Syllabus

Section 1: Fundamentals of AWS Cloud Computing

❏ Introduction to Cloud Computing

❏ Cloud Environment Architecture

❏ Cloud Computing Models

❏ Introduction to Amazon Web Services

❏ AWS Global Infrastructure

Section 2: Elastic Compute Cloud

❏ Launching our first EC2 instance

❏ EC2 instance types & Pricing Models

❏ Creating AMI and Image Templates

❏ Understanding Security Groups - a Server side Firewall

Section 3: Virtual Private Cloud

❏ Introduction to Network Switches & Virtual Private Cloud

❏ VPC & Subnets

❏ Private and Public Subnets

❏ Internet Gateways, VPC Peering & NAT Gateways

❏ VPN Setup

❏ IP Addressing in AWS

Section 4: Storage

❏ Introduction to Block & Object storage mechanism

❏ Introduction to Elastic Block Store - EBS

❏ EBS Snapshots

❏ EBS Volume Types

❏ Instance Store Volumes

❏ Introduction to Simple Storage Service (S3)

❏ Features of S3

❏ Storage Types

❏ Static Website Hosting

❏ Versioning

❏ Life Cycle Policy

❏ Cross Region Replication

❏ Encryption

❏ Basics of Athena

❏ Introduction to EFS

❏ Connect a drive via network

❏ Share the drive among multiple servers

Section 5: Elastic Load Balancers and Elasticity

❏ Understanding High Availability Configuration

❏ ELB Configuration with Classic and Application Load Balancers

❏ Auto Scaling

Section 6: Identity & Access Management

❏ Understanding the IAM Policies

❏ IAM User, IAM Policy and IAM Role

Section 7: Databases

❏ Introduction to Relational Databases

❏ Creating our first database structure in MySQL

❏ Getting started with DynamoDB

❏ Know about ElastiCache, Redshift

Section 8: Decoupling Applications

❏ Amazon SQS

❏ Amazon SNS

Section 9: Domain Name System

❏ Introduction to DNS

❏ Understanding DNS Records

❏ Introduction to Route53

❏ Register a Domain using Route 53

❏ Manage DNS Hosts

Section 10: AWS CloudFront

❏ Introduction to CloudFront

❏ CloudFront with S3

❏ CloudFront Advanced Concepts

Section 11: Serverless Computing

❏ Serverless Introduction

❏ Lambda

❏ Setting up Server Auto Start with a Lambda Function

❏ Elastic Beanstalk

❏ Host a Sample PHP website using Elastic Beanstalk

Section 12: AWS CLI and SDK

❏ Getting Started with AWS CLI

❏ AWS CLI setup on EC2 instances

❏ Connect EC2 instance with other AWS services like S3 or SNS or SES

Section 13: Monitoring

❏ Understanding CloudWatch

❏ Setup Alarms for Matrix changes

❏ Auditing AWS environment with CloudTrail

❏ Schedule Event Rules using Target based services

**CI CD pipelines with AWS**

· [Introduction to DevOps and CICD](https://cloudacademy.com/learning-paths/aws-developer-services-for-cicd-199/)

· Understanding basics of CI, CD pipelines.

**Code Commit**

· Introduction AWS Code Commit

· Creating a Code Commit GIT Repository to Host a Portal Web Application Project

· Understand and analyse continuous integration and continuous delivery (CI/CD) pipeline on AWS

· Create a repository

· Creating credentials to access your repository

· Adding files to your repository

· Pushing your commit to your remote repository

**Code Build**

· Working With AWS Code Build

· Using Code Build to Build and Package a Portal Web Application

· Running Build automation for Maven java source code

· Running builds for NodeJS source code

· Running build automation for Gradle source code

· Building and Testing with AWS Code Build

· Create buildspec.yml and start build

· Create AWS Code Build Notifications

**Code Deploy**

· Working with AWS Code Deploy

· Using AWS Code Deploy to Deploy a Portal Web Application

· Create pre-requisite roles required for Code Deploy

· Create Application, Deployment Group and Deployment

· Create appspec.yml and scripts required for Code Deploy Life Cycle Events

· AWS Code Deploy Conclusion

**Code Pipeline**

· Introduction to AWS Code Pipeline

· Creating a Full CI/CD for our Portal Application Using Code Pipeline

· Understand how pipeline helps automate steps in software delivery process, such as initiating automatic builds and then deploying to Amazon EC2 instances.

· -Understand the usage of AWS Code Pipeline, a service that builds, tests, and deploys your code every time there is a code change, based on the release process models you define.

· Add Manual Approval Stage and Production Deployment Stage

· -Demonstrate to create a very simple pipeline that pulls code from a source repository and automatically deploys it to an Amazon EC2 instance.

· Using AWS Code Deploy Blue/Green Deployments in Your Pipeline