Python Scripting for DevOps - From Basics to Advanced Course Index

Duration: 6 Weeks  
Mode: Online/Offline/Hybrid  
Level: Beginner to Advanced  
Focus: Automating DevOps tasks using Python scripts for infrastructure, CI/CD, monitoring, and system operations.

## Week 1: Python Basics for Scripting

* - Python syntax, variables, data types
* - Loops, conditions, functions, file I/O
* - Working with subprocess and OS modules
* - Real-time: Write a script to parse and log system info

## Week 2: System Administration with Python

* - Working with files, directories, logs
* - Process management, service control
* - Interacting with Linux commands using subprocess
* - Real-time: Create a disk usage and cleanup automation script

## Week 3: Network Automation and APIs

* - Sockets and IP resolution
* - Consuming REST APIs with requests
* - Handling JSON, XML data
* - Real-time: Fetch server health from a monitoring API and send alerts

## Week 4: DevOps Tooling Automation

* - Interacting with Git, Jenkins, Docker via APIs/CLI
* - Working with YAML and INI files for CI/CD config
* - Real-time: Automate Jenkins job creation or Docker container health check

## Week 5: Cloud & Infrastructure Automation

* - Using Boto3 for AWS automation (EC2, S3, IAM)
* - Managing Terraform via Python scripts
* - Real-time: Start/stop EC2 instances and rotate S3 backups with Python

## Week 6: Capstone Project & Best Practices

* - Logging, error handling, script testing (unittest, pytest)
* - Best practices in script modularization and documentation
* - Capstone: Build a script to automate full-stack DevOps task (infra check, alerting, backup)
* - Real-time: Run and document the script with Git integration