Week 1 – Day 1

INTRODUCTION
Introduction
What is DevOps? Why DevOps?
Five building blocks of DevOps
Role of a DevOps engineer
Course coverage
Introduction to architecture
What is CI/CD?
DevOps Toolchain
Prerequisites
Introduction to AWS

Week 1 – Day 2

TERRAFORM
What is Infrastructure as Code?
What is Terraform?
Configuration Syntax – Comments
Arguments, Blocks, Identifiers
Resources, Providers
What is configuration file?
Create your first terraform conf file
What is a VPC resource?
Terraform commands
Provision your first resource - AWS

Week 2 – Day 1

TERRAFORM
Expressions, types and values
Variable declaration and scenarios
Strings, Numbers
List, Map
Tuple, Object
Provisioning with dynamic values
Terraform State
Terraform Cloud – Remote state
Store state remotely

Week 2 – Day 2

TERRAFORM
What are Terraform modules?
Why modules?
Modules framework
Provision VPC - AWS
What is subnet?
Provision Subnet - AWS
What is internet gateway?
Provision Internet Gateway - AWS
AWS management console

Week 1 - Assignment

Provisioning resources on AWS

Week 2 - Assignment

- Create an EC2 instance in Private subnet.
- Assign EIP to EC2 Instance.
- Add a dynamic block for port 443.
- Add a new subnet and Create route table + Assn.
- Run day end activity

Week 3 – Day 1

TERRAFORM
What is route table ?
Provision Route Table
Provision RT Association
What are security groups?
Provision Security Groups
Terraform Import
Dynamic Blocks
Create your first EC2 Instance
What is Elastic IP?
Terraform commands

Week 3 – Day 2

DEVOPS TOOLCHAIN
BOOTSTRAP DEVOPS TOOLCHAIN
PART 1
What is Jenkins ?
Bootstrap Jenkins server manually
Bootstrap Jenkins using userdata
What is Ansible ?
Bootstrap Ansible using userdata
- Ansible controller
- Ansible managed nodes

Week 4 – Day 1

DEVOPS TOOLCHAIN
BOOTSTRAP DEVOPS TOOLCHAIN
PART 2
What is Nexus ?
Bootstrap Nexus using userdata
What is an application server ?
What is deployment ?
Bootstrap Tomcat server
What is Docker ?
Bootstrap docker using userdata
Quick recap on Operations aspects

Week 4 – Day 2

GIT
What is Version Control System?
Centralized Vs Distributed VCS
What is GIT ?
Installing GIT on local machine.
Git Basics – Init,add,commit
Git status, add, log
Basics of GIT branching
Git remote repositories
GIT pull and push

Week 3 - Assignment

• Terraform assignment

Week 4 - Assignment

• Git assignment

AXONE
DevOps Engineer

Week 5 – Day 1

MAVEN
Introduction to build automation
What is Maven ?
The POM
Understanding pom.xml
Maven build lifecycle
Maven packaging
Jenkins Maven Integration
Maven Goals
Release version vs Snapshot

Week 5 – Day 2

JENKINS
What is Continuous Integration ?
Introduction to Jenkins
Why Jenkins ?
Setup Jenkins
Jenkins plugins
Creating jobs using Jenkins
Jenkins build
Jenkins console output
Jenkins Snippets

Week 6 – Day 1

ANSIBLE
Introduction to YAML
How to write YAML files
What are playbooks ?
Write your first playbook.
Running playbook
Ansible variables

Week 6 – Day 2

ANSIBLE
Ansible conditionals
Ansible loops
Ansible Roles
Ansible Modules
Ansible Adhoc commands
Ansible Galaxy

Week 5 - Assignment

Maven and Jenkins assignment

Week 6 - Assignment

Ansible assignment

Week 7 – Day 1

DOCKER
What is containerization?
What is Docker?
Basic Docker commands
Docker file
Docker Images
Docker Containers
Docker Hub
Docker Registry
Dangling Images

Week 7 – Day 2

PAC – PIPELINE AS CODE
What is PaC ?
Jenkinsfile Basics
Creating a Jenkinsfile
Directives
Agent
Tools
Environment
Jenkinsfile Stages
Build, Test and Deploy
Jenkins build with PaC

Week 8 – Day 1

END TO END PIPELINE
Git -> GitHub -> Jenkins -> Nexus
-    For Snapshot
-    For Release
Git -> GitHub -> Jenkins -> Nexus
<- Ansible – playbook to pull the
latest repo from Nexus

Week 8 – Day 2

E2E (CI/CD)
Git -> GitHub -> Jenkins -> Nexus
<- Ansible -> Tomcat & Docker
-    Deploy to tomcat
-    Deploy to Docker

Week 7 - Assignment

Docker assignment
Jenkinsfile assignment

Week 8 - Assignment

E2E pipeline assignment

Week 9 – Day 1

PROJECT WORKSHOP
Project support for Nginx server

Week 9 – Day 2

PROJECT WORKSHOP
Docker error handling scenarios

Week 10 – Day 1

PROJECT WORKSHOP
End to End IaC

Week 10 – Day 2

PROJECT WORKSHOP
End to End PaC