



PYTHON TRAINING

Python Backend Development

Master Python to build robust backend systems, APIs, and web applications. Develop skills to power scalable, secure server-side solutions.

DURATION

2 hours

LEVEL

Intermediate

FORMAT

Instructor-Led

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- Globally Recognized Certification
 - Expert-Led Hands-On Training
 - Flexible Scheduling

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COURSE OVERVIEW

This intermediate-level Python Backend Development course is meticulously designed to equip aspiring and current developers with the essential skills and practical experience needed to build robust, scalable, and secure web applications. You'll dive deep into industry-standard Python web frameworks such as Django or Flask, learning to construct powerful backend systems that drive modern applications. The curriculum emphasizes hands-on development, covering everything from setting up project environments and managing dependencies to designing database schemas and implementing complex business logic.

Throughout the course, you will master key backend technologies including RESTful API design and implementation, working with Object-Relational Mappers (ORMs) for efficient database interaction (SQL and potentially NoSQL databases), and integrating essential services. By understanding how to structure projects, handle user authentication, and prepare applications for deployment, you'll gain a comprehensive understanding of the backend development lifecycle.

This expertise will not only enhance your technical proficiency but also significantly boost your employability in a rapidly evolving tech landscape, positioning you for advanced roles in web development, API engineering, and full-stack architecture.

Duration	2 hours
Level	Intermediate
Vendor	Python

COURSE CURRICULUM

01 Module 1: Foundations of Backend Development with Python

- Introduction to backend architecture (client-server model, HTTP/HTTPS)
- Python best practices and environment setup (virtual environments, pip)
- Review of advanced Python concepts for backend (decorators, generators, async)
- Introduction to web frameworks (overview of Django vs. Flask)

02 Module 2: Building with a Python Web Framework

- Project setup and application structure with Django/Flask
- URL routing and views/controllers
- Templating engines (e.g., Django Templates, Jinja2)
- Handling form submissions and user input validation
- Introduction to Middleware and its applications

03 Module 3: Database Integration and ORMs

- Introduction to relational databases (e.g., PostgreSQL, MySQL)
- Designing database models and relationships
- Working with Object-Relational Mappers (e.g., Django ORM, SQLAlchemy)
- Database migrations and schema management
- Basic queries and advanced filtering techniques

04 Module 4: Crafting RESTful APIs

- Principles of RESTful API design and best practices
- Developing API endpoints with Django REST Framework or Flask-RESTful

- Serialization and deserialization of data models
- Handling HTTP methods (GET, POST, PUT, PATCH, DELETE)
- API versioning and documentation (e.g., OpenAPI/Swagger)

05 Module 5: Authentication, Authorization & Security Best Practices

- User authentication mechanisms (token-based, session-based, OAuth)
- Implementing authorization (permissions, roles, groups)
- Security considerations (CSRF, XSS, SQL Injection prevention)
- Error handling, logging, and monitoring strategies
- Rate limiting and throttling API requests

06 Module 6: Deployment & Advanced Concepts

- Preparing Python applications for production environments
- Introduction to containerization with Docker (basics for deployment)
- Basic deployment strategies (e.g., Gunicorn/uWSGI with Nginx)
- Implementing background tasks and asynchronous processing (Celery)
- Strategies for unit testing and integration testing your backend

CAREER PATHWAYS

Graduates of this program are prepared for the following roles:

- > **Django Backend Developer**
- > **RESTful API Engineer**
- > **Python Web Application Architect**

FREQUENTLY ASKED QUESTIONS

Q: What level of Python proficiency is required before enrolling in this Python Backend Development course?

This course is designed for intermediate Python developers. You should have a solid understanding of Python fundamentals, including data structures, control flow, functions, object-oriented programming (OOP) concepts, and basic module usage. While prior exposure to web development concepts is beneficial, it's not strictly required as backend fundamentals will be thoroughly covered from the ground up.

Q: Will I gain hands-on experience building a complete backend application, or is it purely theoretical?

Absolutely! This course is heavily project-based. You will actively engage in practical exercises and build a complete, functional backend application using either Django or Flask. This includes designing database models, creating robust API endpoints, implementing user authentication, and preparing the application for potential deployment. The goal is to provide you with tangible skills and a portfolio-ready project.

Q: Does this course cover integrating with specific frontend frameworks, or does it focus solely on backend API development?

The primary focus of this course is on developing robust Python backends and RESTful APIs. While we will briefly discuss how these APIs interact with frontend applications and the principles of client-server communication, the curriculum does

not delve into specific frontend framework implementations (e.g., React, Angular, Vue.js). You will, however, learn to build APIs that are perfectly consumable by any modern frontend framework.

ABOUT COMPUTER PRIDE



East Africa's Premier IT Training Center

With over 15 years of excellence, Computer Pride delivers globally recognized certification programs from leading technology vendors. Located on Kenyatta Avenue in Nairobi's CBD, our state-of-the-art facilities and expert instructors have empowered thousands of professionals across East Africa.

15+

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READY TO ENROL?

Take the next step in your technology career.

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