**Download Links**

1. MobaXterm
   1. <https://mobaxterm.mobatek.net/download-home-edition.html>
   2. https://download.mobatek.net/2032020060430358/MobaXterm\_Portable\_v20.3.zip
2. Visual Studio Code
   1. https://code.visualstudio.com/Download
3. AWS Cloud Account Setup
   1. <https://aws.amazon.com/free/>

**Docker (12 Hours)**

* Introduction to Docker
* Docker Architecture
* Virtual Machines vs Containers
* Docker Setup and Configuration
* Components
  + Docker Engine
  + Docker Registry
  + Docker Compose
  + Docker File
  + Images
* Managing Container Linking, Storage, Networking and Logging
* Create DockerFile for Spring Boot application
* Build Docker image
* Lab example to package spring boot microservices into Docker images and publish to public registry

**Kubernetes (12 Hours)**

* Kubernetes Overview
* Kubernetes Architecture
* Kubernetes Setup and Configuration
* Components - Node, Service, Pod
  + Features Overview
  + Kubernetes Job
  + Replication
  + Deployments
  + Volumes
  + Secrets
  + Network Policies
* Creating and deploying an application in Kubernetes with Docker
* Configure Auto Scaling and High Availability
* Managing and accessing Kubernetes cluster with API and Kubectl
* Deploying services using Helm charts
* Kubernetes Monitoring with Dashboard
* Lab example to pull spring boot microservices Docker images from public registry and deploy into K8s

**Intro to AWS (4 Hours)**

* What is Cloud Computing?
* Evolution of Cloud Computing
* Cloud Computing Concepts
* Cloud Computing Architecture
* Cloud Service Models - SaaS vs PaaS vs IaaS
* Cloud Deployment Models - Private, Public, Community, Hybrid
* Benefits and Limitations
* AWS Services Overview
* AWS Account Registration
* AWS Management Console Overview
* Availability Zones/Regions
* AWS Pricing Overview

**Cloud Compute with AWS (4 Hours)**

* Amazon EC2 (Elastic Cloud Compute) Overview
* Amazon AMI (Amazon Machine Image)
* EC2/ AMI CLI
* Elastic IPs, Security Groups, Key Pairs, Placement Groups
* Launching EC2 instance with Windows and Linux OS
* Attaching EBS volume and Configuring Security Groups
* How to upgrade / downgrade EC2 instance types
* Monitoring EC2 instance basic health metrics and logs - Amazon CloudWatch
* Creating custom AMIs and manage life cycle

**Load Balancing and Auto Scaling (4 Hours)**

* Load Balancers Overview
* Elastic Load Balancer
* Auto Scaling Overview
* Creating and configuring Elastic Load Balancer to load balance the EC2 instances with sample webapp
* Creating and configuring Auto Scaling Groups to scale EC2 instances based on configured rules

**Cloud Storage with AWS (4 Hours)**

* AWS S3 (Simple Storage Service) Overview
* Creating S3 Bucket and how to upload / download the data
* Applying Version Control
* S3 Bucket Lifecycle Management
* Static website hosting using S3
* EBS Overview
* EFS Overview
* Glacier Overview
* Storage Gateway Overview

**Microservices on AWS (12 Hours)**

* Microservices Reference Architecture on AWS
* Serverless Microservices with AWS Lambda Functions - Pending to prepare PPT
* Building Microservices with AWS API Gateway
  + Udemy Course PDF **“Ultimate AWS Certified Developer Associate 2020” - Watched. Need to implement.**
* Distributed Data Management with Event Streaming
  + Udemy Course PDF **“Ultimate AWS Certified Developer Associate 2020”**
    - Search
      * AWS Integration & Messaging
      * SQS, SNS & Kinesis
* Microservices Messaging with SQS and SNS
* Containerization of Microservices with AWS ECS and ECR
  + Search in PDF: “AWS ECS - Essentials”
* Service Discovery with AWS
* Distributed Monitoring of Microservices with AWS
* Distributed Tracing with AWS X-Ray
* Log Analysis with AWS Elastic Stack
* Auditing Microservices with CloudTrail and CloudWatch
* Securing Micros ervices with AWS

**AWS DevOps (10 Hours)**

* AWS Devops
* CodeCommit Overview
* CodeArtifact Overview
* CodeBuild Overview
* CodeDeploy Overview
* CodePipeline Overview
* AWS OpsWorks Overview
* Create DevOps pipeline using above services