

Containers and Kubernetes

Duration: 40 hours

Courseware: Reference

DC: Koenig DC

Modules	Topics
Kubernetes Basics	Containers vs VMs, cloud-native principles
Kubernetes Architecture	Control plane, worker nodes, component responsibilities
Core Kubernetes Objects	Pods, nodes, namespaces, labels and selectors
K3s Fundamentals	Lightweight Kubernetes, edge & resource-constrained use cases
Cluster Models	Single-node vs multi-node clusters, deployment scenarios
High Availability	Multi-node clusters, redundancy, failover concepts
Kubernetes Networking	Cluster networking model, services, connectivity
Load Balancing	Service types, basic ingress concepts
Operations & Troubleshooting	Health checks, logs, basic operational diagnostics
Integrated Secure Architecture	Secure MQTT deployment on Kubernetes over trusted networks
Mini Project	Mini Project – (Kubernetes Track)