Section 1. DevOps Introduction and Need
- What is DevOps?
- Why DevOps?
- How DevOps helps?
- Quiz

Section 2. Basic Linux and Networking Concepts
- Linux Filesystem
- Basic Linux Commands
- Labs
- Quiz

Section 3. Amazon Web services
- Introduction to AWS
- Computing and Storage Service
- Networking (VPC and Subnets)
- Auto-scaling
- Load Balancing
- Labs
- Quiz

Section 4. Ansible
- Introduction
- Configuration Management & Orchestration
    - Module 1 Preparation
        - Environment Setup
        - Installation
    - Module 2: Foundation
        - Inventory
        - Host Selection
        - Tasks
        - Plays
        - Playbook Execution
    - Module 3: Playbooks
        - Playbooks Introduction
        - Packages: apt
        - Packages: become
        - Packages: with_items
        - Services: service
        - Support Playbook 1 - Stack Restart
        - Services: apache2_module, handlers, notify
        - Files: copy
        - Application Modules: pip
        - Files: file
        - Files: template
        - Files: lineinfile
        - Application Modules: mysql_db, mysql_user
        - Support Playbook 2 - Stack Status: wait_for
        - Support Playbook 2 - Stack Status: uri, register, fail, when
        - Playbooks Summary
    - Module 4: Modular Configuration with Roles
        - Roles Overview
        - Converting to Roles: tasks, handlers
        - Converting to Roles: files, templates
        - Site.yml: include
        - Variables: facts
        - Variables: defaults

- Variables: vars
- Variables: with_dict
- Selective Removal: shell, register, with_items, when
- Variables - continued
- Variables: vars_files, group_vars
- Variables: vault
- External Roles & Galaxy

Module 5: Advanced Execution
- Advanced Execution Introduction
- Removing Unnecessary Steps: gather_facts
- Extracting Repetitive Tasks: cache_valid_time
- Limiting Execution by Hosts: limit
- Limiting Execution by Tasks: tags
- Idempotence: changed_when, failed_when
- Accelerated Mode and Pipelining

Module 6: Troubleshooting, Testing, & Validation
- Troubleshooting Ordering Problems
- Jumping to Specific Tasks: list-tasks, step, start-at-task
- Retrying Failed Hosts
- Syntax-Check & Dry-Run: syntax-check, check
- Debugging: debug

- Labs
- Quiz

Section 5. Git and GitHUB

- What is Version Control?
- Types of Version Control Systems
- Introduction to SVN
- Introduction to Git
- Git Lifecycle
- Common Git Commands
- Working with Branches in Git
- Merging Branches
- Resolving Merge Conflicts
- Git Workflow
- Labs
- Quiz

Section 6. Jenkins (Including code coverage)-

Module 1: Getting started with Jenkins
- Introduction to Continuous Integration
- Introduction to Jenkins and the History of Jenkins
- Java 9 Warning
- Install Java
- Text Direction: Install Java
- Install Jenkins
- Jenkins' Architecture and Terms of Jenkins
- Overview of Jenkins UI : Dashboard and Menus
- Create Our First Jenkins Job
- Run our First Jenkins Job

Module 2: Continuous Integration with Jenkins
- Install Git and Jenkins GitHub Plugin
- Create our First Maven-based Jenkins Project
- Run our First Jenkins Build and Jenkins Workspace

- Source Control Polling in Jenkins
- Other Build Triggers of Jenkins

Module 3: Continuous Inspection with Jenkins
- Code Quality and Code Coverage Metrics Report
- Jenkins' Support for Gradle, Ant and Shell Scripts

Module 4: Continuous Delivery with Jenkins
- Archive Build Artifacts
- Install and Configure Tomcat as the Staging Environment
- Deploy to Staging Environment
- The latest Deploy to Container plugin
- Jenkins Build Pipeline
- Parallel Jenkins Build
- Deploy to Production
- Trouble Shooting: Deploy to Production

Module 5: Jenkins Pipeline As Code (Jenkinsfile)
- Introduction
- Overview of Pipeline as Code
- Automate our existing Jenkins Pipeline
- Trouble Shooting: Automate our existing Jenkins Pipeline
- Fully Automated Jenkins Pipeline

- Labs
- Quiz

Section 7. Docker and Swarm

Module 1: Docker Getting Started
- What’s a container, what’s docker and why are they Awesome?
- Hello-World and Dockerfiles, The Blueprint for containers
- Building & Running our first Web App! Challenge
- Accessing a Container's Shell
- Installing Software to a Docker Image
- Access Container Console Logs
- Docker Container Healthcheck
- Linking Docker Containers
- Docker CLI, Some Helpful Commands

Module 2: Docker Compose
- What Is It & How Do I Use it?
- Docker Networks
- Docker Compose Scaling & Healing
- Docker Compose Volumes, Memory Persistence
- Docker Compose Volumes, Memory Persistence Challenge Answer
- Other Helpful Docker-Compose Features

Module 3: Docker Registry
- Docker Hub. What is it really? And How do I use it?
- Docker Hub Registry Alternatives
- Getting Started with Portus, an Enterprise Private Docker Registry
- Portus: Managing Users & Teams

Module 4: Docker Swarm
- Getting Started with Docker Swarm, Clustering Docker Hosts
- Getting Started with Docker Swarm
- Docker Swarm Services
- Docker-Compose vs Docker Stack
- Docker-Compose vs Docker Stack
- Docker Secrets & Configs

- Labs

- Quiz

Section 8. Kubernetes Fundamentals -
- What is Kubernetes
- Technical Overview of Kubernetes
- Kubernetes environment setup
- Kubernetes pod and replica set
- Kubernetes Basics
- Deploying Sample Application
- Labs
- Quiz

Section 9. Terraform-
- What is Infrastructure as a code
- Infrastructure as Code (IaC) vs Configuration Management (CM)
- Introduction to Terraform
- Installing Terraform on AWS
- Basic Operations in Terraform: init, plan, apply, destroy
- Terraform Code Basics
- Deploying an end-to-end architecture on AWS using Terraform
- Labs
- Quiz

Section 10. Monitoring with Prometheus -
- Introduction to Prometheus
- Prometheus Setup
- Monitoring using Prometheus
- Dashboard Visualization
- Creating a Dashboard to monitor the Pipeline
- Labs
- Quiz

Section 11. Assessment