**Introduction-2 Hrs**

**1. Basics**

**- SDLC (Software development Life Cycle)**

**- Agile Introduction**

**- DevOps Introduction**

**2. AWS account creation**

**Linux - 6 Hrs**

1. **File and Directory basics**
2. **File system Hierarchy**
3. **User and File management**
4. **Linux Text editors**
5. **Linux Networking**
6. **Linux Miscellaneous**

**Python – 6 Hrs**

1. **Introduction**
2. **Python Tokens**
3. **Python control structures and Looping**
4. **Python list, set, tuple, dictionary, functions, filter, map, reduce**
5. **OOPs concepts**
6. **Iterators, Generators, List/dict comprehensions**
7. **Multithreading**
8. **Decorators, Context managers**
9. **python IDEs**
10. **Python libraries**
    1. **numpy**
    2. **pandas**
    3. **PEP8 and Coding best practices**
11. **python with MySQL**
12. **python with MongoDB**

**Git and GitHub – 4 Hrs**

**1. Git Intro & Basic commands**

**2. Git ssh and Branching**

**3. GitHub**

**4. Git Branching Strategy**

**5. Git Flow, stash, cherry-pick, rebase, merge**

**Tomcat – 1 Hr**

1. **Overview of Application Servers**
2. **Components and features of Tomcat**
3. **Install Tomcat on windows and Linux start tomcat service**
4. **Host Manager**
5. **Deploying static applications in Tomcat**
6. **Deploying dynamic applications in Tomcat**
7. **SSL Certificate, SCP Command**

**Maven – 2 Hr**

1. **The Build Lifecycle**
2. **The POM, Profiles, Repositories**
3. **Standard Directory Layout**
4. **The Dependency Mechanism**
5. **Optional Dependencies and Dependency Exclusions**

**Artifactory – 1 Hr**

1. **Nexus or Jfrog**

**SonarQube – 2Hrs**

1. **PreRequsites**
2. **Installation**
3. **Architecture**
4. **Executing**
5. **Rules**
6. **Quality Profiles**
7. **Quality Gates**
8. **User Creation**

**Jenkins- 6 hrs**

1. **Intro and installation of Jenkins**
2. **Install Jenkins**
3. **Freestyle and Maven Project type**
4. **install plugins**
5. **Jenkins directory structure**
6. **Plugin Management**
7. **Jobs, Workspace**
8. **3 ways to Automate the build trigger process**
9. **Poll SCM**
10. **Build trigger**
11. **GitHub webhook**
12. **Scripted pipeline.**
13. **Declarative pipeline.**
14. **Multibranch Pipeline.**
15. **Email notification after build is created.**
16. **How to access jenkins from cmd prompt?**
17. **CICD Implementation for Node JS Project.**
18. **Jenkins- Integrate CI tools and write a pipeline.**

**Configuration Management – Ansible – 4 Hrs**

1. **What is Ansible?**
2. **Why Ansible?**
3. **How does Ansible work?**
4. **Case Study: NASA**
5. **Setting up Master slave**
6. **Ansible playbooks**
7. **Ansible roles**
8. **Using roles in playbook.**

**Containerization using Docker – 4 Hrs**

1. **Introduction**
2. **Container lifecycle commands**
3. **Image commands**
4. **Dockerfile**
5. **how to push and pull images from repository (Docker hub).**
6. **How to store and retrieve images from and to Amazon ECR (creating credentials)**
7. **Docker volumes**
8. **Docker compose and Docker swarm.**

**Scripting – 6 Hrs**

1. **Shell scripting**
2. **Python scripting**

**Infrastructure -4 Hrs**

1. **Infrastructure as code using Terraform**

**Kubernetes- 10 Hrs**

1. **Intro and K8S architecture**
2. **cluster setup**
3. **POD and Service**
4. **ReplicationController**
5. **ReplicaSet**
6. **DaemonSet**
7. **StatefulSet**
8. **K8S Volulmes**
9. **Kubernetes\_ConfigMap\_Secrets\_Liveness\_Readiness\_Probes**
10. **Kubernetes\_Scheduling\_Node\_Selector\_Affninity\_Taints\_Tolerations**
11. **Kubernetes\_ClusterAutoScaler**
12. **K8S Kubernetes\_Ingress and RBAC**

**Monitoring services – 2 Hrs**

1. **Nagios or Prometheus**

**AWS (Amazon Web Services) - 5 Hrs**

**Total DevOps - 65 Hrs**