Python Full Stack Development Online Course

Preface

Welcome to the **Python Full Stack Development Online Course** from a2v Academy!

In today's fast-paced digital world, the demand for skilled Full Stack Developers is higher than ever. Whether you're building dynamic web applications, enterprise-level software, or modern microservices, a deep understanding of both front-end and back-end development is essential.

What makes this course unique is its focus on **practical, project-based learning**. By the end of this course, you won't just understand the theory — you'll have built **real-world applications** and developed the confidence to tackle complex development challenges.

Whether you are a beginner aiming to break into the tech industry or an experienced professional looking to upskill, this course provides the foundation, tools, and guidance you need to thrive in the world of full stack development.

Course Outline

Core Python

This module provides a foundational understanding of the Python programming language.

- Introduction to Python
- Installation
- Introduction to IDE's
- Python Language Fundamentals
- Different Modes of working with Python
- Basic I/O operations in Python
- Operators and Expressions in Python
- Data Types in Python
- Control Structures
- String Handling

- List, Tuple, Set, Dictionary Data Structure and Operations
- Functions, Modules and Packages in Python
- Exception Handling in Python
- Regular Expressions
- File or Stream Handling

Advanced Python

Deepen your Python skills by exploring advanced concepts, libraries, and real-world applications.

- OS Module
- Multi-Threading
- Python Logging
- Date and Time module
- Garbage Collection
- NumPy
- Pandas
- Matplotlib

Front-end development

This section provides an in-depth exploration of client-side frameworks and tools for constructing interactive and adaptive user interfaces.

- **HTML & CSS:** Build the structure and visual styling of web pages.
- **JavaScript (ES6+):** Add interactivity and dynamic behavior to applications.
- **Frontend Frameworks:** Use libraries like React.js or frameworks like Bootstrap/Tailwind CSS to create responsive UIs.

Back-end development (Server-side)

This module focuses on implementing backend functionality and establishing communication with the front-end.

- **Web Frameworks: Master Django and Flask** for developing web applications and RESTful APIs.
- **API Development:** Learn to create and consume RESTful APIs for seamless data exchange.

Database Management

Get familiar with managing data using both relational and non-relational databases.

- **Relational Databases:** Learn SQL to work with systems like MySQL and PostgreSQL.
- **NoSQL Databases:** Understand and use databases like MongoDB.
- **Object-Relational Mappers (ORMs):** Use SQL-Alchemy or Django's ORM for simplified database interactions.

Version Control and Collaboration

Learn how to manage code changes and collaborate effectively using version control systems like Git.

- **Git & GitHub:** Learn to track code changes, collaborate with teams, and manage projects.

DevOps and Deployment

This segment highlights the tools and processes involved in automating the software release cycle.

- **Cloud Platforms:** Deploy applications on cloud services like AWS or Heroku.

- **Containers:** Understand containerization concepts using Docker for efficient deployment.
- **CI/CD Pipeline:** Get introduced to Continuous Integration and Continuous Deployment for automating workflows.

Capstone Project

- Execute an end-to-end capstone project involving the architecture, development, and integration of front-end interfaces, back-end services, and database management systems to deliver a cohesive solution.
- The course culminates in an experiential learning project where you will build a fully functional application that applies all course concepts to solve a real-world problem

Total Duration of the Course

- **Total duration:** 3 months.
- **Days:** Monday to Friday (1.5 hrs daily)
- **Mode:** Online

Certificate

- A course completion certificate will be awarded once you have successfully completed this course.

Wishing you a **Smooth Coding** ahead!