

# Devops Course Syllabus



DELTA**FROG**  
Technology

## DEVOPS COURSE Syllabus

### Module -1: DevOps Essentials

- Why DevOps?
- What is DevOps?
- DevOps Market Trends
- DevOps Engineer Skills
- SDLC Models and Methodologies
  - Waterfall Vs Agile and Scrum
- DevOps delivery pipeline
- DevOps Tools

### Module -2: Agile/Scrum

- What is Agile Methodology?
- What is Scrum?
- Scrum Roles
- Scrum Ceremonies
- SDLC Models and Methodologies
  - Waterfall Vs Agile and Scrum
- Scrum Artifacts

## Module -3: GIT

- What Version control system
- Types of Version Control Systems
  - Central VCS
  - Distributed VCS
- Differences between Central and Distributed
- Basics of GIT
- Installation and setup of Git
- GIT architecture and life cycle
- Git Init/Cloning
- Staging and Remotes
- GIT Online Repositories (Push and Pull)
- Merging and Branching
- Git Advanced commands

## Module -4: Shell Scripting

- Introduction
- Shell Types
- File System
- Basic Linux/Unix commands
- File Permissions
- User Management
- Shell scripting
  - Variables
  - Operators
  - Expressions
  - Control statements
  - Arrays
  - Loops
  - Basic script example

- Command line arguments

## Module -5: Build Tools

- What is Build Tool
- Ant
  - Introduction
  - Targets
  - Depends
  - Build.xml
  - How to invoke of Ant
  - Setup Ant
  - Hands on
- Maven
  - Introduction
  - Maven Life Cycle
  - Architecture
  - Repositories
  - Maven Generate
  - GAV
  - Install and setup of Maven

## Module -6: Apache - Tomcat

- Web Server vs App Servers
- Installation of Tomcat
- Directory Structure
- Configurations
- Deploying web applications

## Module -7: Sonar Qube

- What is Static Code Analysis

- Installation of SonarQube
- Sonar architecture

## Module -8: Jenkins

- What is Continuous Integration (CI)
- Benefits of CI
- CI Practices
- CI Tools
- Jenkins Continuous Integration
- Jenkins Features
- Installing Jenkins
- Jenkins Installation Instructions
- Running Jenkins on an Application Server
- Configuring Source Code Management (SCM)
- Configuring Jenkins jobs
- Build Triggers
- Polling the SCM
- Ant Build Steps
- Email Notification
- Deployment Plugins
- User Management
- Jenkins Plugins
- Introduction to Jenkins plugins
- Installing Jenkins plugins using interface
- Distributed Builds with Jenkins
- Master-Slave Architecture
- Hands On M-S concepts

## Module -9: Configuration Management (Ansible)

- Introduction to Configuration Management (Infrastructure as code)
- Briefing on various Configuration Management tools (Puppet, Chef, Ansible, saltstack)

- Introduction to Ansible
- Ansible Terminologies
- Installation of Ansible on Ubuntu
- Adhoc Commands
- Playbooks
  - Targets
  - Variables
  - Tasks
  - Handlers
  - Async
- Ansible Vault
- Roles
- Lab – Creating Playbook for Webserver provisioning

## Module -10: Docker and Containerisation

- What and Why of Containers?
- Introduction to Docker
- Installing Docker
- Basic Docker Commands
- Building Docker Images
- Docker Registry
- Docker file

## Module -11: Continuous Monitoring – Using Nagios

- Nagios Introduction
- Nagios Architecture
- Nagios Plugins
- Nagios Commands
- Nagios Notification

## Module -12: AWS

- What is Cloud Computing? Why it matters?
- Traditional IT Infrastructure

- Cloud Infrastructure and Cloud Advantage
- Cloud Segments: IaaS, PaaS, SaaS
- Cloud Deployment Models
- AWS Fundamentals (EC2, S3, VPC, Auto Scaling, Load Balancer etc...)

Hands-on Lab for every module.