# CKA Workshop

This comprehensive curriculum covers all essential topics for the Certified Kubernetes Administrator (CKA) exam. The content is organized into seven core modules that progress from foundational concepts through advanced operational skills.

Each module builds upon previous knowledge, starting with architectural fundamentals and advancing through installation, API interaction, deployment strategies, operational management, security implementation, and extensibility patterns.

**What You'll Master:**

- Core architecture and cluster components
- Installation and maintenance procedures
- API operations and resource management
- Application deployment techniques
- Scheduling and monitoring operations
- Security and access control
- Platform extensibility with CRDs

## 01

### Module 1: Kubernetes Core Architecture & Concepts

Master the fundamental building blocks of Kubernetes, including cluster components, control plane responsibilities, declarative configuration models, and desired state management principles.

## 02

### Module 2: Cluster Installation and Maintenance

Learn multiple installation methods and develop strategies for safely upgrading clusters while maintaining availability and minimizing downtime.

## 03

### Module 3: Kubernetes API and Object Model

Understand API architecture, access methods (kubectl, RESTful API, proxy), TLS authentication, and core resources including Namespaces, Pods, Deployments, Jobs, Services, and Persistent Storage.

## 04

### Module 4: Application Deployment and Configuration

Explore advanced deployment tools like Helm and Kustomize, and configure Ingress controllers for external traffic management.

## 05

### Module 5: Scheduling and Operations

Gain proficiency in scheduling fundamentals, logging strategies, metrics collection, and utilizing the Kubernetes Dashboard for cluster visualization.

## 06

### Module 6: Security and Governance

Implement Role-Based Access Control (RBAC) to secure cluster resources and enforce governance policies across your Kubernetes environment.

## 07

### Module 7: Kubernetes Extensibility

Extend Kubernetes functionality through Custom Resource Definitions (CRDs) to create domain-specific resources tailored to your organization's needs.

**Exam Readiness:** This structured curriculum aligns directly with CKA exam objectives. Practice hands-on with each module to build the practical skills required for certification success.