



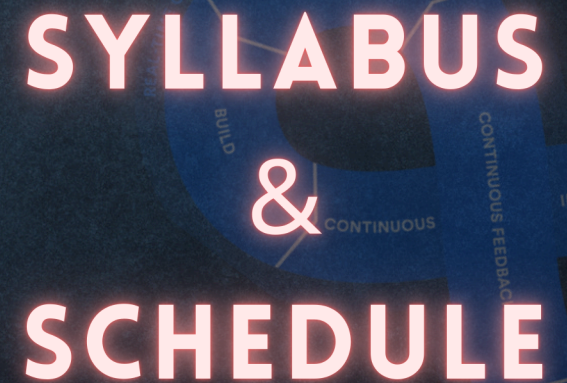
**JUNCOON**

DEVOPS BY **TRAIN WITH SHUBHAM**

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**DEVOPS  
ZERO TO  
HERO**



**SYLLABUS  
&  
SCHEDULE**

# Datewise Course Content:

5th October 9 A.M

- Introduction to DevOps and Cloud

6th October 9 A.M

- Linux Fundamentals

12th October 9 A.M

- Linux Advanced

13th October 9 A.M

- Shell Scripting with a Project for DevOps Engineers

19th October 9 A.M

- Package Management - Docker Fundamentals

20th October 9 A.M

- Docker Advanced

26th October 9 A.M

- CI/CD - Jenkins Fundamentals

27th October 9 A.M

- Jenkins Advanced, GitLab CI/CD Projects & GitLab Runners and Local Setup

2nd November 9 A.M

- GitLab CI/CD

3rd November 9 A.M

- Container Orchestration - Kubernetes Fundamentals

9th November 9 A.M

- Kubernetes Advanced

10th November 9 A.M

- Kubernetes End-To-End Project on EKS

16th November 9 A.M

- Infrastructure as a Code - (IaC) Terraform Fundamentals

17th November 9 A.M

- Terraform Advanced

23rd November 9 A.M

- Ansible with Project

24th November 9 A.M

- Monitoring - Grafana, Loki & Promtail

30th November 9 A.M

- Mega Projects for DevOps Engineers

1st Dec. Onwards 9 A.M

- Job Assistance with Resume Building

# Course Content:

## Introduction to DevOps

- DevOps Roadmap and Career Opportunities
- Secrets to Success as a DevOps Engineer
- What Does a DevOps Engineer do?

## Linux For DevOps

- Setting up Linux via AWS EC2
- File System Hierarchy
- Basic Linux Commands
- Advanced Linux Commands
- Shell Scripting with a Project

## Source Code Management

- Difference between CVCS and DVCS
- Importance of Git
- Installation of Git
- Git three-stage Architecture
- Detail explanation of Repository, Commit, Tags, Snapshots, Push-Pull Mechanism, and Branching Strategy
- Working with Git stash and Git pop
- Resolve Merge conflicts in Git
- Git Revert and Reset (Reset vs Revert)
- Git rebase
- Working with git Squash
- Git cherrypick
- What is Git fork?

## Package Management – Containerization with Docker

- What is Virtualization before deep dive into the Containerization
- O.S level virtualization
- Docker vs Virtual Machine
- What is Docker and its History
- Docker Architecture
- Advantages and limitations of Docker
- Components of Docker (Docker Daemon, Docker Client, Docker Host)
- Docker Image
- Docker lifecycle and PS
- Start and delete a container
- Exploring exec command
- Custom Docker image
- Docker file creation using Dockerfile
- Working with Docker volume
- Mapping volumes (Container to Container, Host to container)
- Creating volume from Dockerfile
- Docker Networking
- Docker port Mapping
- Docker port exposes
- Difference between Docker attach and Docker exec
- Docker Hub and push our image to the Docker Hub
- Docker Compose

## CI/CD

- What is CI/CD pipeline
- Jenkins History
- Getting started with Jenkins
- Jenkins installation on Cloud
- Workflow of Jenkins
- Jenkins UI
- User Management in Jenkins
- Jenkins Shared Library
- Jenkins-Linked Projects
- Source-code polling
- GitLab CI/CD Projects
- GitLab Runners and Local Setup

