



Back-End Web Development Overview

6 months (20 hrs / week)

What is Back-End Web Development?

- A meticulously crafted 18-week journey designed to turn learners from novices into job-ready developers.
- Experience hands-on, practical learning for real-world application that covers essential web technologies, modern back-end frameworks, and key languages like Javascript, Node.js, and Python
- As a back-end developer, you're like the electrician of a website, ensuring the essential connections behind the scenes for proper functionality and contributing vitally to the success of digital platforms.

Why Back-End Web Development?

The relevance of the programme is highlighted by its alignment with the growing industry demand for skilled back-end developers, addressing the rising complexity of businesses and applications. With an industry-standard capstone project, learners receive expert mentorship from experienced software engineers and programme alumni, fostering a supportive learning environment and providing valuable industry insights.

Programme Objectives

- Basic proficiency in back-end languages like Python, Node.js, and Express.js
- Database management with SQL (e.g., MySQL) and NoSQL (e.g., MongoDB) databases
- REST API, Authentication, and other back-end concepts
- How to build a basic, functional web application from the ground up
- To problem-solve based on real-world scenarios

What makes this programme unique?

Hands-on Learning

The programme emphasises practical application through industry-standard project-based learning, enabling learners to apply theoretical knowledge directly to real-world scenarios for a deep understanding of concepts.

Mentor Support

Offers mentorship from seasoned engineers and alumni, providing valuable insights and support that enhance the learning journey with a direct link to real-world experiences and industry best practices.

Comprehensive Curriculum

Covering a broad spectrum of back-end technologies and best practices ensuring participants develop a well-rounded skill set for job readiness.

Weekly Foundations Schedule

08 Weeks (20–30hrs / week)

What is ALX Foundations?

- A career-readiness training module to kick-start your ALX learning journey before moving on to your chosen specialisation.
- Learn exceptional communication, teamwork, and leadership skills that make ALX graduates top picks in the job market.
- Be ready for a real-world career with soft skills that keep you ahead in the rapidly changing tech industry.

8 Key Meta Skills

1. **Leading Self**
2. **Leading Others**
3. **Communicating for Impact**
4. **Quantitative Reasoning**
5. **Entrepreneurial Thinking**
6. **Critical Thinking**
7. **Managing Complex Tasks**
8. **Tech Skills**

Weekly Content

Week 01

- Getting Started
- Daily 3
- Onboarding & Programme Overview
- The ROOM Fellowship
- Values & Community
- GCGOs for Africa

Week 02

- Daily 3
- Karibu Lessons
- Values & Empathy
- Exploring African GCGOs
- Self Awareness & Emotional Intelligence
- Growth Mindset & Grit
- Self Regulation & Improvement
- Time Management

Week 03

- Daily 3
- Habit Formation
- Goal Setting
- Defining Problems & User Stories
- Problem Solving
- Asking the Right Questions
- Research Methodology & Ethics

Week 04

- Daily 3
- Goal Setting
- Communication for Impact
- Creating Presentations & Technical Writing
- Communication in Tech Teams
- Design Thinking
- Work Planning

Week 05

- Daily 3
- Problem Definition
- Teamwork Best Practices
- Agile Technology Teams: Roles & Processes
- Research & Data Gathering
- Data Cleaning & Preparation
- Data Visualization
- Identifying Opportunities
- Generating Solutions
- Understanding the Market

Week 06

- Daily 3
- Understanding the User
- User Interviews
- Wireframes & Prototype
- Human Centered Design

Week 06 (Cont)

- Teamwork & Team Communication
- Conflict Management & Negotiation

Week 07

- Daily 3
- Improving on Your Solution
- Product Requirements
- Design Handover Process
- Pitch Preparation
- Powerful Presentations
- Identifying Opportunities
- Personal Brand & Bio
- Career Skills

Week 08

- Daily 3 Reflection & Commitment
- Elevator Pitch
- Exploring Tech Tracks
- Resume Writing
- LinkedIn Profiles
- Cover Letters
- Interview Skills

Weekly Specialisation Schedule

- **Project releases:** Projects are released on Saturdays and ends by end of Thursdays
- **Live learning sessions:** Twice weekly live learning sessions. Learners will be introduced to the projects for the coming week during the first session and then there will be a deep dive into the concepts during the second session.
- **Peer learning days:** There is a dedicated day for learners to connect with one another and study together.

Weekly Content

Week 00 – Onboarding & Fundamentals of the web

Week 01 – Command Line Basics

Week 02 – Version Control

Week 03 – Introduction to Python

Week 04 – Introducing Logic into programming (Control flow and loops)

Week 05 – Functions, Data Structures & Modules

Week 06 – Programming Paradigms & Exception handling

Week 07 – More about OOP

Week 08 – Introduction to Databases



Week 09 – Web framework and ORMs

Week 10 – APIs and Authentication

Week 11 – Introduction to Django and Basic Overview

Week 12 – Deepening Understanding of Django Models and Databases

Week 13 – Exploring Django Views, Templates, and Forms

Week 14 – Advanced Django Concepts

Week 15 – Building a Complete Django Application

Week 16 & 17 – Capstone Project

