

## Day - 1

- **Introduction to OpenShift - Core Concepts for Dev & Admin**
  - Introduction to OpenShift and Kubernetes Differences, Why OpenShift?
  - OpenShift Architecture (Control Plane, Workers, Operators, CRDs)
  - OpenShift Console (Developer vs Administrator Views)
  - CLI (oc basics) - login, create, manage
  - Understanding Projects, Namespaces, Users and Roles (RBAC basics)
  - Introduction to OpenShift API and Resources

## Day - 2

- **OpenShift Developer Perspective - Application Build & Deployment**
  - Deploy Applications using Source-to-Image (S2I)
  - Deploying Containers: DeploymentConfig vs Deployment
  - Services, Routes, Ingress, and Gateway API (new OpenShift networking)
  - ConfigMaps, Secrets, and Environment Variables
  - Scaling Applications: Manual and Autoscaling (HPA)
  - OpenShift Pipelines Introduction (Tekton)

## Day - 3

- **OpenShift Administration Perspective - Cluster and Resource Management**

- OpenShift Cluster Installation Overview (IPI vs UPI)
- Node Management (MachineSets, NodePools - new feature)
- Understanding Operators and OperatorHub
- Storage Management in OpenShift (PVCs, RWX, RWO, ODF intro)
- Resource Quotas, LimitRanges, and ClusterResourceQuota
- Backup & Disaster Recovery Basics (Velero, OADP)

## Day - 4

- **Advanced Application & Cluster Management**

- OpenShift GitOps (ArgoCD) - Declarative App Management
- Monitoring with OpenShift Monitoring Stack (Prometheus, Grafana, AlertManager)
- OpenShift Logging (LokiStack, Fluentd)
- Serverless on OpenShift (Knative introduction)
- Debugging Applications (oc debug, oc logs, oc rsh)
- Application Lifecycle Management (ImageStreams, Triggers, Rollbacks)

- **OpenShift Security, Compliance and Real-World Practices**

- Security in OpenShift (SCCs, PSPs, Pod Security Admission)
- OpenShift Authentication Integrations (LDAP, SAML, OAuth)
- Image Security - Vulnerability Scanning and Quay Image Signing
- Multi-Tenancy in OpenShift (RBAC Best Practices)
- Performance Tuning and Cluster Autoscaling (ClusterAutoscaler, MachineAutoscaler)
- Final Capstone Project: Build, Deploy, Monitor, Secure a complete App