Class No	Module Details	Duration
	Module Name: Introduction to Kubernetes	
01	● What is Kubernetes? ● Docker Swarm vs Kubernetes ● Kubernetes architecture & components ● Kubernetes installation and configuration ● Add Kubernetes Masters and Worker nodes ● Know where to get the Kubernetes release binaries ● Manage a Highly-available Kubernetes Cluster ● Lab 01:	03 Hours
	Module Name: Concepts on Kubernetes various objects	
02	● Pod, container, Deployments, DaemonSets, ReplicaSets ● Static Pod, labels, annotations ● Different type of Services ● Pod vs Deployment vs StatefulSets ● Namespace, ConfigMap & Secret ● Managing kubernetes object ● Imperative command and Declarative configuration files approaches ● Lab 02:	03 Hours
	Module Name: Application Lifecycle Management	
03	● Understand deployments ● How to perform rolling update and rollbacks ● Know various ways to configure applications ● Know how to scale applications ● Creating different type of services ● Install and configure bare metalLB load balancer ● Understand Readiness probes, Liveness probes, Startup probes ● Lab 03:	03 Hours
	Module Name: Scheduling	
04	● Use label selectors to schedule Pods ● Taints & Tolerations, Node affinity ● Understand how resource limits can affect Pod scheduling ● Manually schedule a pod without a scheduler ● Display scheduler events ● Lab 04:	03 Hours
	Module Name: RBAC Authorization & ServiceAccount	
	● Understand API Groups in Kubernetes ● Understand ServiceAccount	

05	● Role & Rolebinding ● ClusterRole & ClusterRoleBinding ● Create ConfigMap & Secret ● Inject configmap & secret in pods ● Lab 05:	03 Hours
Module Name: Storage & Data Persistent		
06	● Understand persistent volumes and know how to create them ● Understand access modes for volumes ● Understand persistent volume claims primitive ● Understand Kubernetes storage objects ● Know how to configure applications with persistent storage ● NFS server configure for storage solution ● Lab 06:	03 Hours
Module Name: Networking		
07	● Understand the networking configuration on the cluster nodes ● Understand Pod networking concepts ● Understand Service Networking ● Know how to use Ingress controllers and Ingress resources ● Know how to configure and use the cluster DNS ● Understand CNI ● Install Nginx ingress controller ● Lab 07:	03 Hours
Module Name: Security		
08	● Know how to secure hosts ● Secure Kubernetes ● Understand authentication & authorization ● Manage TLS certificates for cluster components ● View certificate details ● Create certificate for user ● Know how to configure network policies ● Work with images securely ● Define security contexts ● Secure persistent key value store ● Lab 08:	03 Hours
Module Name: Cluster Maintenance		
09	● Kubernetes Software Versions ● Understand Kubernetes cluster upgrade process ● Facilitate operating system upgrades ● Implement backup and restore methodologies ● Implement etcd backup and restore ● Lab 09:	03 Hours

	Module Name: Logging and Monitoring	
10	• Understand how to monitor all cluster components • Understand how to monitor applications • Manage cluster component logs • Manage application logs • Install and configure metric server • Install and configure Kubernetes dashboard • Lab 10:	02 Hours
	Module Name: Troubleshooting	
11	• Troubleshoot application failure • Troubleshoot control plane failure • Troubleshoot worker node failure • Troubleshoot networking • Lab 11:	02 Hours
	Module Name: Network Policies	
12	• Basic of network policies • Prerequisites of network policy • policyTypes: Ingress and Egress • Default policies • Know how to use Ingress & Egress policy • Lab 12:	02 Hours
	Module Name: Helm charts and Jsonpath	
13	• Basic of helm and helm charts • Install helm on kubernetes cluster • Initialize a Helm Chart Repository • Install an Example Chart • Json file format and jsonpath expressions • Lab 13:	02 Hours
	Module Name: CKA Exam Preparation & Sample Questions	
14	• How to register and purchase exam voucher • Exam important instructions • Discuss on exam modules • Exam tips • Sample Questions • Lab 14:	02 Hours
	Module Name: CKA Exam Sample Questions	
15	• Sample Questions & Solutions • Lab 15: Demo CICD full process in kubernetes cluster	03 Hours
	Details	
	Total Course Length	40 Hours