
SYLLABUS FOR BOARD OF STUDIES ADOPTION — generated from the live catalogue record

Containers, Docker and Kubernetes

S-07B · 3 days (configurable 1–5 days) · Informatics · Cloud · Years: 2nd, 3rd, PG

CONTENTS

1. Overview	2
2. Hours and credit position	2
3. Course outcomes	2
4. Course content — modules	2
5. Assessment scheme (100 marks)	2
6. CO–PO mapping	2
7. Every participant receives	3
8. Fee	3
9. Designed by	3

Catalogue S-07B · version 1 · generated 2026-08-24

OVERVIEW

Containerising an application, orchestration basics and a deployed multi-container workload.

Containers are the standard unit of modern deployment; students who can containerise and orchestrate an application are immediately valuable to any engineering team.

HOURS AND CREDIT POSITION

Contact hours: 24 Guided project: 6 Self-study: 0 Notional total: 30

Credit claim: 1

30 notional hours ÷ 30 hours per credit (NSQF track, UGC Micro-credentials Guidelines §5.3.3) = 1 credits.

COURSE OUTCOMES

CO1. Explain how containers differ from virtual machines (K2)

CO2. Build a container image with a Dockerfile (K3)

CO3. Compose a multi-container application with networking and volumes (K3)

CO4. Deploy an application to Kubernetes using deployments and services (K3)

CO5. Scale and health-check a containerised workload (K3)

COURSE CONTENT — MODULES

Hours shown are the recommended format; module time scales proportionally when the engagement runs 1–5 days.

Module 1 — Container foundations (4h recommended)

Theory: Images, containers, the Docker workflow

Lab: Run and inspect containers

Output: Container command log

Module 2 — Building images (4h recommended)

Theory: Dockerfiles, layers, registries

Lab: Build and push an image

Output: Custom image

Module 3 — Multi-container applications (4h recommended)

Theory: Docker Compose, networking, volumes

Lab: Compose a multi-container app

Output: Compose file + running app

Module 4 — Kubernetes concepts (4h recommended)

Theory: Pods, deployments, services

Lab: Deploy a pod and a service

Output: Kubernetes manifests

Module 5 — Orchestration in practice (4h recommended)

Theory: Scaling, configuration, health checks

Lab: Scale and health-check a workload

Output: Scaled deployment

Module 6 — Deployment capstone (4h recommended)

Theory: A deployed multi-container workload

Lab: Deploy the capstone workload

Output: Deployed workload

ASSESSMENT SCHEME (100 MARKS)

Continuous lab exercises — 40 marks

Capstone project & demonstration — 40 marks

Quiz & viva voce — 20 marks

CO-PO MAPPING

CO1 !' PO1 (strength 2)

The container model is foundational knowledge.

CO2 !' PO5 (strength 2)

Docker is a modern tool of the field.

CO3 !' PO3 (strength 2)

Composing an app is solution development.

CO4 !' PO5 (strength 2)

Kubernetes is a modern deployment tool.

CO5 !' PO3 (strength 2)

Scaling and health checks are operational solution work.

EVERY PARTICIPANT RECEIVES

- Certificate of completion
- Course material
- LMS access
- Interview question bank
- Mock interview & viva practice
- Optional nasscom NSQF assessment (priced per candidate on your quotation)

FEE

¹1,900 per student, incl. GST

Excludes the optional nasscom assessment where offered. Final pricing on your college's quotation.

DESIGNED BY

Venkat Kurela — Founder & Director, Kurela Cognisive Private Limited