, MongoDB & APIs

Week 14: Server-Side Foundations & Node.js

- ➢ How the web works: the request/response cycle, DNS and HTTP
- ➢ Static versus dynamic web pages
- ➢ Understanding server-side scripting
- ➢ Setting up the backend development workspace
- ➢ Introduction to Node.js: why it exists and how it works

- ➢ Building a simple server in Node.js
- ➢ Understanding HTTP request methods: GET, POST, PUT, DELETE
- ➢ Building a Command Line Weather Application
- ➢ Working with the file system in Node.js
- ➢ Working with NPM and managing packages

Week 15: Express.js — Servers, Routing & Middleware

- ➤ Introduction to ExpressJS
- ➤ Setting up an Express application
- ➤ Understanding the request and response objects
- ➤ Building and organizing routes in Express
- ➤ Understanding and using middleware
- ➤ Serving static files
- ➤ Collecting data from POST requests
- ➤ Error handling in Express
- ➤ Testing API endpoints with Postman
- ➤ Reviewing AI-generated Express boilerplate critically
- ➤ Express Challenge 1

Week 16: MongoDB & User Authentication

- ➤ Introduction to databases: SQL vs NoSQL
- ➤ Introduction to MongoDB
- ➤ Integrating MongoDB with ExpressJS
- ➤ Mongoose: defining schemas and models
- ➤ CRUD operations with Mongoose
- ➤ Data validation in schemas
- ➤ Introduction to user authentication
- ➤ Hashing passwords with bcrypt
- ➤ Understanding JWT: what it is and how it works
- ➤ Implementing JWT-based authentication
- ➤ Protecting routes with authentication middleware
- ➤ Database Challenge 1

Week 17: RESTful API Development & System Design Thinking

- ➢ RESTful API design principles and best practices
- ➢ The Geegstack Store API Project: setup and planning
- ➢ Building models and connecting to the database
- ➢ Building, completing and testing all routes
- ➢ Testing the full API with Postman
- ➢ Connecting a React frontend to an Express and MongoDB backend
- ➢ Introduction to system design thinking
- ➢ Making architecture decisions as a developer
- ➢ System Design Challenge: sketching the architecture of a simple app
- ➢ API Project Review

Week 18: Deployment, Security & CI/CD Basics

- ➢ Deployment options for backend applications in 2026
- ➢ Deploying Node/Express applications on Render & Railway
- ➢ Managing environment variables and .env files
- ➢ Securing API keys and sensitive data in production
- ➢ Understanding CORS and why it matters
- ➢ Introduction to CI/CD: what it is and why developers use it
- ➢ Setting up a basic GitHub Actions deployment pipeline
- ➢ Using AI tools to assist with debugging deployment errors
- ➢ Backend Project 1 & Review
- ➢ Backend Project 2 & Review

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Section 5: Fullstack Capstone, Portfolio & Career Launch

Week 19: Fullstack Capstone Projects & Presentations

➢ Fullstack Capstone Project 1 — individual, student-chosen idea

➢ Fullstack Capstone Project 2 — assigned client-brief format

➢ Deploying fullstack applications end-to-end

➢ Live demo presentations: presenting your work to an audience

➢ Portfolio cleanup: all projects live, documented and polished

➢ GitHub profile review: pinned repositories, bio and README quality

Week 20: Career & Business Launch

➢ How to independently learn any new technology quickly

➢ Building a learning system that keeps you relevant in an AI-driven industry

➢ Introduction to freelancing as a software developer

➢ Finding your first clients

➢ Pitching a tech solution to a non-technical business owner

➢ Scoping and pricing a project

➢ Optimising your LinkedIn profile for tech opportunities

➢ Introduction to Upwork and international freelance platforms

➢ Writing a winning proposal and cover letter

➢ Understanding client management: briefs, deliverables and revisions

➢ Seminar: landing your first paid job or contract

➢ Advanced resources references


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Other Benefits:

- 15 practical projects
- Fullstack Development Certificate
- Business & Career Launch Program
- Post graduation mentorship

Program Cost

Learning mode	Program Price
Private Class	**NGN650,000**
Boarding & Internship	**NGN450,000**
Boarding	**NGN350,000**
Week days	**NGN205,000**
Weekends	**NGN190,000**
Online	**NGN175,000**

Payment Method

Transfer to:
Account Number: **4091698613**
Bank: **Polaris Bank**
Account Name: **Geegstack Academy of Software Engineering Ltd.**

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For More Enquiry, Call or WhatsApp:

08050885112

or

08126430670