

# Syllabus DevOps Course

## Meetup 1: Introduction to DevOps

- **0:00 - 0:15:** Welcome and course overview
- **0:15 - 0:45:** What is DevOps?
  - Definition and principles
  - The history and evolution of DevOps
- **0:45 - 1:00:** The DevOps lifecycle
  - Continuous Integration (CI)
  - Continuous Delivery (CD)
  - Continuous Deployment
- **1:00 - 1:15:** Break
- **1:15 - 1:45:** Benefits of DevOps
  - Improved deployment frequency
  - Faster time to market
  - Lower failure rate of new releases

## Meetup 2: Introduction to Version Control Systems

- **0:00 - 0:15:** Recap of previous meetup
- **0:15 - 0:45:** Basics of version control
  - What is version control?
  - Benefits of version control systems (VCS)
- **0:45 - 1:00:** Introduction to Git
  - Basic commands
  - Branching and merging
- **1:00 - 1:15:** Break
- **1:15 - 1:45:** Hands-on Git practice
  - Setting up a repository
  - Committing changes
  - Collaborating with others

## Meetup 3: What is Docker

- **0:00 - 0:15:** Recap of previous meetup
- **0:15 - 0:45:** Introduction to containerization

- What are containers?
- Benefits of containerization
- **0:45 - 1:00:** Introduction to Docker
  - What is Docker?
  - Docker architecture
  - Key Docker components (Docker Engine, Images, Containers, Docker Hub)
- **1:00 - 1:15:** Break
- **1:15 - 1:45:** Hands-on with Docker
  - Installing Docker
  - Running your first container
  - Building Docker images

## Meetup 4: What is Kubernetes

- **0:00 - 0:15:** Recap of previous meetup
- **0:15 - 0:45:** Introduction to Kubernetes
  - What is Kubernetes?
  - Key concepts (Pods, Nodes, Clusters, Namespaces)
- **0:45 - 1:00:** Kubernetes Architecture
  - Master and Worker nodes
  - Key components (API Server, Scheduler, Controller Manager, etcd, Kubelet, Kube-Proxy)
- **1:00 - 1:15:** Break
- **1:15 - 1:45:** Hands-on with Kubernetes
  - Deploying a simple application
  - Managing containers with Kubernetes
  - Using kubectl for cluster management

## Meetup 5: Continuous Integration (CI)

- **0:00 - 0:15:** Recap of previous meetup
- **0:15 - 0:45:** What is Continuous Integration?
  - Benefits and challenges
  - Key practices
- **0:45 - 1:00:** CI tools overview
  - Jenkins
- **1:00 - 1:15:** Break
- **1:15 - 1:45:** Setting up a CI pipeline

- Hands-on demonstration using Jenkins

## **Meetup 6: Continuous Delivery and Deployment (CD)**

- **0:00 - 0:15:** Recap of previous meetup
- **0:15 - 0:45:** What is Continuous Delivery and Deployment?
  - Differences between CD and Continuous Deployment
- **0:45 - 1:00:** CD tools overview
  - ArgoCD
- **1:00 - 1:15:** Break
- **1:15 - 1:45:** Implementing a CD pipeline
  - Hands-on demonstration using Jenkins and GitHub

## **Meetup 7: Infrastructure as Code (IaC)**

- **0:00 - 0:15:** Recap of previous meetup
- **0:15 - 0:45:** What is Infrastructure as Code?
  - Benefits of IaC
- **0:45 - 1:00:** Introduction to IaC tools
  - Terraform
- **1:00 - 1:15:** Break
- **1:15 - 1:45:** Hands-on demonstration with Terraform
  - Creating and managing infrastructure in AWS

## **Meetup 8: Monitoring and Logging**

- **0:00 - 0:15:** Recap of previous meetup
- **0:15 - 0:45:** Importance of monitoring and logging
  - Key metrics to monitor
- **0:45 - 1:00:** Tools for monitoring and logging
  - Prometheus, Grafana
- **1:00 - 1:15:** Break
- **1:15 - 1:45:** Setting up a monitoring system
  - Hands-on with Prometheus and Grafana

## **Meetup 9: Cloud Platforms and DevOps**

- **0:00 - 0:15:** Recap of previous meetup
- **0:15 - 0:45:** Overview of cloud platforms
  - AWS, Azure, Google Cloud

- **0:45 - 1:00:** Benefits of using cloud platforms in DevOps
- **1:00 - 1:15:** Break
- **1:15 - 1:45:** Hands-on with a cloud platform
  - Setting up a simple application on AWS

## **Meetup 10: Configuration Management**

- **0:00 - 0:15:** Recap of previous meetup
- **0:15 - 0:45:** What is Configuration Management?
  - Benefits of configuration management
- **0:45 - 1:00:** Overview of Configuration Management tools
  - Ansible
- **1:00 - 1:15:** Break
- **1:15 - 1:45:** Hands-on demonstration with Ansible
  - Writing playbooks
  - Managing configurations
- **END PROJECT.**