**Azure Devops: (30 hours)**

**Basics:**

* Introduction to Cloud
* Introduction to Agile
* Introduction to Devops
* Understanding basics of CI/CD
* Understanding the E2E Lifecycle of a Project

**Getting Start with Azure**

* Introduction to Azure
* Azure Services
* Subscribing to Microsoft Azure
* Account Creation
* Azure Portals
* Azure Resource Group

**Azure DevOps Jargons**

* Azure Repos
* Azure Pipelines
* Azure Artifacts
* Azure Test Plans
* Azure Boards
* Continuous Integration using Azure Pipelines
* Pipeline creation
* Environments
* Tasks
* Workflows
* Code Coverage
* Code Quality

**Github:**

* Overview of Software Version Control
* Branching strategies
* Overview of GIT
* GIT – Clone /Commit / Push
* GIT Hub Projects
* GIT Hub Management
* GIT Rebase & Merge
* GIT Stash, Reset, Checkout
* GIT Clone, Fetch, Pull
* Overview of GitHub ,Gitlab
* Other SCM tools- SVN ,Bitbucket
* Real time project by using and Integrating GitHub
* Creating a build pipeline from the DEV branch
* Creating a deployment pipeline to release the core to different environments. Practice in DEV/ QA/ Stage
* Add YAML
* Creating Branches in Git Repositories

**Azure Devops:**

* Introduction to Continuous Integration
* Introduction to Continuous Deployment
* Web Apps
* Devops Starter Project
* Build Pipeline
* Build Artifacts
* Release Pipeline

**Docker:**

* Introduction
  + What is Docker
  + Alternatives to Docker
  + The evolution of containers
  + How containers work
  + Containers and Micro Service Architecture
  + How to create Container Registry in Azure
* Docker Images
  + What is an image
  + What does an image contain?
  + Repositories
  + Versioning & Tags
  + Docker images
  + How to Deploy Images in CR
  + Docker file

**Kubernetes**

* What, Why and Features of Kubernetes
* What is container Communication
* What is Container Orchestration
* Kubernetes cluster, Master and Node
* Architecture
* Yaml file
* Deploying App in Kubernetes
* Explore App
* Understanding Load Balancing
* Explore App Publically
* Scale up the App

**CI/CD:**

* Creating a Web App
* Deploying a .NET core microservice as App service
* Deployment slots
* Autoscaling of App service
* Editing a Build pipeline
* Editing a Release pipeline
* Creating an image of a microservice and storing in Container Registry
* API Management
* BackEnd and FrontEnd APIs
* Microsoft Identity Authentication for App service

**AWS (24 Hrs)**

**Module -1: AWS Introduction**

* Introducing AWS Cloud
* Understanding AWS Architecture with case study (A Holistic View)

**Module-2: Virtual Private Cloud**

* What is VPC?
* How VPC Works?
* Implementing VPC
* Understanding Implicit router and routing table
* Understanding private and public subnet
* Understanding and creating a custom routing table (private and public)
* Understanding and Implementing an Internet Gateway
* Understanding and Implementing Nat Gateway
* Understanding and Implementing VPC EndPoints
* Understanding Security Groups & NACL functions

**Module-3: Elastic Cloud Computing**

* What is EC2?
* Understanding EC2 Instance classification based on performance tiers (Compute, Memory, Storage, GPU, General Purpose)
* Understanding EC2 Instance Purchase options
* Understanding AMI (Amazon Machine Image)
* Deploying EC2 Instance
* Understanding EC2 Instance Key pair, IP Configurations
* Reserved IP addresses
* EC2 Instances Auto Scaling.

**Module-4 AWS Storage**

* Introduction to AWS Storage
* AWS Storage types (EBS,EFS,S3,FSx)
* Working with EBS, EFS & S3

**Module-5: Elastic Load balancing**

* Understanding Load balancing
* Types of AWS elastic load balancer
* How Elastic Load balancer works
* Difference Between internal and external load balancer
* Implementing elastic load balancer

**Module -6 : Identity Access Management**

* Introduction to IAM
* Creating Users & Groups
* Creating IAM Roles

**Module-7: Serverless Computing & API Gateway**

Understanding and implementing Lambda function with a use case

Understanding and implementing an API Gateway

Understanding and implementing a Serverless Dynamo DB Table

Integrate the above

**Module-8: Database Services**

* What are the different Databases offered by AWS - RDS, NoSQL, Aurora, Elasticache, RedShift etc
* Implementing RDS

**Module-9: Container Services & DevOps**

Understanding Elastic Container Service (ECS)

Understanding Elastic Kubernetes Service (EKS)

Understanding AWS DevOps components - CodeCommit, Codebuild, Code Deploy, CodePipeline, CloudFormation

**Module-10: Monitoring & Auditing AWS**

* Introduction Cloud Watch
* Configuring Cloud Watch
* Monitoring services using Cloud watch

Describing CloudTrai