## Container Orchestration

- What are Monolithic and Microservices Architecture
- What is Kubernetes
- Introduction to Kubernetes
- Features of Kubernetes
- Kubernetes History
- Kubernetes architecture in depth
- Node and Pod
- Fundamentals of Pods and their Lifecycle
- Installing Kubernetes on AWS
- Command with example (kubectl)
- Role of Master Node
- Components of Control Plane and explanation
- Installing kubectl and minikube
- Creation and deletion of a pod
- Kubernetes YAML Configuration
- Higher-level Kubernetes Objects
- K8s Object management

## Container Orchestration

- Labels and Selectors in K8s
- Replication, Auto healing and working with deployment in K8s
- ConfigMap and Secret in k8s
- Deploying Microservices app to K8s cluster
- Kubernetes Networking, Services and Nodeport, Ingress
- Volumes in Kubernetes
- Persistent Volume and LivenessProbe in K8s
- Namespaces in K8s
- Three-tier applications K8s, EKS, Kubeadm
- HELM and Kustomize in K8s
- HPA, RBAC, Service Accounts

## Cloud Engineering

- AWS Global Infrastructure
- Detail overview of Elastic Compute Cloud (EC2)
- Your first EC2 instance
- In-depth guide for EC2 instance
- In-depth guide for EC2 options
- Connecting to a cloud instance
- Handling and management of Security Groups
- S3
- Auto Scaling/ Load balancing
- Cloud Formation and Cloud Watch
- SNS and SQS
- RDS and IAM
- ECS and ECR by Project
- CloudWatch and Billing Alarms

## Infrastructure As Code

- Understanding the concept of (IaC)
- Getting started with Terraform
- Terraform Basics
- Variables, Resources, Attributes and Dependencies
- Terraform State
- Terraform for-each and module
- Terraform Project
- Ansible Ad-hoc Commands
- Ansible Project

## Configuration Management with Ansible

- What is Configuration Management
- What is Ansible & it's History
- Ansible Architecture
- Advantages and limitation with Ansible
- Working with YAML
- Working with Ansible server, Modules, Task, Role, Fact, Inventory, Play, Handler, Notifier, Playbook, Host
- Working with Ansible inventory, Host pattern and establish ssh connection with nodes
- Maintain password less authentication with server and node

## Monitoring

- Grafana and Graphite
- Connecting to docker and EC2 for Logs and monitoring
- Prometheus setup
- Prometheus and Kubernetes Alerting
- CAdvisor

## Mega Projects

- Scrutiny of any Linux Server by Shell Script
- CI/CD Pipeline using Jenkins, AWS, Docker, Kubernetes
- CI/CD with AWS CodePipeline
- Web App Deployments through Ansible and Terraform
- Web application deployment through devsecops practices (OWASP, Trivy and Sonarqube)
- Serverless Deployment for a 3-tier application (Production Level)
- Continuous Delivery via K8S cluster in Prod using AWS EKS & ArgoCD

## Job Assistance

- LinkedIn and Resume Building/ Review
- Mock Interviews
- DevOps Engineers Share their Interview Experiences
- DevOps Interview Questions

# Additional Bonus

## Python For DevOps

- How to write Python code
- Data Structures and Functions
- Exception Handling
- File Handling
- DevOps Libraries and Projects
- Lists , Sets, Dictionaries

## AWS: Zero To Hero

- What is AWS Cloud and Cloud Computing
- How to Crack AWS CCP
- AWS Architecture
- EC2, IAM, S3, RDS
- ECS, ECR, Fargate
- Lambda and API Gateway with DynamoDb

## Generative AI For DevOps

- What is Generative AI
- How to use Generative AI effectively
- Making Prompts like a Pro
- 10X DevOps Engineer by Chat GPT
- Making designs using image generators and Plugins

## Live Projects

- 2 Tier app Deployment
- Resume Building and Review
- Cron Scheduling using Python
- AWS S3 and Boto Project
- CloudFormation template with serverless
- ArgoCD, AWS EKS Three-tier Application Deployment with Prometheus, Grafana Monitoring

**LIVE BATCH**  
**3 MONTHS**  
**SAT-SUN**  
**(9 A.M - 12 P.M)**